

**TASK NO. 93H**

**HOW MANY PEOPLE ARE  
IN NEED OF TREATMENT**

*Submitted to:*

**Executive Office of the President  
Office of National Drug Control Policy  
750 17th Street, N.W., Eighth Floor  
Washington, DC 20500**

*Submitted by:*

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1400 Eye Street, N.W.  
Washington, DC 20005**

**Lewin-VHI, Inc.  
Suite 500  
9302 Lee Highway  
Fairfax, VA 22031**

**July 14, 1993**

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**Draft Report**  
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**EXECUTIVE SUMMARY**

In 1991 there were from 4.4 to 4.9 million persons in need of treatment for drug problems. These estimates use methodologies developed respectively by the National Institute on Drug Abuse (NIDA), and the Institute of Medicine (IOM). Estimates are presented using both methodologies, although the IOM estimates seem more plausible.

The 4.9 million persons in need of treatment included 3.67 million individuals in the "general" population, 723,000 persons on probation or parole, 424,000 persons incarcerated in prisons or jails and 110,000 homeless individuals (table A).

The population in need of treatment--using the IOM methodology--apparently declined from about 5.4 million in 1988 and 5.3 million in 1990 to 4.9 million in 1991, a 9 percent drop over three years (table A). Using the NIDA approach treatment need fell from 5.8 million in 1988 to 4.35 million in 1991, for a 25.3 percent decrease (table B). Based on trends in other measures the IOM trends seem more plausible: in NHSDA current use only fell 13 percent and past year use declined by 6.9 percent from 1988 to 1991. The Drug Abuse Warning Network (DAWN) and the Drug Use Forecasting (DUF) system only found modest declines, if any, between 1988 and 1991.

NHSDA estimates covered 2.5 million persons that had been on probation or parole in the prior year--a population known to be at high risk for drug problems. This is 50 percent of the roughly 5 million persons criminal justice data indicated had such a status in 1991. About 15 percent (369,000) of the 2.5 million persons met the NIDA criteria for needing treatment; 34 percent indicated they had used illicit drugs in the past month; 52 percent in the past year; and 80 percent had ever used illicit drugs.

While these findings show that NHSDA does cover a significant number of high risk individuals who are forthcoming about their drug use, it also shows that a large number of these persons are not captured in NHSDA estimates. There is no good methodology to estimate the number of criminally active individuals that are not supervised by the criminal justice system.

NHSDA-based estimates of treatment need are probably conservative (even ignoring the issue of poor coverage of high-risk individuals) because the survey does not include all of the information that diagnostic criteria require. The lack of certain information probably causes the estimates from the survey to be biased down.

The most frequently abused substances in NHSDA (using the NIDA criteria, which are specific to particular drugs) are marijuana (2.1 million people), cocaine (1.0 million people), and stimulants (344 thousand people). Approximately 100 to 200 thousand people each met clinical criteria for stimulants, tranquilizers, sedatives, analgesics, hallucinogens, heroin, other opiates and inhalants.

**TABLE A.**  
**Estimate of the Need for Drug Abuse Treatment Using the**  
**Institute of Medicine Methodology: Numbers in Need of**  
**Drug Abuse Treatment**

	1988	1990	1991
<b>NHSDA General Household Population(1)</b>	4,633,000	4,436,000	4,043,000
- - General Population	4,316,000	4,091,000	3,674,000
- - Probation and Parole Population	317,000	345,000	369,000
- - Homeless Population Using Shelters	N/A	N/A	44,000
<b>Remaining Parole and Probation Population(2)</b>	305,000 *	331,000 *	354,000
<b>Incarcerated Population(3)</b>	319,000	380,000	424,000
<b>Remaining Homeless Population</b>	110,000	110,000	66,000
<b>Total:</b>	5,367,000	5,257,000	4,887,000

1 Lewin-VHI analysis of 1988, 1990, and 1991 NiDA National Household Survey on Drug Abuse.

2 Lewin-VHI analysis of U.S. Department of Justice statistics, 1991.

3 Includes juveniles.

\* Total of those covered and not covered by the 1991 NHSDA.

**TABLE B.**  
**Estimate of the Need for Drug Abuse Treatment Using the**  
**NIDA Methodology: Numbers in Need of Drug Abuse Treatment**

	1988	1990	1991
<b>NHSDA General Household Population(1)</b>	5,089,000	4,306,000	3,507,000
- - General Population	5,089,000	4,306,000	3,507,000
- - Probation and Parole Population	317,000	345,000	369,000
- - Homeless Population Using Shelters	N/A	N/A	44,000
<b>Remaining Parole and Probation Population(2)</b>	305,000 *	331,000 *	354,000
<b>Incarcerated Population(3)</b>	319,000	380,000	424,000
<b>Remaining Homeless Population</b>	110,000	110,000	66,000
<b>Total:</b>	5,823,000	5,127,000	4,351,000

1 Lewin-VHI analysis of 1988, 1990, and 1991 NiDA National Household Survey on Drug Abuse.

2 Lewin-VHI analysis of U.S. Department of Justice statistics, 1991.

3 Includes juveniles.

\* Total of those covered and not covered by the 1991 NHSDA.

About 45 percent of those needing treatment (again using the NIDA criteria) only meet clinical criteria for marijuana (although they may also use other drugs). The remaining 55 percent have problems of clinical severity with other drugs, of whom 25 to 35 percent also have a problem with marijuana. One quarter of those meeting the NIDA criteria were no longer current users at the time of the survey. They had stopped using drugs at least 30 days prior to the survey.

This study estimates that about 1.15 million persons of the roughly 5 million persons under criminal justice supervision in 1991 were in need of treatment, of whom 723,000 were on probation or parole, and 424,000 were in prison or jail. Studies have found that well over 50 percent of the 1 million prison and jail inmates have a history of illicit drug use, and that conceivably about 30 to 40 percent of inmates might meet clinical criteria for needing treatment, although studies have not been performed for this purpose.

The IOM estimates represent "past month" prevalence (current users) and are very sensitive to poly-drug use. In contrast, the NIDA estimates are "past year" prevalence, but appear to miss poly-drug abuse except insofar as an individual meets the separate criteria for dependence or abuse of more than one drug.

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**Draft Report**  
**HOW MANY PEOPLE ARE IN NEED OF TREATMENT**

**I. Introduction**

Until 1989 there had been virtually no attempts to estimate the need for drug treatment services in the United States. There have been several efforts which have examined different aspects of the topic since that time (Office of National Drug Control Policy, 1989; Institute of Medicine, 1990; and Office of National Drug Control Policy, 1991). The objective of this study is to develop a current set of estimates for the need for treatment, building on the work previously performed.

The several studies have used alternative criteria and data sets to develop their estimates. We shall briefly review these alternative approaches, before presenting a recommended approach. Specifically, this study attempts to apply "clinical-like" criteria to the determination of how many persons need treatment, examining the relatively distinct populations and concordant data sets available for this purpose.

The following sections of this study examine the need for treatment among the "general" population, the criminal justice population and the homeless. First, we discuss prior estimates of the need for drug abuse treatment. Then, we examine the clinical criteria for determining need for treatment. Third, we present our estimates of the need for treatment in the United States based on an analysis of NHSDA and other sources of data.

**II. Prior Estimates of the Need for Treatment**

The first attempt to apply clinical criteria to a general population (but not a nationally representative sample) was in the 1980-1984 Epidemiologic Catchment Area study sponsored by the National Institute of Mental Health. About 20,000 adults (age 18 and above) in 5 metropolitan areas were administered a rigorous set of interviews that attempted to apply the clinical criteria from the Diagnostic and Statistical Manual-III (or DSM-III) for a broad range of mental disorders, including dependence and abuse of alcohol and drugs. It was estimated that across three of the areas there was a lifetime prevalence of approximately 1 percent for dependence on illicit drugs, and 1 percent for abuse (Robins et al., 1984). This is equivalent to a national total of about 1.6 million persons each, for a total of 3.2 million persons in need of drug abuse treatment over their lifetimes.

The first widely used estimate of the need for drug treatment in the United States was developed for the Office of National Drug Control Policy (ONDCP) for the 1989 National Strategy. A special analysis of the 1988 National Household Survey on Drug Abuse (NHSDA) found that about 4 million persons had used drugs over 200 times in the preceding 12 months. Based on unstipulated clinical judgment, it was estimated that about one quarter of these might stop using drugs without treatment, and another quarter might not respond to treatment, and that the remaining half of these were good candidates for treatment.

An estimate of 5.5 million was developed by the Institute of Medicine (IOM, 1990). The IOM attempted to develop estimates applying "quasi-clinical" criteria to the 1988 NHSDA, and, recognizing the coverage limitations of NHSDA, supplementing these estimates with data on populations under criminal justice supervision and the homeless. The IOM study recognized that the 1988 NHSDA did not fully correspond to established sets of clinical criteria, and furthermore, that poly-drug abuse is more the norm than abuse of a single substance. Determinations of "need for treatment" were based on ascertainment of symptoms and consequences across the full spectrum of illicit drug use, rather than attempting to make a determination on a "drug-by-drug" basis.

In 1990 the Department of Health and Human Services convened a working group chaired by the National Institute on Drug Abuse (NIDA) to develop new estimates of the need for treatment. Unpublished estimates from NHSDA estimated that in 1988 about 5.1 million persons met the criteria for dependence or abuse of one or more illicit drugs. In this analysis NIDA attempted to apply the DSM-III clinical criteria (discussed below). In contrast to the IOM estimates, NIDA did not include separate estimates for the probation/parole population on the theory that this group must have a place of residence in order to be supervised and would therefor be included in the survey sample frame.

An ONDCP Technical Paper (What America's Users Spend on Illegal Drugs, 1991) estimated that in 1990 there were about 1.75 million heavy cocaine users and 700,000 heavy heroin users, with some overlap between the populations. That study did not publish estimates of heavy users of other drugs, nor did it attempt to make judgments about the number of persons in need of treatment, although one could construe these estimates in that manner.

### **III. Clinical Criteria for Diagnosing Need for Drug Treatment**

Not all drug users require treatment in order to stop using drugs. In fact, most drug users stop without any professional assistance. While this point has not been widely recognized in public policy circles, substance abuse treatment professionals have been forced to recognize this reality because public treatment programs have often been confronted with more persons seeking treatment (either voluntarily, or due to criminal justice coercion) than could be treated with available funding. In this situation, the question becomes who needs the help of treatment in order to stop using drugs. The field has developed sets of diagnostic criteria which distinguish these most difficult cases from less severe cases. Such criteria should be used when attempting to study how many persons "need" drug treatment.

Diagnostic criteria distinguish drug "use" from drug "abuse" and "dependence". Dependence implies that the individual would experience great difficulty in stopping due to either physiological (e.g., withdrawal) or psychological (e.g., "craving") phenomena, and the individual is also experiencing some impairment in social functioning. Abuse implies a different level of need for treatment, and means that social functioning is impaired, but that physiological and/or psychological compulsion has not yet become a major aspect of their drug use. Such distinctions are based on information about the level and pattern of drug use and the level and severity of both symptoms and consequences of drug use.

Initially developed for use on individuals in clinical settings, diagnostic criteria are also applied to large-scale population studies of the use and abuse of drugs. The three most recent diagnostic criteria include:

- the International Classification of Diseases-10th Revision Diagnostic Criteria for Research (ICD-10 DCR: World Health Organization, 1992);
- the Diagnostic and Statistical Manual of Mental Health Disorders, Third Edition, Revised (DSM-III-R: American Psychiatric Association, 1987); and
- the Diagnostic and Statistical Manual of Mental Health Disorders, Fourth Edition, Draft Criteria (DSM-IV Draft Criteria: American Psychiatric Association, 1993).

Exhibits 1 and 2 provide a detailed description of each classification system's criteria for substance dependence and abuse (abuse is termed "harmful use" in ICD-10).

The basic approach of these criteria is to establish the presence or absence of a set of "symptoms", which include both clinical manifestations (e.g., withdrawal, tolerance, craving) and social consequences (drug related problems with family, friends, job and/or the criminal justice system). To be assigned a particular diagnosis requires that an individual meet predetermined counts of such symptoms. Dependence criteria include both clinical manifestations as well as social impacts, while abuse generally means that social impacts are paramount, and there are few if any physiological symptoms of dependence.

There have been several previous versions of each classification system. Indeed, DSM-IV replaces DSM-III-R and represents an attempt to more specifically define the criteria for abuse and dependence. Through extensive literature reviews, field trials and feedback from professionals in the field, both ICD and DSM have been improved in terms of clarity, accuracy, consistency, and applicability to survey research. The ICD-10 Diagnostic Criteria for Research is a more detailed version of the ICD-10 used for clinical purposes.

There are some differences among ICD-10, DSM-III-R, and DSM-IV in their criteria. With the exception of duration, their criteria for dependence vary minimally in the symptoms or problems covered or in the degree of detail used to describe symptoms/problems. DSM-IV has more explicit detail, making it simpler to count symptoms/problems. However, because of this, it requires more symptoms/problems to add up to the required minimum of three for a diagnosis of dependence. The three diagnostic criteria differ more significantly in their definition of substance abuse/harmful use. Again, all three criteria differ in their duration requirements. ICD-10 has the least number of symptoms and is the most vague and DSM-IV appears to be the most developed in terms of clarity and applicability to research instruments.

**Exhibit 1  
Diagnostic Criteria of Substance Dependence**

ICD-10 <sup>1</sup>	DSM-III-R <sup>2</sup>	DSM-IV <sup>3</sup>
<b>Duration Criteria -- Dependence</b>		
Three or more of the following manifestations should have occurred together for at least one month or if persisting for periods of less than one month than they have occurred together repeatedly within a twelve month period.	The presence of three or more of the following conditions, persisting for at least one month, or having occurred repeatedly over a longer period of time.	A maladaptive pattern of substance use, leading to clinically significant impairment or distress, as manifested by three or more of the following occurring at any time in the same twelve month period.
<b>Symptoms Criteria-- Dependence</b>		
<b>Lack of Control</b>		
Impaired capacity to control substance-taking behavior in terms of onset, termination or level of use, as evidenced by: the substance being often taken in larger amounts or over a longer period than intended, or any unsuccessful effort or persistent desire to cut down or control substance use.	Substance taken in larger amounts or over a longer period than the person intended.  Persistent desire or one or more unsuccessful efforts to cut down or control substance abuse.	The substance is often taken in larger amounts or over a longer period than was intended.  A persistent desire or unsuccessful efforts to cut down or control substance abuse.
<b>Withdrawal</b>		
A physiological withdrawal state when substance use is reduced or ceased, as evidenced by the characteristic withdrawal syndrome for the substance, or use of the same (or closely related) substance with the intention of relieving or avoiding withdrawal symptoms.	Characteristic withdrawal symptoms.  Substance often taken to relieve or avoid withdrawal symptoms.	Withdrawal, as manifested by either of the following: a) The characteristic withdrawal syndrome for the substance. b) The same (or closely related) substance is taken to relieve or avoid withdrawal symptoms.
<b>Tolerance</b>		
Evidence of tolerance to the effects of the substance, such that there is a need for markedly increased amounts of the substance to achieve intoxication or desired effect, or that there is a markedly diminished effect with continued use of the same amount of the substance.	Marked tolerance: need for markedly increased amounts of the substance (i.e., at least 50% increase) in order to achieve intoxication or desired effect, or markedly diminished effect with continued use of the same amount.	Tolerance, as defined by either of the following: a) need for markedly increased amounts of the substance to achieve intoxication or desired effect. b) markedly diminished effect with continued use of the same amount of the substance.

**Exhibit 1**  
**Diagnostic Criteria of Substance Dependence**  
**(Continued)**

ICD-10 <sup>1</sup>	DSM-III-R <sup>2</sup>	DSM-IV <sup>3</sup>
<b>Preoccupation</b>		
Preoccupation with substance use, as manifested by: important alternative pleasures or interests being given up or reduced because of substance use, or a great deal of time being spent in activities necessary to obtain the substance, take the substance, or recover from its effects.	Important social, occupational, or recreational activities given up or reduced because of substance use.  A great deal of time spent in activities necessary to get the substance (e.g., theft), taking the substance (e.g., chain smoking), or recovering from its effects.	Important social, occupational, or recreational activities given up or reduced because of substance use.  A great deal of time is spent in activities necessary to obtain the substance (e.g., visiting multiple doctors or driving long distance), use the substance (e.g., chain-smoking), or recover from its effects.
<b>Use Despite Consequences</b>		
Persisting with substance use despite clear evidence of harmful consequences, as evidenced by continued use when the person was actually aware of, or could be expected to have been aware of the nature and extent of harm.	Continued substance use despite knowledge of having a persistent or recurrent social, psychological, or physical problem that is caused or exacerbated by the use of the substance (e.g., keeps using heroin despite family arguments about it, cocaine-induced depression, or having an ulcer made worse by drinking).	Continued substance use despite knowledge of having had a persistent or recurrent physical or psychological problem that was likely to have been caused or exacerbated by the substance (e.g., current cocaine use despite recognition of cocaine-induced depression, or continued drinking despite recognition that an ulcer was made worse by alcohol consumption).
<b>Compulsion to Use</b>		
A strong desire or compulsion to take the substance.		
<b>Impaired Social Roles</b>		
	Frequent intoxication or withdrawal symptoms when expected to fulfill major role obligations at work, school, or home (e.g., does not go to work because hung over, goes to school or work "high," intoxicated while taking care of his or her children), or when substance use is physically hazardous (e.g., drives when intoxicated).	

<sup>1</sup>International Classification of Diseases – 10th Revision, Diagnostic Criteria for Research (World Health Organization, in press)

<sup>2</sup>Diagnostic and Statistical Manual of Mental Health Disorders, Third Edition, Revised (American Psychiatric Association, 1987)

<sup>3</sup>Diagnostic and Statistical Manual of Mental Health Disorders, Fourth Edition, Draft Criteria (American Psychiatric Association, 1993)

**Exhibit 2**  
**Diagnostic Criteria for Abuse or Harmful Use of a Substance<sup>1</sup>**

ICD-10 <sup>2</sup>	DSM-III-R <sup>3</sup>	DSM-IV <sup>4</sup>
<b>Duration Criteria – Abuse/Harmful Use</b>		
The pattern of use has persisted for at least one month or has occurred repeatedly within a twelve-month period.	Some symptoms of the disturbance have persisted for at least one month, or have occurred repeatedly over a longer period of time.	One or more symptoms of substance use occurring at any time during the same twelve month period.
<b>Symptoms Criteria – Abuse/Harmful Use</b>		
Clear evidence that the substance use was responsible for (or substantially contributed to):	A maladaptive pattern of substance use indicated by at least one of the following:	A maladaptive pattern of substance use leading to clinically significant impairment or distress, as manifested by one or more of the following:
<b>Physical/Psychological Harm</b>		
Physical or psychological harm or impaired judgment or dysfunctional behavior, leading to adverse interpersonal consequences or disability.	Recurrent use in situations in which use is physically hazardous (e.g., driving while intoxicated).	Recurrent substance use in situations in which it is physically hazardous (e.g., driving an automobile or operating a machine when impaired by substance use).
<b>Use Despite Consequences</b>		
	Either continued use despite knowledge of having a persistent or recurrent social, occupational, psychological, or physical problem that is caused or exacerbated by the use of the psychoactive substance.	Continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance (e.g., arguments with spouse about consequences of intoxication, physical fights).
<b>Impaired Social Roles</b>		
		Recurrent substance use resulting in a failure to fulfill major role obligations at work, school, or home (e.g., repeated absences or poor work performance related to substance use; substance-related absences, suspensions, or expulsions from school; neglect of children of household).
<b>Legal Consequences</b>		
		Recurrent substance-related legal problems (e.g., arrests for substance-related disorderly conduct).
<b>Exclusion Criteria</b>		
The disorder does not meet the criteria for any mental or behavioral disorder related to the same drug in the same time period (except for acute intoxication).	Never met the criteria for Psychoactive Substance Dependence for this substance.	Has never met the criteria for Substance Dependence for this class of substance.

<sup>1</sup>"Harmful Use" is the ICD-10 term for this category and "Substance Abuse" is the DSM-III-R and DSM-IV term.

<sup>2</sup>International Classification of Diseases – 10th Revision, Diagnostic Criteria for Research (World Health Organization, in press)

<sup>3</sup>Diagnostic and Statistical Manual of Mental Health Disorders, Third Edition, Revised (American Psychiatric Association, 1987)

<sup>4</sup>Diagnostic and Statistical Manual of Mental Health Disorders, Fourth Edition, Draft Criteria (American Psychiatric Association, 1993)

#### **IV. The Need for Treatment in the Household Population**

General population surveys of the extent of drug abuse in the United States have been conducted since 1971, beginning with the National Household Survey on Drug Abuse. Five general population surveys, including NHSDA, have attempted to apply standardized diagnostic criteria to more accurately determine the prevalence of drug problems.

However, to date, only NHSDA comprehensively measures the problem. Three of the surveys are limited in their ability to estimate the need for drug abuse treatment for two primary reasons. First, each survey covers a different population and, most importantly, misses several critical populations in which the prevalence of drug abuse is known to be high. Second, each survey asks a different set of questions on drug use and, with a few exceptions, fails to capture diagnostic criteria in those questions. It should be noted that a new survey, the National Longitudinal Alcohol Epidemiologic Survey, has included questions about the full range of illicit drugs that will allow need for treatment to be determined using the complete ICD and/or DSM criteria. This survey has been sponsored by the National Institute on Alcohol Abuse and Alcoholism, and should begin producing results in late 1993. Appendix A includes an overview of the four general population surveys, excluding NHSDA.

##### **A. Overview of the National Household Survey on Drug Abuse**

The NIDA National Household Survey on Drug Abuse is the most comprehensive nationally representative survey of drug abuse in the United States. Conducted periodically since 1971, NHSDA is a survey of the American household population ages 12 and older. Participants for the study are selected using a multi-stage area probability sampling method, with over sampling for specific racial and ethnic groups. After selection, respondents are interviewed in person in their homes by trained interviewers.

NHSDA has several strengths. Since the 1988 survey, it has collected information on some items that are part of the ICD-10 and DSM-III-R criteria for drug abuse and dependence. Furthermore, while NHSDA is limited in that it surveys only the American household population, since 1991, the survey sample has included persons living in group quarters; such as civilians living on military installations, students living in college dormitories, and, more specifically, those sleeping in homeless shelters. A final strength of NHSDA is that because it was the first national survey on drug use, it provides long-term trend information.

The major weaknesses of NHSDA are that: (1) it does not adequately measure drug abuse in the homeless and the criminal justice populations and (2) it does not include the complete diagnostic criteria for drug abuse and dependence. As illustrated in Exhibit 3, NHSDA questions do not provide the complete information required to diagnose substance dependence. NHSDA only fully captures one of the DSM-IV dependence criteria; partially captures most of the DSM-IV, DSM-III-R and ICD-10 dependence criteria; and does not address at least one dependence criteria from each classification system. As illustrated in Exhibit 4, the correspondence of NHSDA questions with the criteria for substance abuse or harmful use is similarly limited.

Exhibit 3

Correspondence of Questions from the National Household Survey of Drug Abuse  
with Diagnostic Criteria for Substance Dependence

Criteria	ICD-10	DSM-III-R	DSM-IV
Duration	✓	✓	✓✓
Lack of Control	✓	✓	✓
Withdrawal	✓	✓	✓
Tolerance	✓	✓	✓
Preoccupation	○	○	○
Use Despite Consequences	✓	✓	✓
Compulsion to Use	○	N/A	N/A
Impaired Social Roles	N/A	✓	N/A

- ✓✓ Full Correspondence
- ✓ Partial Correspondence
- No Correspondence
- N/A Not Applicable

## Exhibit 4

**Correspondence of Questions from the National Household Survey of Drug Abuse  
with Diagnostic Criteria for Abuse/Harmful Use**

Criteria	ICD-10	DSM-III-R	DSM-IV
Duration	✓	✓	✓✓
Physical/Psychological Harm	✓	✓	✓
Use Despite Consequences	N/A	✓	✓
Impaired Social Roles	N/A	N/A	✓
Legal Consequences	N/A	N/A	✓

- ✓✓ Full Correspondence  
 ✓ Partial Correspondence  
 o No Correspondence  
 N/A Not Applicable

NHSDA questions are based on the past twelve months which, while corresponding well with DSM-IV, contrasts with the one-month duration criteria option in DSM-III-R and ICD-10. Furthermore, NHSDA questions are not able to provide information, as needed for an ICD-10 and DSM-III-R diagnosis, on whether problems *occurred together or repeatedly*. NHSDA questions fall short of providing sufficient information to address the symptom, *"continued substance use despite knowledge of having had....."* a variety of social problems, which is integral to all three diagnostic systems. While it examines whether negative social, physical and personal problems have occurred, NHSDA's questions do not indicate whether use was continued despite knowledge that it would cause or exacerbate these problems. Finally, no questions in NHSDA adequately address the ICD-10 symptom of *"a strong desire or compulsion to take the substance"* or the DSM-III-R symptom of *"frequent intoxication or withdrawal symptoms when expected to fulfill major role obligations....."* Provided in Appendix B is a list of the NHSDA questions which correspond with dependence criteria and abuse/harmful use criteria.

While NHSDA is the most comprehensive survey available, its limitations mean that it yields conservative or low estimates of the number of persons in the household population that need treatment. It only partially covers the criminal justice and homeless populations, groups that are at high risk for drug problems. More fundamentally, NHSDA only asks a subset of the diagnostic items necessary to make ICD or DSM diagnoses. It is unknown how significantly this affects the estimates of numbers of persons with dependence or abuse of illicit drugs. However, the NLAES discussed above may make it possible to analyze the extent of bias introduced from an attenuated set of diagnostic items.

## **B. Analytic Approach and Findings**

This analysis employs computer algorithms and programs developed by the Institute of Medicine (IOM, 1990) and the National Institute on Drug Abuse (personal communication from Mark Brodsky, 1993) to estimate the number of individuals that are likely to need drug treatment. Specifically, separate estimates of the need for drug abuse treatment are made applying both the IOM and the NIDA models to the 1986, 1990 and 1991 National Household Survey on Drug Abuse. The estimates are then compared and cross-analyzed.

In general, each model examines symptoms and patterns of drug use acknowledged by respondents and determines whether a particular case meets criteria for dependence or abuse, or otherwise might be considered to be in need of treatment. Since NHSDA is a sample, the indicated cases are weighted by the multiplicative inverse of their probability of inclusion in the sample to yield a national estimate of the number of persons with the defined set of characteristics. The NIDA and IOM models differ in two ways: 1) the IOM model considers the frequency and timing of drug use (the NIDA model ignores these factors); and 2) the NIDA model considers dependence for each drug separately while the IOM model makes no distinction between which drug is used and which drug is causing the symptoms or problems.

The IOM model bases assignment of need for treatment on the respondent's frequency and timing of use and on the number of symptoms and problems reported. Symptoms of dependence are coded into three ranges: no reported symptoms from any drug; one reported symptom from any drug; and two or more reported symptoms from any drug. Problems, or consequences, of drug use are similarly coded. The symptom and problem counts (each with

values of 0, 1, or 2) are summed to yield a symptom/problem scale with values of 0 through 4. Based on their symptom/problem count as well as their frequency of use, respondents are assigned to one of four categories of need for treatment: "clear," "probable," "possible," and "unlikely." For example, "clear" need for treatment is defined as a symptom/problem count of 3 or 4 and a consumption frequency exceeding twice weekly. Refer to the IOM (1990) report for specifications of the other categories of need for treatment; a list of the specific NHSDA questions used to indicate symptoms and problems; and a more detailed description of the IOM model.

The NIDA model, as indicated previously, determines dependence or abuse on a drug-by-drug basis and does not factor in the respondent's frequency or timing of use. In addition, assignment to dependence or abuse for a particular drug is not mutually exclusive (i.e., a respondent can be categorized as both dependent on and abusive of a drug). The NIDA model defines dependence as two or more symptoms and/or problems and abuse as one or more problems. Because the NIDA model closely parallels DSM criteria, the Diagnostic Statistical Manual (American Psychiatric Association, 1987) should be consulted for a more detailed description of the criteria.

The NIDA and IOM models differ in their treatment of nonresponse to particular critical items. The IOM model treats item nonresponse as indicating a negative response, while the NIDA model includes an adjustment for non-response, or missing data. Missing data for some "recency-of-use" or "frequency-of-use" questions were replaced with logically or statistically imputed values, as was data on particular symptoms and problems. The imputation procedure essentially entailed replacing missing data with responses based on the distribution of completed responses. For example, for non-responses on drug-related problems the model made imputations based on the respondent's level of use and on the problems reported by those with similar levels of use. For non-responses on drug use in the past year, the model estimated probable past year use based on respondent's level of use in the past month and in their lifetime. NIDA estimates are presented both without imputations (unadjusted estimates) and with imputations (adjusted estimates). The adjusted estimates have been used and reported by NIDA and DHHS, and are used for purposes of most of this report. The unadjusted estimates are included in appendix C.

Based on the NIDA criteria about 3.5 million people met conservative definitions for drug dependence or abuse of one or more illicit drugs in 1991 and were probably in need of drug abuse treatment (table 1). The two leading drugs were marijuana (2.1 million) and cocaine (1.0 million), with other substances having fewer than 350,000 persons meeting clinical criteria. From the total, 929,000 met both dependence and abuse criteria, 1.7 million only met dependence criteria, and 836,000 only met abuse criteria. This analysis also finds that the number of persons in the household population meeting dependence or abuse criteria (in need of treatment) declined significantly between 1988 and 1991, from 5.1 million to 3.5 million. Discussion of these trends is offered in the following sections.

About one quarter of those meeting clinical criteria for 1991 were not actually using drugs for at least the month prior to the survey (table 2 and exhibit 5). Moreover, out of the 3.5 million about 1.7 million (52%) only met criteria for dependence or abuse of marijuana (table 3 and exhibit 6). Cocaine was the major drug for 56 percent of the 1.8 million individuals who were not "marijuana only" abusers.

**TABLE 1.**  
**Adjusted Estimates of Dependence and Abuse**  
**(in thousands) by Year of Survey (1988, 1990, 1991)**

Abuse and/or Dependence			
	1988	1990	1991
<b>1 or more</b>	5,069	4,306	3,507
<b>Sedatives</b>	209	135	211
<b>Tranquilizers</b>	476	191	232
<b>Stimulants</b>	561	366	344
<b>Analgesics</b>	352	334	191
<b>Marijuana</b>	3,393	2,793	2,145
<b>Inhalants</b>	27	124	117
<b>Cocaine</b>	1,437	1,194	1,018
<b>Hallucinogens</b>	243	139	164
<b>Heroin</b>	150	92	126
<b>Other Opiates</b>	120	93	155

Source: Lewin-VMI analysis of 1988, 1990, and 1991 NIDA National Household Survey on Drug Abuse

N/A Not available

\* Low precision, no estimate reported

**TABLE 2.**  
**Adjusted Estimates of Dependence and Abuse (In thousands)**  
**by Year of Survey (1988, 1990, 1991) and by Last Time Used (Used in the**  
**Past Month and Used in the Past Year But Not in the Past Month)**

Abuse and/or Dependence						
	1988		1990		1991	
	Past Month	Past Year	Past Month	Past Year	Past Month	Past Year
1 or more	3,935	1,154	3,057	1,249	2,622	885
Sedatives	100	109	127	8	142	69
Tranquillizers	222	254	155	36	184	48
Stimulants	505	56	309	57	215	129
Analgesics	281	71	172	162	117	74
Marijuana	2,810	583	2,141	652	1,723	422
Inhalants	22	5	89	35	100	17
Cocaine	1,147	290	813	381	760	258
Hallucinogens	182	61	116	23	114	50
Heroin	137	13	56	36	113	13
Other Opiates	70	50	78	15	120	35

Source: Lewin-VHI analysis of 1988, 1990, 1991 NIDA National Household Survey on Drug Abuse

N/A Not available

\* Low precision, no estimate reported

**TABLE 3.**  
**Adjusted Estimates of Dependence and Abuse (In thousands)**  
**by Year of Survey (1988, 1990, 1991) and by Drug Used**

Abuse and/or Dependence						
	1988		1990		1991	
	Marijuana Only	Marijuana and/or any Other Drug	Marijuana Only	Marijuana and/or any Other Drug	Marijuana Only	Marijuana and/or any Other Drug
1 or more	2,241	2,707	2,138	2,114	1,675	1,802
Sedatives	**	210	**	135	**	211
Tranquillizers	**	477	**	194	**	232
Stimulants	**	561	**	366	**	344
Analgesics	**	360	**	334	**	191
Marijuana	2,241	1,033	2,138	614	1,675	440
Inhalants	**	27	**	124	**	117
Cocaine	**	1,441	**	1,195	**	1,018
Hallucinogens	**	245	**	139	**	164
Heroin	**	154	**	92	**	126
Other Opiates	**	122	**	93	**	155

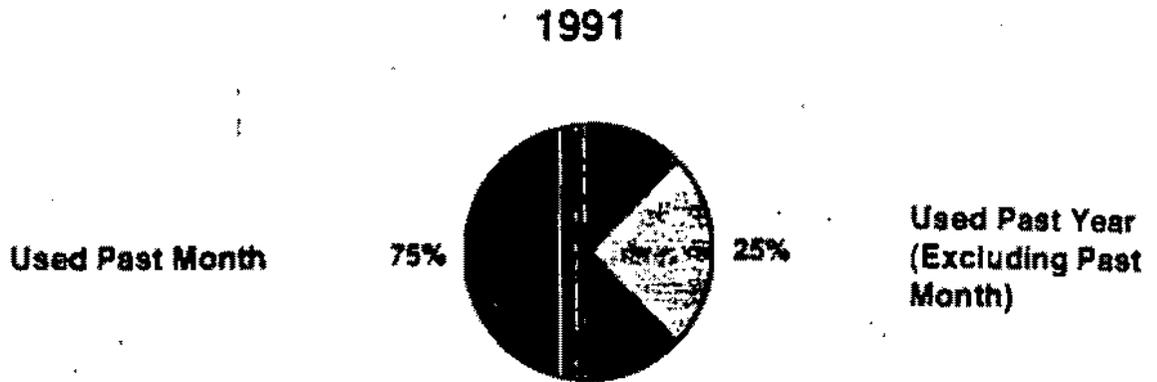
Source: Lewin-VHI analysis of 1988, 1990, 1991 NIDA National Household Survey on Drug Abuse

N/A Not available.

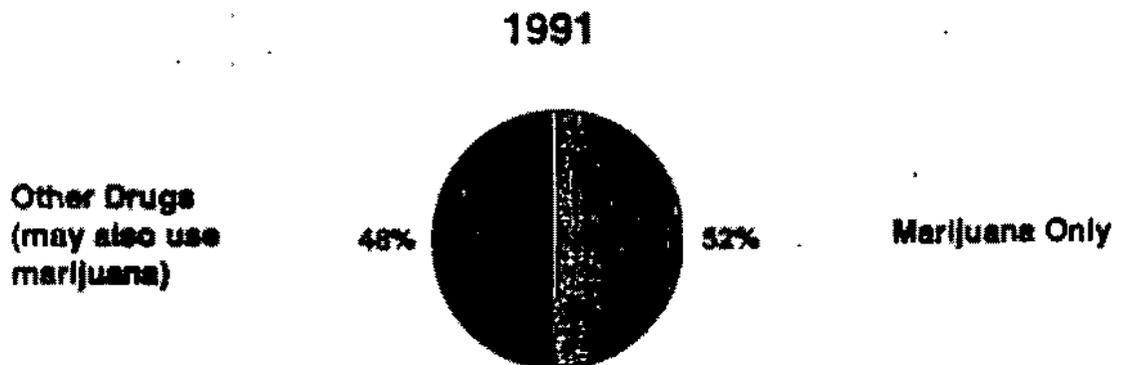
\* Low precision, no estimate reported.

\*\* Analysis excluded those abusing drugs other than marijuana.

**Exhibit 5**  
**Percentages of Those Using in the Past Month or**  
**Using in the Past Year (but not the Past Month)**  
**Among Those in Need of Treatment**



**Exhibit 6**  
**Percentages of Those Using Marijuana or Other**  
**Drugs Among Those in Need of Treatment**



Source: Lewis-VMI analysis of the 1991 NIDA National Household Survey of Drug Abuse

Recency of use, and drugs of choice are important because of their implications for the treatment system. Marijuana dependence and abuse is less associated with abuser involvement with violent and predatory crime, and may imply that a lower level of treatment intensity and supervision is necessary than for other major drugs (e.g., cocaine and heroin).

Second, an appreciable number of drug users appear to stop and start their use. It will be necessary to gain a greater understanding of to what extent external pressures such as employers, family, friends and the criminal justice system influence these starts and stops, and the extent to which individuals access treatment or other forms of assistance in order to stop.

Estimates of need for treatment using the IOM methodology yield somewhat different conclusions than the NIDA methodology (table 4). In 1991 there were an estimated 4.04 million persons with a clear or probable need for treatment (to use the terminology of the IOM report). This is somewhat greater than the estimate of 3.5 million that are drug dependent or abusers according to the NIDA methodology. Moreover, in contrast to the NIDA estimates, it represents only a 13 percent decline in need for treatment from 4.6 million in 1988, versus the 31 percent decline in the NIDA estimates.

### **C. Discussion of Trends**

The NIDA and IOM estimates demonstrate different trends over the 1988-1991 period. The NIDA estimates of dependence and abuse decline 31 percent from 1988 to 1991. In contrast, the IOM estimates of need for treatment decline only 13 percent over the same period of time. While it is not immediately apparent which trend is more valid, some light can be shed on this by examining other indicators of drug use.

In general, NHSDA has shown a steady decline in illicit use of cocaine since 1985, and of most other drugs since 1979. Between 1988 and 1991 there was a decline of 13 percent in current (past month) use, and only a 7 percent decline in past year use. These are very modest changes compared to those produced by the NIDA methodology, and relatively consistent with the trends from the IOM methodology. Furthermore, the findings from NHSDA are not dramatically different from trends in the Drug Abuse Warning Network (DAWN) over the period 1988 to 1991. DAWN emergency room rates reached a plateau lasting one year in mid 1988, followed by about a one year decline in rates in 1989-90, with a resumption of increases among certain segments of the nation, notably central cities, but no significant trends in suburban and nonurban areas.

The newer trend survey, the Drug Use Forecasting (DUF) system, does not offer sufficient data or rigor to reach strong conclusions about trends in drug use. However, one can reasonably conclude that DUF does not support the contention that use by arrestees (believed to be a major proportion of those in need of treatment) has declined significantly.

The analysis reported in the next section does indicate that NHSDA does a poor job of covering the population believed to be at highest risk for significant drug problems--those that are criminally active. The evidence in the following section supports the hypothesis that NHSDA primarily reflects behaviors of the mainstream population, and should not be taken as an accurate indicator of behaviors in marginalized populations such as those that are criminally active, under supervision of the criminal justice system, and that are most heavily involved with illicit drug use.

**TABLE 4.**  
**Estimates of the Need for Treatment**  
**by Current Drug Users (In thousands)**

Need for Treatment	1988	1990	1991
Unlikely	7,307	5,998	6,358
Possible	2,539	2,514	2,246
Probable	3,125	2,650	2,682
Clear	1,506	1,786	1,360
<b>Sum of Clear and Probabl</b>	4,631	4,436	4,042

Source: Lewin-VHI analysis of 1988, 1990, 1991 NIDA National Household Survey on Drug Abuse

#### D. Comparison of the NIDA and IOM Results

Some comparison of the NIDA and IOM methodologies is warranted. While it must be acknowledged that the NIDA approach adheres to DSM and ICD criteria more closely than does the IOM approach, the IOM approach has a conceptual advantage in dealing with poly-drug abuse. Specifically, while the NIDA criteria perform a "drug-by-drug" analysis of dependence and abuse criteria, allowing a clinical determination to identify and focus on a particular substance, the IOM approach is more likely to identify individuals with poly-drug problems. The NIDA approach can only make a diagnostic determination when an individual is capable of attributing a number of symptoms and consequences specifically to a particular drug. If the individual uses multiple substances, as well as has an alcohol problem, they may well subscribe to as many symptoms and consequences overall, but because they are attributed to several different substances the individual may not meet the threshold for dependence or abuse of a particular substance, although they are experiencing significant problems from the totality of their substance abuse.

Analysis reveals that the NIDA and IOM measures capture somewhat different phenomena. To examine the similarities and differences, we compare how individuals are respectively classified by the two systems. Under a close correspondence of the two approaches it would be expected that those found to need treatment under one system would also be classified as needing treatment under the other system. This comparison is presented in table 5. Across the three years studied, only about 50 percent of those diagnosed with dependence and/or abuse under the NIDA criteria are classified by the IOM criteria as in clear or probable need of treatment. In converse, only about 43 percent of those the IOM classified as in clear or probable need of treatment meet the NIDA dependence or abuse criteria.

There are two distinct differences in the two systems that account for the relatively low level of correspondence between the two classifications. First, as noted above, the IOM system is highly sensitive to poly-drug abuse, recognizing that experiencing symptoms (even infrequent) from several different drugs may be as indicative of a need for treatment as experiencing several symptoms from a single drug. The NIDA system completely ignores this dimension of poly-drug abuse.

Second, the NIDA system includes non-current drug users in its estimates, which the IOM approach excludes. Non-current users (who have not used in the past month) make up over 25 percent of the NIDA estimates, while they are excluded from the IOM estimates (exhibit 5). The NIDA system is internally consistent in that it develops twelve month period prevalence measures, examining both use and symptoms and consequences in the past twelve month period. However, the IOM system, while focusing on past month users, examines symptoms and consequences from the prior 12 months. The IOM measure is thus a hybrid of a one month period prevalence measure (use in the past month) and a twelve month period prevalence measure (symptoms and consequences experienced over this time).

Ultimately, each of the measurement systems has particular advantages and disadvantages. The NIDA system is more internally consistent in use of time periods, however, it does not appear to account for poly-drug use. The IOM system is very sensitive to poly-drug use, but only examines current (past month) users, and does not provide a count of users that have stopped within the past year.

**TABLE 5.**  
**Correspondence of IOM with DHHS Estimates of**  
**the Need for Drug Abuse Treatment (In thousands)**

1991 DHHS Need for Treatment	IOM Need for Treatment				
	Clear	Probable	Possible	None	Total
Abuse and Dependence	328	140	57	347	872
Dependence Only	308	516	193	631	1,648
Abuse Only	262	178	94	252	787
Abuse and/or Dependence	899	834	344	1,231	3,307
None	461	1,849	1,902		
<b>Total</b>	<b>1,360</b>	<b>2,683</b>	<b>2,246</b>		

Source: Lewin-VHI analysis of the 1991 NIDA Household Survey on Drug Abuse

## **E. Summary of the Household Population Estimates**

It would appear precipitous to conclude that the need for treatment declined by 31 percent among the household population between 1988 and 1991. While this is the estimate produced from the NIDA model applying the DSM clinical criteria, it is not consistent with other measures. The IOM system estimates only a 13 percent decline in clear or probable need for treatment over this time period. This is consistent with the overall trend in drug use prevalence from NHSDA indicating a 13 percent decline in current use and a 7 percent decline in past year use of any illicit drug.

Both the NIDA and IOM systems have strengths and weaknesses. The NIDA estimates are more internally consistent in use time periods (all measures reference past year), but it does not account for poly-drug use. The IOM system focuses on current (past month) users that have experienced symptoms or consequences within the past month, and is highly sensitive to poly-drug use. It is not obvious why the NIDA methodology would indicate an excessive reduction in the need for treatment (dependence and abuse) between 1988 and 1991, unless poly-drug use were becoming relatively more prevalent and single drug use relatively less prevalent over this time period. Final estimates are presented using both methodologies.

## **V. The Need for Treatment in the Criminal Justice Population**

Studies of arrestees and of incarcerated populations have found much higher rates of drug use than surveys reveal for the general population. There has been disagreement over how studies of drug users should deal with the criminally active population. On the one hand, several studies (Institute of Medicine, 1990; Office of National Drug Control Policy, 1991) have estimated drug use by this population independently of household survey results, and have added the estimates together, with only a modest adjustment for overlapping coverage. However, NIDA maintains that NHSDA successfully covers this population (in theory), and has chosen to omit any addition to household population estimates.

This study, based on special analyses of NHSDA and criminal justice system data, concludes that NHSDA does cover about half of the population under probation or parole supervision, and that these individuals have a significant rate of need for drug treatment. Unanswered is the question of the nature or extent of drug problems among the other 50 percent of those being supervised in the community. In developing estimates, first we present data on the number of persons supervised by the criminal justice system, and then examine data on the potential need for treatment by this population:

The criminal justice system supervises over 4.4 million persons on a given day (U.S. Department of Justice, 1992). In a given year another 1.8 million persons are released from supervision, for a total of over 6.2 million persons supervised for some part of the year (not adjusting for recidivism among the 1.8 million that are released). On a given day in 1991 there were 1.2 million adults and juveniles incarcerated in jails or prisons serving sentences or awaiting arraignment (U.S. Department of Justice, 1992). Another 3.2 million were on probation or parole. There were almost 1.8 million releases from probation and parole, and 55,000 unconditional releases from prison (i.e., they were not put into probation or parole).

## **A. The Probation and Parole Population:**

In theory household surveys cover the probation and parole populations (or the criminal justice system, CJS, supervision population). Criminal justice authorities require that all individuals on probation and parole have a residence on record. Hence, the rigorous nationally representative design of NHSDA should capture this population, to the extent that they participate in the survey when requested to do so.

Analysis of the 1991 NHSDA indicates that at best it captures 51 percent of the population that has been on probation or parole during the year before the survey. The 1991 NHSDA asked respondents (confidentially) whether they were or had been on probation or parole in the past 12 months. Tabulations of NHSDA reveal that respondents representing 2.53 million individuals answered in the affirmative to these questions. Based on Department of Justice (DOJ) data there were about 5.0 million persons on probation or parole during 1991.

Among the estimated 2.5 million reporting CJS supervision, 369,000 (approximately 15 percent) met the NIDA criteria for needing treatment. Current (past month) drug use was reported by 869,000, or 34.2 percent of this population, while 446,000 (17.6 percent) acknowledged illicit drug use in the past year, but not in the past month, and 746,000 (29.4 percent) indicated that they had used illicit drugs in the past, but had not used them in the past 12 months. All together 2.06 million (81.2 percent) of those reported to have been on probation or parole had a history of current or past illicit use of drugs. Table 6 provides a breakdown of drug abuse among the criminal justice population.

It is clearly justified to adjust estimates of need for treatment to account for those on probation or parole that are not covered by NHSDA. The conservative approach is to assume that the 2.5 million not covered by NHSDA estimates behave similar to the covered population (i.e., that 14 percent require treatment). While this approach is taken for purposes of these calculations, it should be emphasized that it is reasonable to assume that the under represented population may have even more severe problems with current drug use, and a greater need for treatment.

These findings have fairly significant implications for public policy. First, it is clear that despite the supervision (of often minimal nature, and often without drug testing) provided by probation or parole, over a third of this population is currently using drugs. Also, it appears that almost 15 percent of this population has a current need for treatment.

Finally, NHSDA has only succeeded in representing 50 percent of a very well defined population of major policy import. This is despite the over sampling of major urban areas in recent NHSDA surveys (where this population is believed to be over represented), and the statistical adjustments to attempt to compensate for refusal by individuals to participate in the survey. In some respects it is remarkable that the survey covered this much of the probation/parole population, and perhaps even more remarkable that they acknowledged any current drug use, much less as much as was disclosed. However, the remaining fifty percent of this population can be reasonably hypothesized to be at even higher risk of using illicit drugs than those represented in the survey.

**TABLE 6.**  
**The Probation/Parole Population in the NHSDA:**  
**Drug Use and Need for Treatment**

	Ever Used	Past Year	Past Month	Need Treatment
<b>1 or more</b>	81.2%	51.8%	34.2%	14.5%
<b>Sedatives</b>	17.0%	7.9%	5.0%	1.6%
<b>Tranquillizers</b>	22.3%	8.6%	4.8%	0.4%
<b>Stimulants</b>	25.1%	8.4%	1.4%	1.7%
<b>Analgesics</b>	21.8%	13.4%	5.1%	1.7%
<b>Marijuana</b>	78.3%	44.3%	28.1%	8.7%
<b>Inhalants</b>	20.5%	10.3%	3.9%	2.6%
<b>Cocaine</b>	45.0%	22.5%	8.3%	6.7%
<b>Hallucinogens</b>	32.7%	13.4%	4.3%	1.8%
<b>Heroin</b>	10.3%	4.8%	1.2%	2.9%

Source: Lewin-VHI analysis of the 1991 NIDA National Household Survey on Drug Abuse

## **B. Incarcerated Populations:**

There were almost 1.1 million adults and juveniles serving sentences in jails or prisons in 1991 and nearly another 200,000 awaiting arraignment. Drug abuse among those in the criminal justice system has been shown to be a serious problem. Many have long histories of drug abuse or dependence and are likely to be in need of treatment. However, there have been few studies applying clinical criteria to this population. In a confidential 1986 survey of state prison inmates it was found that 43 percent had been using drugs daily at the time they committed the crime for which they were incarcerated (Innes, 1988). It is likely that virtually all of these individuals would meet the criteria for dependence or abuse, and would be judged as in need of treatment, or run significant risk of relapse to drug use and crime upon release from incarceration.

The U.S Department of Justice (1991a) reported that 24 percent (94,753) of all convicted jail inmates in 1989 had previously participated in a substance abuse treatment program and almost 5 percent (19,346) were in a program in the month before their current jail admission. Furthermore, in 1989 nearly 30 percent of convicted jail inmates had used drugs daily in the month before their offense (U.S. Department of Justice, 1991b), again indicating a probable need for treatment.

In addition, there were over 200,000 persons in jails awaiting arraignment, trial, or sentencing. While most of these individuals would theoretically fall into a household survey sampling frame (since the jail is not yet their official domicile), it is unlikely that this population would be represented in the survey. It is assumed that 30 percent of this population is in need of treatment (the same as for those in jails serving sentences).

## **C. Summary on Criminal Justice Populations:**

Altogether it is estimated that in 1991 there were 1.15 million persons in need of treatment under supervision by the criminal justice system, 723,000 in probation or parole, and 424,000 in prison or jail. Estimates are also made for 1988 and 1990 and presented in table 7, using data on the size of the correctional populations for those years, but the same estimates of the rate of need for treatment. Given the resistance of many drug users to enter treatment voluntarily, the criminal justice system offers a mechanism through which society can influence these individuals to act in a manner that would be both beneficial to themselves and to society. There has been no complete or rigorous study of the extent to which the criminal justice system acts to either make treatment available voluntarily, or to coerce drugs users to enter treatment. However it is known that these practices vary widely across jurisdictions.

**TABLE 7.**  
**Estimate of the Need for Drug Abuse Treatment Using the**  
**Institute of Medicine Methodology: Numbers in Need of**  
**Drug Abuse Treatment**

	1988	1990	1991
<b>NHSDA General Household Population(1)</b>	4,633,000	4,436,000	4,043,000
- - General Population	4,316,000	4,091,000	3,674,000
- - Probation and Parole Population	317,000	345,000	369,000
- - Homeless Population Using Shelters	N/A	N/A	44,000
<b>Remaining Parole and Probation Population(2)</b>	305,000 *	331,000 *	354,000
<b>Incarcerated Population(3)</b>	319,000	380,000	424,000
<b>Remaining Homeless Population</b>	110,000	110,000	66,000
<b>Total:</b>	5,367,000	5,257,000	4,887,000

1 Lewin-VHI analysis of 1988, 1990, and 1991 NIDA National Household Survey on Drug Abuse.

2 Lewin-VHI analysis of U.S. Department of Justice statistics, 1991.

3 Includes juveniles.

\* Total of those covered and not covered by the 1991 NHSDA.

**TABLE 8.**  
**Estimate of the Need for Drug Abuse Treatment Using the**  
**NIDA Methodology: Numbers in Need of Drug Abuse Treatment**

	1988	1990	1991
<b>NHSDA General Household Population(1)</b>	5,089,000	4,306,000	3,507,000
- - General Population	5,089,000	4,306,000	3,507,000
- - Probation and Parole Population	317,000	345,000	369,000
- - Homeless Population Using Shelters	N/A	N/A	44,000
<b>Remaining Parole and Probation Population(2)</b>	305,000 *	331,000 *	354,000
<b>Incarcerated Population(3)</b>	319,000	380,000	424,000
<b>Remaining Homeless Population</b>	110,000	110,000	66,000
<b>Total:</b>	5,823,000	5,127,000	4,351,000

1 Lewin-VHI analysis of 1988, 1990, and 1991 NIDA National Household Survey on Drug Abuse.

2 Lewin-VHI analysis of U.S. Department of Justice statistics, 1991.

3 Includes juveniles.

\* Total of those covered and not covered by the 1991 NHSDA.

## VI. The Need for Drug Treatment in the Homeless Population

While estimates of the numbers of homeless vary considerably (from about 200,000 to 2 million), they nonetheless indicate a sizable population and one which has a high rate of drug abuse. Both the IOM study and the subsequent analyses by DHHS concluded that household survey estimates need to be supplemented to account for the inability of household surveys to study this population.

A 1987 national survey performed by the Urban Institute and the Research Triangle Institute (RTI) estimated that there were between 496,000 and 600,000 homeless in March 1987, giving a rate of homelessness of 21 to 24.9 per 10,000 people (Burt and Cohen, 1989). Moreover, they estimated that more than one million persons in the U.S. were homeless at some time during 1987. The National Alliance to End Homelessness estimated that on any given night in 1988 there were 735,000 homeless nationwide and that during the course of 1988 a range of 1.3 to 2 million people were homeless for one or more nights (Alliance Housing Council, 1988). More recently, the 1990 Census Bureau enumeration of the homeless population counted over 228,000 homeless in emergency shelters and pre-identified street locations in one day in 1990 (the Bureau states that this was not a count of the total homeless population). Smaller studies of individual cities or regions have also shown a range in the rate of homelessness. A 1986 study in Boston (City of Boston, 1986) found that 49.9 persons per 10,000 population were homeless while a 1985 study in sixteen rural counties in Ohio found a rate of 2.4 per 10,000 for homelessness (Roth et al., 1985).

In 1991 for the first time NHSDA covered part of the homeless population, since the survey sampled the homeless population living in shelters (National Institute on Drug Abuse, 1992). However, this is still a major under representation of the total homeless population. Only an estimated 40 percent of the adult homeless population uses shelters (Burt and Cohen, 1989). Moreover, there is evidence that the homeless population not using such services may have more severe drug abuse problems (Burt and Cohen, 1989).

The prevalence of drug abuse among the homeless is significant. The Urban Institute/RTI study reported that 33 percent of homeless respondents (1,704) had at some time been patients in a detoxification or alcohol/drug abuse treatment center (Burt and Cohen, 1989). The U.S. Department of Housing and Urban Development reported that 25 percent of homeless individuals have drug problems (Department of Housing and Urban Development, 1989). Smaller scale studies conducted in cities have reported ranges of drug problems among the homeless population from 10.1 percent in Los Angeles (Farr et al., 1986) to 33.5 percent in Boston (Mulkern and Spence, 1984).

For this study we adopt the mid-range estimate from the Urban Institute/RTI study (i.e., 550,000 homeless people [in shelters or "on the street"] on a given night). Applying the mid-range for the prevalence of drug abuse among them homeless (20 percent) to 550,000, we estimate that approximately 110,000 homeless are in need of drug abuse treatment. Recognizing that the 1991 NHSDA added shelters for the homeless to the survey, and using the estimate that perhaps 40 percent of the homeless use shelters (which may be an over estimate for use on a single night) the estimate is adjusted down by 40 percent to account for inclusion in NHSDA surveys. In 1991 the 110,000 homeless in need of treatment are estimated to include 44,000 covered by NHSDA, and 66,000 not covered by NHSDA. Before

1991 homeless shelters were not surveyed by NHSDA. Due to lack of trend data this same estimate is used for all three years.

## VII. Conclusions

It is estimated that from 4.35 to 4.9 million persons needed drug treatment in 1991. Selection of the IOM methodology results in the higher figure, while the NIDA methodology results in the lower estimate. There is good reason to believe that these estimates may be conservative, because this study has demonstrated that NHSDA achieves only partial coverage of high risk populations such as those under criminal justice supervision.

Using the IOM methodology, an estimated total of 4.9 million persons need treatment in 1991 (table 7). This includes 4.0 million persons covered by NHSDA in addition to: a) 354,000 persons on probation or parole not covered by NHSDA; b) 424,000 persons serving sentences in prison or jail; c) and 66,000 homeless persons that were not in shelters. By contrast, the NIDA methodology provided an estimate of 4.35 million persons in need of treatment in 1991, 3.5 million of which are covered by NHSDA and the remaining representing populations not covered by NHSDA (table 8).

The IOM estimates suggest that the need for treatment declined modestly, 9 percent, or about 3 percent annually, from 1988 to 1991. The estimates from NHSDA declined for the household population by 13 percent over this period, however there was a strong increase in the need for treatment due to growth in the criminal justice-supervised population. In strong contrast, the NIDA methodology suggests that need for treatment in the household population declined by 31 percent over three years. This seems inconsistent with the more modest trends in current and annual drug use estimated by NHSDA, DAWN and DUF. It would seem that the IOM estimates are more consistent with what was observed in this period of time. It is unclear what could account for these strong trends.

The estimates of treatment need from NHSDA should be considered to be conservative. The survey omits questions that should be asked in order to make an adequate clinical assessment of whether a survey respondent needs treatment. While it is most likely that those indicated to need treatment based on the current question sequences of NHSDA do need treatment, it is very possible that some current users found to not meet the criteria actually do need treatment. The extent of this bias can not be quantified at this time, however the new National Longitudinal Alcohol Epidemiologic Survey (which should be available for analysis late in 1993) will both allow development of accurate treatment need estimates as well as potentially quantify the bias in the estimates from NHSDA.

The findings of this study that NHSDA does successfully cover about 50 percent of the population on probation and parole lends credence to the value of this survey at developing estimates of need for treatment. However, it makes explicit for the first time evidence that NHSDA does a poor job of covering very important high risk populations. Because the questions on probation and parole were only first added to the 1991 survey it is not possible to examine trends in coverage of this population over time in order to determine if this has changed in a manner that might partially explain the discordance between the various surveys.

There have been no new findings about either the size of the homeless population, or the prevalence of their need for drug treatment. There remains a need to reexamine the dimensions of homelessness, with particular emphasis on the population (estimated to total about 1 million) that experience homelessness during the course of the year but may not be homeless on a given night. These individuals may often fall outside of the NHSDA sampling frame if they are in temporary living situations (e.g., staying with family or friends) for some significant part of the year.

Finally, it must be reemphasized that an estimate of the population in need of treatment does not constitute the level of services that a system "should" deliver in a given year. The resistance of many drug users to treatment means that only some fraction would actually seek services in a given year. This value (those seeking or accepting treatment) can be significantly influenced by institutions including the criminal justice system, employers and the general health system, but these policies remain to be further evolved and implemented in the future.

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**Appendix A**

**Descriptions of Four General Population Surveys on Drug Abuse**

## Descriptions of Four General Population Surveys on Drug Abuse

In addition to NHSDA, there are four other major surveys of drug abuse in the United States:

- Monitoring the Future
- Epidemiologic Catchment Area
- National Health Interview Survey
- National Longitudinal Alcohol Epidemiologic Survey

Monitoring the Future is a nationally representative survey of American secondary school students and young adults between the ages of 19 and 33. The survey sample is biased in its omission of secondary students that have unexcused absences or that drop out of school. The latter group of students is particularly important as it is likely to have higher rates of drug use than the general secondary student population. Survey researchers estimate that 15 to 20 percent of each age cohort drops out of high school, a percentage, they claim, will make drug use estimates of young adults somewhat low for the age group as a whole (Johnston et. al., 1992).

The Epidemiologic Catchment Area (ECA) is a series of surveys on mental health disorders and includes a section on drug abuse. Using DSM criteria as written into the Diagnostic Interview Survey (DIS), ECA surveys were conducted between 1980 and 1984 in five U.S. communities including: New Haven, Connecticut; Baltimore, Maryland; Durham, North Carolina; St. Louis, Missouri; and Los Angeles, California. ECA has several problems. First, it provides only community-level estimates and is, therefore, not nationally representative. Second, it was conducted prior to the crack cocaine explosion and is thus outdated. Third, the population covered does not necessarily include those having high rates of drug abuse. Finally, there are no plans for future surveys of this same panel of respondents, thus limiting the ability to look at trends in drug use. Because DSM-III criteria were applied to the survey instrument, ECA data do contain the information required to determine need for drug abuse treatment.

The National Health Interview Survey (NHIS) is a nationally representative household survey of non institutionalized persons. In 1991, NHIS included an additional battery of questions examining drug use among household members ages 18-44. Because it is a household survey, NHIS has poor representation of several critical drug abusing populations including the homeless and those in the criminal justice population. Another problem with the NHIS drug use supplement is that it only asked questions about the use of marijuana and cocaine. Furthermore, because the questions were based on the 1988 National Household Survey on Drug Abuse, they do not contain all of the criteria required to estimate the need for drug abuse treatment.

The 1991 National Longitudinal Alcohol Epidemiologic Survey (NLAES) is a nationally representative study of alcohol and drug use among the non institutionalized population ages 18 and older. A household survey, NLAES provides measures of drug use disorders according to DSM and ICD classification systems. Hence, while it is limited in its coverage of critical drug-abusing populations, it does appropriately measure dependence and abuse. Another potential strength of NLAES is its intent to collect longitudinal data, although these plans may be canceled due to the transfer of the NLAES from NIAAA to SAMHSA. Findings from NLAES are not currently available, as the data is still being cleaned and refined, however analyses of the data are expected to begin in Fall, 1993.

In summary, three of these surveys are limited in fully measuring the extent of drug abuse in the United States. The fourth will soon be available for analysis and should yield important results in the near term, although it will have the same limitations in terms of population coverage as the other surveys. Covering special and non-overlapping populations and failing to adequately apply diagnostic criteria to their questions, these surveys illustrate the difficulty in determining the need for drug abuse treatment.

While both criteria attempt to implement clinical criteria for determining need for treatment, the NIDA method is more consistent with established clinical criteria, however the IOM method is very sensitive to poly-drug use, which NIDA seems to underestimate. Both of these are probably conservative estimates, however, because the National Household Survey on Drug Abuse (NHSDA), the primary source of these estimates, has significant limitations in covering high risk populations.

**Appendix B**

**National Household Survey on Drug Abuse Questions Corresponding  
with ICD and DSM Diagnostic Criteria for Dependence and Abuse/Harmful Use**

## Appendix B

### National Household Survey of Drug Abuse Questions Corresponding with ICD and DSM Diagnostic Criteria for Dependence and Abuse/Harmful Use

#### National Household Survey of Drug Abuse Questions

Corresponding with Dependence Criteria	Corresponding with Abuse/Harmful Use Criteria
<ol style="list-style-type: none"> <li>1) During the past twelve months, for which drugs have you consciously tried to cut down on your use.</li> <li>2) During the past twelve months, for which drugs have you been unable to cut down on your use, even though you tried?</li> <li>3) For which drugs have you had withdrawal symptoms; that is, you felt sick because you stopped or cut down on your use of them during the past twelve months?</li> <li>4) During the past twelve months, for which drugs have you needed larger amounts to get the same effect; that is, for which drugs could you no longer get high on the same amount you used to use?</li> <li>5) As a result of drug use at any time in your life, did you, in the past 12 months . . .               <ol style="list-style-type: none"> <li>a) Become depressed or lose interest in things?</li> <li>b) Have arguments and fights with family or friends?</li> <li>c) Feel completely alone or isolated?</li> <li>d) Feel very nervous and anxious?</li> <li>e) Have health problems?</li> <li>f) Find it difficult to think clearly?</li> <li>g) Feel irritable and upset?</li> <li>h) Feel suspicious and distrustful of people?</li> <li>i) Find it harder to handle your problems?</li> <li>j) Have to get emergency medical help?</li> </ol> </li> <li>6) As a result of drug use at any time in your life, did you, in the past 12 months . . .               <ol style="list-style-type: none"> <li>a) Get less work done than usual at school or on the job?</li> <li>b) Drive unsafely?</li> </ol> </li> <li>7) During the past 12 months, have you driven any kind of vehicle while you were under the influence of alcohol or illegal drugs?</li> </ol>	<ol style="list-style-type: none"> <li>1) During the past twelve months, have you driven any kind of vehicle while you were under the influence of alcohol or illegal drugs?</li> <li>2) As a result of drug use at any time in your life, did you, in the past 12 months . . .               <ol style="list-style-type: none"> <li>a) Become depressed or lose interest in things?</li> <li>b) Have arguments and fights with family or friends?</li> <li>c) Feel completely alone or isolated?</li> <li>d) Feel very nervous and anxious?</li> <li>e) Have health problems?</li> <li>f) Find it difficult to think clearly?</li> <li>g) Feel irritable and upset?</li> <li>h) Get less work done than usual at school or on the job?</li> <li>i) Feel suspicious and distrustful of people?</li> <li>j) Find it harder to handle your problems?</li> <li>k) Have to get emergency medical help?</li> <li>l) Drive unsafely?</li> </ol> </li> <li>3) During the past 12 months, have you sold any illicit drugs?</li> <li>4) In the past 12 months, for what offenses were you arrested or booked?               <ol style="list-style-type: none"> <li>a) Driving under the influence?</li> <li>b) Drunkenness or other liquor law violation?</li> <li>c) Possession or sale of drugs?</li> </ol> </li> </ol>

**Appendix C**

**Tables on the Adjusted and Unadjusted Estimates  
of the Need for Treatment (1986, 1991, and 1990)**

**Adjusted Estimates of Dependence and Abuse**  
(in thousands) by Year of Survey (1988, 1990, 1991)

Abuse and/or Dependence			
	1988	1990	1991
1 or more	3,289	4,306	3,507
Sedatives	209	135	211
Tranquilizers	476	191	232
Stimulants	561	366	348
Anesthetics	352	334	191
Marijuana	3,393	2,793	2,145
Inhalants	27	124	117
Cocaine	1,437	1,194	1,018
Hallucinogens	243	139	164
Heroin	150	92	126
Other Opiates	120	93	155

Abuse and Dependence			
	1988	1990	1991
1 or more	1,569	939	929
Sedatives	24	55	*
Tranquilizers	56	46	52
Stimulants	151	78	147
Anesthetics	*	51	14
Marijuana	1,021	368	362
Inhalants	1	16	1
Cocaine	441	330	290
Hallucinogens	64	*	28
Heroin	74	38	29
Other Opiates	N/A	N/A	N/A

Dependence Only			
	1988	1990	1991
1 or more	2,766	2,676	1,742
Sedatives	177	72	166
Tranquilizers	402	101	176
Stimulants	372	271	147
Anesthetics	329	283	149
Marijuana	1,819	1,815	1,179
Inhalants	26	96	112
Cocaine	717	679	517
Hallucinogens	133	127	86
Heroin	75	54	98
Other Opiates	120	93	155

Abuse Only			
	1988	1990	1991
1 or more	754	690	636
Sedatives	8	8	46
Tranquilizers	18	44	4
Stimulants	39	17	30
Anesthetics	23	*	29
Marijuana	554	503	608
Inhalants	*	13	4
Cocaine	279	165	211
Hallucinogens	47	12	30
Heroin	*	*	4
Other Opiates	N/A	N/A	N/A

Source: LEAD/NIH analysis of 1988, 1990, and 1991 NIDA National

Household Survey on Drug Abuse

N/A: Not available

\*: Low precision; no estimate reported

Adjusted Estimates of Dependence and Abuse (in thousands)  
by Year of Survey (1988, 1990, 1991) and by Last Time Used (Used in the  
Past Month and Used in the Past Year But Not in the Past Month)

Abuse and/or Dependence						
	1988		1990		1991	
	Past Month	Past Year	Past Month	Past Year	Past Month	Past Year
1 or more	1,735	54	1,267	249	2,222	345
Sedatives	132	129	27	3	142	5
Tranquilizers	232	254	58	36	134	48
Stimulants	525	56	309	57	215	129
Anesthetics	281	71	72	162	77	74
Marijuana	2,910	583	2,141	552	1,723	422
Inhalants	22	5	99	15	105	7
Cocaine	1,147	290	813	181	730	258
Hallucinogens	82	61	116	23	114	50
Heroin	137	13	55	36	113	13
Other Opiates	70	50	78	15	120	35

Abuse and Dependence						
	1988		1990		1991	
	Past Month	Past Year	Past Month	Past Year	Past Month	Past Year
1 or more	1,335	234	752	187	640	286
Sedatives	24	0	58	0	0	0
Tranquilizers	56	0	46	0	52	0
Stimulants	147	4	58	10	85	52
Anesthetics	0	0	51	0	7	7
Marijuana	649	172	323	68	231	111
Inhalants	1	0	16	0	1	0
Cocaine	299	142	228	102	189	101
Hallucinogens	53	11	0	0	28	0
Heroin	53	11	2	36	22	7
Other Opiates	N/A	N/A	N/A	N/A	N/A	N/A

Dependence Only						
	1988		1990		1991	
	Past Month	Past Year	Past Month	Past Year	Past Month	Past Year
1 or more	1,966	780	1,867	809	1,328	414
Sedatives	70	107	72	0	107	58
Tranquilizers	150	252	65	36	127	49
Stimulants	320	52	224	47	90	57
Anesthetics	276	51	122	161	101	48
Marijuana	1,539	280	1,422	413	946	231
Inhalants	21	5	80	36	98	14
Cocaine	611	106	499	180	417	100
Hallucinogens	133	0	117	10	59	27
Heroin	75	0	54	0	92	2
Other Opiates	70	50	78	15	120	35

Abuse Only						
	1988		1990		1991	
	Past Month	Past Year	Past Month	Past Year	Past Month	Past Year
1 or more	612	142	435	256	661	165
Sedatives	8	0	0	8	36	11
Tranquilizers	18	0	44	0	4	0
Stimulants	39	0	17	0	41	9
Anesthetics	0	23	0	0	9	20
Marijuana	423	131	415	175	524	80
Inhalants	0	0	13	0	1	3
Cocaine	226	44	86	99	153	58
Hallucinogens	2	45	3	9	27	23
Heroin	0	0	0	0	0	4
Other Opiates	N/A	N/A	N/A	N/A	N/A	N/A

Source: Laboratory analysis of 1988, 1990, 1991; N/A: National Household Survey on Drug Abuse

N/A: Not available

Low precision, no asterisks required

Adjusted Estimates of Dependence and Abuse (in thousands)  
by Year of Survey (1988, 1990, 1991) and by Drug Used

Abuse and/or Dependence						
	1988		1990		1991	
	Marjuana	Marjuana and/or any Other Drug	Marjuana	Marjuana and/or any Other Drug	Marjuana	Marjuana and/or any Other Drug
	Only		Only		Only	
1 or more	2,241	2,727	2,118	2,774	2,275	3,021
Sedatives	**	270	**	255	**	211
Tranquilizers	**	477	**	464	**	522
Stimulants	**	561	**	558	**	588
Anesthetics	**	320	**	314	**	321
Marjuana	2,241	2,535	2,118	2,574	2,275	3,002
Inhalants	**	27	**	24	**	22
Cocaine	**	441	**	473	**	513
Hallucinogens	**	145	**	139	**	154
Narcotics	**	134	**	73	**	123
Other Opiates	**	122	**	93	**	138

Abuse and Dependence						
	1988		1990		1991	
	Marjuana	Marjuana and/or any Other Drug	Marjuana	Marjuana and/or any Other Drug	Marjuana	Marjuana and/or any Other Drug
	Only		Only		Only	
1 or more	586	763	533	638	529	668
Sedatives	**	24	**	25	**	*
Tranquilizers	**	56	**	46	**	52
Stimulants	**	151	**	78	**	147
Anesthetics	**	*	**	51	**	14
Marjuana	586	406	533	61	528	408
Inhalants	**	1	**	16	**	1
Cocaine	**	402	**	330	**	290
Hallucinogens	**	64	**	*	**	28
Narcotics	**	73	**	38	**	29
Other Opiates	N/A	N/A	N/A	N/A	N/A	N/A

Dependence Only						
	1988		1990		1991	
	Marjuana	Marjuana and/or any Other Drug	Marjuana	Marjuana and/or any Other Drug	Marjuana	Marjuana and/or any Other Drug
	Only		Only		Only	
1 or more	1,281	1,438	1,200	1,301	915	1,020
Sedatives	**	178	**	72	**	105
Tranquilizers	**	403	**	101	**	176
Stimulants	**	373	**	271	**	147
Anesthetics	**	338	**	263	**	140
Marjuana	1,281	538	1,200	408	920	263
Inhalants	**	26	**	96	**	112
Cocaine	**	718	**	678	**	517
Hallucinogens	**	132	**	127	**	86
Narcotics	**	79	**	54	**	64
Other Opiates	**	122	**	80	**	138

Abuse Only						
	1988		1990		1991	
	Marjuana	Marjuana and/or any Other Drug	Marjuana	Marjuana and/or any Other Drug	Marjuana	Marjuana and/or any Other Drug
	Only		Only		Only	
1 or more	304	285	458	217	301	308
Sedatives	**	8	**	8	**	46
Tranquilizers	**	12	**	47	**	4
Stimulants	**	38	**	17	**	30
Anesthetics	**	24	**	*	**	29
Marjuana	304	80	458	127	301	73
Inhalants	**	*	**	12	**	4
Cocaine	**	232	**	186	**	211
Hallucinogens	**	49	**	12	**	30
Narcotics	**	*	**	*	**	4
Other Opiates	N/A	N/A	N/A	N/A	N/A	N/A

Source: LEADERSHIP STUDIES OF 1988, 1990, 1991 NCA MONITORING RESEARCH SURVEY ON DRUG ABUSE

\*A Not available.

\* Low numbers, no further reported.

\*\* Figures excluded from drug group due to problems.

**Unadjusted Estimates of Dependence and Abuse  
(in thousands) by Year of Survey (1988, 1990, 1991)**

Abuse and/or Dependence			
	1988	1990	1991
1 or more	4,144	3,833	3,307
Sedatives	178	123	175
Tranquilizers	164	185	207
Stimulants	417	309	316
Analgesics	269	291	154
Marijuana	3,031	2,570	2,024
Inhalants	26	114	92
Cocaine	1,216	1,020	957
Hallucinogens	164	132	147
Heroin	131	92	101
Other Opiates	114	93	142

Abuse and Dependence			
	1988	1990	1991
1 or more	1,335	837	672
Sedatives	21	55	*
Tranquilizers	21	46	51
Stimulants	128	69	136
Analgesics	*	49	10
Marijuana	917	360	350
Inhalants	1	14	1
Cocaine	357	278	268
Hallucinogens	54	*	23
Heroin	72	38	26
Other Opiates	N/A	N/A	N/A

Dependence Only			
	1988	1990	1991
1 or more	2,182	2,361	1,648
Sedatives	150	60	131
Tranquilizers	126	101	152
Stimulants	256	223	133
Analgesics	249	243	118
Marijuana	1,648	1,655	1,104
Inhalants	26	86	87
Cocaine	589	556	480
Hallucinogens	67	122	75
Heroin	59	54	72
Other Opiates	114	93	142

Abuse Only			
	1988	1990	1991
1 or more	627	635	787
Sedatives	6	8	43
Tranquilizers	17	38	4
Stimulants	33	17	47
Analgesics	20	*	26
Marijuana	466	555	570
Inhalants	*	12	4
Cocaine	269	184	210
Hallucinogens	42	10	48
Heroin	*	*	4
Other Opiates	N/A	N/A	N/A

Source: Lewis-Vin analysis of 1988, 1990, and 1991 NIDA National Household Survey on Drug Abuse

N/A: Not available

\*: Low precision, no estimates reported

Unadjusted Estimates of Dependence and Abuse (in thousands)  
by Year of Survey (1988, 1990, 1991) and by Last Time Used (Used in the  
Past Month and Used in the Past Year But Not in the Past Month)

Abuse and/or Dependence						
	1988		1990		1991	
	Post Month	Post Year	Post Month	Post Year	Post Month	Post Year
1 or more	3,309	835	2,714	1,119	2,480	627
Sedatives	86	92	116	8	109	65
Tranquilizers	106	59	147	36	161	46
Stimulants	369	48	261	48	188	128
Analogics	203	66	166	126	99	65
Marijuana	2,533	498	1,959	611	1,648	377
Inhalants	21	5	79	35	78	14
Cocaine	945	271	651	369	710	249
Hallucinogens	118	46	116	16	97	30
Heroin	126	5	56	36	90	11
Other Opiates	71	43	78	15	107	35

Abuse and Dependence						
	1988		1990		1991	
	Post Month	Post Year	Post Month	Post Year	Post Month	Post Year
1 or more	1,118	217	609	168	610	263
Sedatives	21	*	55	*	*	*
Tranquilizers	21	*	46	*	81	*
Stimulants	125	3	59	9	77	59
Analogics	*	*	49	*	5	5
Marijuana	782	135	305	55	244	106
Inhalants	1	*	14	*	1	*
Cocaine	233	125	181	96	175	92
Hallucinogens	49	5	*	*	23	*
Heroin	67	5	2	36	19	7
Other Opiates	N/A	N/A	N/A	N/A	N/A	N/A

Dependence Only						
	1988		1990		1991	
	Post Month	Post Year	Post Month	Post Year	Post Month	Post Year
1 or more	1,678	606	2,120	710	1,257	391
Sedatives	59	92	60	*	76	55
Tranquilizers	67	59	65	36	106	46
Stimulants	211	45	184	39	73	60
Analogics	200	45	117	126	77	42
Marijuana	1,393	254	1,266	390	909	195
Inhalants	20	5	53	35	76	11
Cocaine	487	102	386	172	383	97
Hallucinogens	67	*	113	10	48	27
Heroin	59	*	54	*	71	1
Other Opiates	71	43	78	15	107	35

Abuse Only						
	1988		1990		1991	
	Post Month	Post Year	Post Month	Post Year	Post Month	Post Year
1 or more	513	114	394	241	613	173
Sedatives	6	*	*	8	33	10
Tranquilizers	17	*	38	*	4	*
Stimulants	33	*	17	*	38	9
Analogics	*	20	*	*	6	18
Marijuana	358	108	388	167	494	76
Inhalants	*	*	12	*	1	3
Cocaine	226	44	84	100	152	58
Hallucinogens	2	41	3	7	25	23
Heroin	*	*	*	*	*	4
Other Opiates	N/A	N/A	N/A	N/A	N/A	N/A

Source: Levin-Vin analyses of 1988, 1990, 1991 INHDA National Household Survey on Drug Abuse

N/A Not available

\* Low precision, no estimate reported

Unadjusted Estimates of Dependence and Abuse (in thousands)  
by Year of Survey (1988, 1990, 1991) and by Drug Used

Abuse and/or Dependence						
	1988		1990		1991	
	Marijuana Only	Marijuana and/or any Other Drug	Marijuana Only	Marijuana and/or any Other Drug	Marijuana Only	Marijuana and/or any Other Drug
	1 or more	2,107	1,308	2,068	1,758	1,912
Barbiturates	"	77	"	23	"	75
Benzodiazepines	"	47	"	95	"	207
Stimulants	"	384	"	309	"	310
Anesthetics	"	249	"	291	"	34
Marijuana	2,107	582	2,068	526	1,912	417
Alcohol	"	35	"	114	"	72
Cocaine	"	347	"	1,020	"	257
Neuroleptics	"	122	"	132	"	147
Heroin	"	121	"	92	"	101
Other Opioids	"	114	"	93	"	142

Abuse and Dependence						
	1988		1990		1991	
	Marijuana Only	Marijuana and/or any Other Drug	Marijuana Only	Marijuana and/or any Other Drug	Marijuana Only	Marijuana and/or any Other Drug
	1 or more	549	786	293	538	248
Barbiturates	"	21	"	55	"	4
Benzodiazepines	"	21	"	46	"	31
Stimulants	"	128	"	98	"	136
Anesthetics	"	"	"	49	"	10
Marijuana	549	369	293	62	248	108
Alcohol	"	1	"	14	"	1
Cocaine	"	357	"	278	"	268
Neuroleptics	"	34	"	"	"	23
Heroin	"	72	"	38	"	36
Other Opioids	N/A	N/A	N/A	N/A	N/A	N/A

Dependence Only						
	1988		1990		1991	
	Marijuana Only	Marijuana and/or any Other Drug	Marijuana Only	Marijuana and/or any Other Drug	Marijuana Only	Marijuana and/or any Other Drug
	1 or more	1,168	1,018	1,311	1,080	608
Barbiturates	"	193	"	60	"	121
Benzodiazepines	"	126	"	101	"	132
Stimulants	"	236	"	233	"	133
Anesthetics	"	246	"	242	"	118
Marijuana	1,168	483	1,311	348	608	239
Alcohol	"	35	"	83	"	67
Cocaine	"	389	"	384	"	480
Neuroleptics	"	67	"	122	"	73
Heroin	"	39	"	54	"	72
Other Opioids	"	114	"	93	"	142

Abuse Only						
	1988		1990		1991	
	Marijuana Only	Marijuana and/or any Other Drug	Marijuana Only	Marijuana and/or any Other Drug	Marijuana Only	Marijuana and/or any Other Drug
	1 or more	394	233	438	202	371
Barbiturates	"	6	"	8	"	43
Benzodiazepines	"	17	"	35	"	4
Stimulants	"	33	"	17	"	47
Anesthetics	"	20	"	"	"	26
Marijuana	394	77	438	120	371	68
Alcohol	"	"	"	12	"	4
Cocaine	"	209	"	184	"	210
Neuroleptics	"	42	"	10	"	48
Heroin	"	"	"	"	"	4
Other Opioids	N/A	N/A	N/A	N/A	N/A	N/A

Source: Unadjusted figures of 1988, 1990, 1991 NIDA National Household Survey on Drug Abuse

N/A: Not available

\* Low estimates in certain categories

\*\* Figures excluded from existing drug abuse data collection

**Appendix D**

**Correspondence of IOM with DHS Estimates  
of the Need for Drug Abuse Treatment**

**Correspondence of IOM with DHHS Estimates of  
the Need for Drug Abuse Treatment (in thousands)**

1988		IOM Need for Treatment				
DHHS Need for Treatment		Clear	Probable	Possible	None	Total
	Abuse and Dependence	728	251	8	347	1,335
	Dependence Only	245	576	466	894	2,182
	Abuse Only	184	76	121	245	627
	Abuse and/or Dependence	1,157	904	596	1,487	4,144
	None	350	2,222	1,943		
	<b>Total</b>	<b>1,507</b>	<b>3,126</b>	<b>2,539</b>		

1990		IOM Need for Treatment				
DHHS Need for Treatment		Clear	Probable	Possible	None	Total
	Abuse and Dependence	451	92	35	260	837
	Dependence Only	487	454	441	979	2,361
	Abuse Only	156	146	71	262	635
	Abuse and/or Dependence	1,094	691	547	1,501	3,833
	None	693	1,959	1,967		
	<b>Total</b>	<b>1,787</b>	<b>2,650</b>	<b>2,514</b>		

1991		IOM Need for Treatment				
DHHS Need for Treatment		Clear	Probable	Possible	None	Total
	Abuse and Dependence	328	140	57	347	872
	Dependence Only	308	516	193	631	1,648
	Abuse Only	262	178	94	252	787
	Abuse and/or Dependence	899	834	344	1,231	3,307
	None	461	1,849	1,902		
	<b>Total</b>	<b>1,360</b>	<b>2,683</b>	<b>2,246</b>		

Source: Lewin-VHI analysis of 1988, 1990, 1991 NIDA Household Survey on Drug Abuse

THE WHITE HOUSE

PRESIDENT'S COMMISSION ON MODEL STATE DRUG LAWS



# Socioeconomic Evaluations of Addictions Treatment

December 1993

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**DRAFT**

**FACTORS AFFECTING THE DEMAND  
FOR DRUG ABUSE TREATMENT**

**Office of National Drug Control Policy**

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## I. EXECUTIVE SUMMARY

The 1994 National Drug Control Strategy places its highest priority on reducing drug use among hardcore drug users and calls for funds to provide drug treatment to this targeted group. Although these funds would help more hardcore drug users gain admission to drug treatment programs, their high rates of drug use still may not be significantly reduced because many hardcore drug users do not seek treatment, delay entry into treatment, or drop out of treatment. Therefore, to develop an effective drug control policy, understanding the factors that underlie the demand for drug treatment is critical.

This study was initiated to review research literature on factors affecting the demand for drug treatment and to make recommendations for increasing the demand for drug treatment. The study focused on utilization and retention rates as demand indicators. Utilization rates reflect the relative efficiency of programs in attracting drug users to treatment. In this study, utilization rates ranged from 63 percent for chemical dependency programs to 86 percent for methadone programs and from 70 percent for private for-profit programs to 84 percent for publicly funded programs. Retention rates reflect the relative effectiveness of programs in holding clients long enough to benefit from treatment. Study findings indicated that 3-month retention rates ranged from 33 percent for outpatient nonmethadone programs to 50 percent for therapeutic communities and other types of residential drug treatment programs to 66 percent for outpatient methadone programs.

Based on our research literature review, we conclude that the following strategies would increase the demand for drug treatment:

- Attract more drug users to treatment programs by eliminating economic barriers; supporting effective outreach and education efforts; and strengthening linkages with systems, institutions, and professions that regularly come in contact with drug users.

- Improve retention in drug treatment programs so that more clients stay in programs long enough to benefit from treatment by addressing those factors that "push and pull" clients in and out of programs.

## II. INTRODUCTION

The 1994 National Drug Control Strategy places its highest priority on reducing drug use among hardcore drug users and calls for funds to provide drug treatment to this targeted group. Although these funds would help more hardcore drug users gain admission to drug treatment programs, their high rates of drug use still may not be significantly reduced because many hardcore drug users do not seek treatment, delay entry into treatment, or drop out of treatment. Therefore, to develop an effective drug control policy, understanding the factors that underlie the demand for drug treatment is critical.

Between 1980 and 1991, the number of treatment slots in the U.S. drug treatment system grew from 170,600 to 446,672.<sup>1</sup> Even the expanded system, however, left millions of other Americans who had problems with drugs untreated. Nationally adjusted prevalence estimates show that 2.3 million adults met the *Diagnostic and Statistical Manual*, revised third edition (DSM-III-R) criteria for drug dependence or abuse from 1981 to 1983.<sup>2</sup> A recent national household survey indicated that 4 million people had significant drug problems.<sup>3</sup> Research accounting for high drug-using populations underrepresented in household surveys, such as the homeless and institutionalized, estimated 5.5 million drug users in the United States.<sup>4</sup>

Most drug users either do not seek or delay admission to drug treatment programs. Only 30 percent of Americans with diagnosable drug disorders received treatment during the past year.<sup>5</sup> About 42 percent of intravenous drug users have never been in a drug treatment program.<sup>6</sup> This a major public health issue due to the role that drug users play in spreading HIV (human immunodeficiency virus), multidrug-resistant tuberculosis, and other infectious diseases.<sup>7</sup>

Exhibit 1 following this page shows the utilization and retention rates for the four major types of drug treatment programs. Utilization rates indicate the ratio of active drug treatment clients to treatment capacity and reflect the relative efficiency of programs in attracting drug users. In 1991 utilization rates ranged from 63 percent for chemical dependency programs to 86 percent for methadone programs.<sup>8</sup> Retention rates indicate the relative effectiveness of programs in holding clients long enough to benefit from treatment.<sup>9</sup>

From 1979 to 1981, the dates of the last national study of drug treatment programs, 3-month retention rates ranged from 33 percent for outpatient nonmethadone programs to 66 percent for methadone programs.<sup>10</sup>

<b>Exhibit 1</b>				
<b>Utilization and Retention Rates for Drug Treatment Programs</b>				
<b>Rates</b>	<b>Methadone Maintenance Programs</b>	<b>Therapeutic Communities</b>	<b>Chemical Dependency Programs</b>	<b>Outpatient Nonmethadone Programs</b>
Utilization (1991) <sup>11</sup>	86%	85%	63%	83%
Retention (1979-81) <sup>12</sup>	66%	50%	-	33%

Knowledge of factors affecting utilization rates is useful for addressing economic barriers to drug treatment and developing effective outreach strategies for recruiting hard-to-reach drug users into treatment programs. Knowledge of factors affecting retention rates is useful for developing effective strategies for keeping clients in programs long enough to benefit from treatment. This study was initiated to review research literature on factors affecting the demand for drug treatment and to make recommendations for increasing the demand for drug treatment.

**Methodology**

We conducted a systematic literature search on factors affecting the demand for drug treatment using MEDLINE, PSYCHLIT, and SOCIOLOGICAL ABSTRACTS retrieval services. These retrieval services index English-language articles published in major medical, health, social, and behavioral science journals and allow retrieval service users to obtain references to abstracted articles by using key words. The following combinations of key words were used to identify relevant articles for the literature review: (1) drug (and alcohol and substance) use, abuse, addiction, and dependence; (2) drug treatment, rehabilitation, and methadone; (3) demand, motivation, barriers, incentives, pressure, involvement, and access; and (4) retention, termination, duration, and length of stay. Since these retrieval services

only index articles in professional journals, we also searched literature published by the National Institute on Drug Abuse and used many dozens of books, articles, and monographs included in our files. These sources constituted the basic frame for this literature review.

We drew most heavily on large studies and national data collection systems. Particular attention was paid to the following:

- National AIDS Demonstration Research (NADR) for data on drug users who had and had not been in drug treatment programs;<sup>13</sup>
- National Drug and Alcoholism Treatment Unit Survey for data on drug treatment utilization rates;<sup>14</sup> and
- Drug Abuse Reporting Program and the Treatment Outcome Prospective Study for data on client retention and outcomes from drug treatment programs.<sup>15</sup>

We focused mostly on studies that (1) used experimental, quasi-experimental, or longitudinal research designs; (2) were not reports on baseline data or preliminary findings; (3) had high response rates and low subject attrition during the followup; and (4) used multivariate statistics to analyze data. The latter feature was particularly important because multivariate statistics screen out weak and redundant variables and thus help to identify the most important factors affecting the demand for drug treatment.

Our literature review did not focus on primary alcohol users because our main interest was in illicit drug abusers and the programs that provide treatment for this population. We focused on methadone programs, therapeutic communities, chemical dependency programs, and outpatient nonmethadone programs because these are the major drug treatment programs in the United States. Research showed that factors affecting the demand for treatment varied across these programs.

Originally we planned to develop matrices of factors affecting the demand for each of the major types of drug treatment for the drug-using population as a whole and for the following subpopulations: (1) pregnant addicts/women of childbearing age, (2) culturally

specific groups, (3) adolescents, (4) the mentally codiagnosable, and (5) injecting drug users. However, our literature review found that existing studies would not support construction of such matrices. Insufficient attention in the literature has been given to factors affecting the demand for treatment, particularly for subpopulations of drug users. Constructing these matrices would not have been productive due to their having large numbers of empty cells.

Similarly, we had planned to analyze data collected for four large national studies to identify factors affecting the demand for different kinds of drug treatment. We canceled those plans when we discovered that the studies did not include sufficient data to support such analysis. Moreover, the data from the Drug Abuse Treatment Outcome Survey that we had hoped would be available were still being collected. A monograph on NADR was published after we submitted our workplan. The monograph includes detailed data analyses collected by the NADR project.<sup>18</sup> We drew heavily on the results presented in this monograph when reviewing the literature on factors affecting the demand for drug treatment.

### Organization of the Paper

The next section discusses client and program factors that affect the demand for drug treatment in general and specifically the demand for drug treatment at outpatient methadone programs, therapeutic communities, chemical dependency programs, and outpatient nonmethadone programs. The following section discusses system factors affecting the demand for drug treatment, including public funding, private funding, and linkage issues. The last section makes policy recommendations for increasing the demand for drug treatment.

### III. CLIENT AND PROGRAM FACTORS AFFECTING THE DEMAND FOR TREATMENT

This section discusses the characteristics of drug users who have and have not been in drug treatment programs, barriers to utilizing drug treatment programs, and factors that push and pull clients in and out of drug treatment programs.

#### Drug Users and Drug Treatment

NADR data indicate that 42 percent of the 20,000 intravenous drug users studied had never been in drug treatment.<sup>17</sup> Those users who had not been in treatment tended to be young, to have fewer years of education, and to be African-American or Hispanic. Non-Puerto Rican Hispanics were least likely to utilize drug treatment programs. Furthermore, approximately the same percentage of women and men had been in drug treatment programs; however, women who had children living with them were somewhat less likely to have been in drug treatment programs than women without children. Other findings indicate that outreach efforts have been successful in reaching drug users who have never been in treatment.<sup>18</sup>

Research has been conducted comparing characteristics of drug users who have and have not been in treatment programs. Drug users who had never been in treatment programs were less likely to report experiencing negative effects from drugs, such as having problems with families, friends, and/or employers; losing control of their drug use; and suffering from depression.<sup>19</sup> They also were less likely to be married or have a full-time job, factors that may discourage drug use. While 30 percent of the drug users studied had been to emergency rooms for help with drug-related problems, only 7 percent recalled being referred to drug treatment programs.<sup>20</sup> Approximately 20 percent of those who sought treatment reported that they were not admitted due to lack of an available bed or because they lacked necessary identification, medicaid coverage, or other requirement. According to data published in 1990, the number of drug users reported to be on waiting lists equaled more than one-fourth of the total daily enrollment at public tier drug treatment programs.<sup>21</sup>

Substance abusers gave the following three reasons for not seeking or for delaying entry into drug and alcohol treatment programs: (1) they could handle the problem on their own (96 percent); (2) the problem was not serious enough to warrant treatment (84 percent); and (3) they did not want to admit that they needed help (56 percent).<sup>22</sup> Negative attitudes toward treatment deter some drug users from seeking admission to treatment programs.<sup>23</sup> Of the intravenous drug users in the NADR study who had been in treatment, 27 percent had been in therapeutic communities, 25 percent in methadone programs, and 17 percent in outpatient nonmethadone programs.<sup>24</sup> Participation in drug treatment programs was lowest in the South.

### Outpatient Methadone Programs

Methadone programs were established in the mid-1960s to reduce heroin use among addicts.<sup>25</sup> These programs provide clients with daily methadone doses, counseling, and other outpatient services. Evaluations show that methadone programs are effective in reducing heroin use.<sup>26</sup> The daily census of methadone program clients increased from 67,000 in 1980 to 99,111 in 1991, with the utilization rate reaching 86 percent.<sup>27</sup> The last two national studies indicated that 1-year retention rates fell from 60 percent to 38 percent.<sup>28</sup> Additional findings show that approximately one-third of the clients drop out during the first 3 months after admission.<sup>29</sup> Continuous enrollment is important because most clients rapidly revert to heroin use soon after leaving methadone programs.<sup>30</sup>

*Barriers to Utilizing Programs.*—Economic barriers, such as fees for detoxification, admission, and treatment services, prevent drug users from utilizing these programs.<sup>31</sup> Coupons or vouchers have been found to promote entry into detoxification and treatment programs.<sup>32</sup> Streamlining the admissions process can significantly reduce the number of clients on waiting lists for treatment.<sup>33</sup> Other findings indicate that African-Americans and Hispanics are more affected by funding than Caucasians<sup>34</sup> and that women are more likely to join programs than men.<sup>35</sup>

Misconceptions about methadone may prevent drug users from seeking or staying in methadone programs.<sup>36</sup> For example, some drug users mistakenly believe that methadone "rots the bones."<sup>37</sup> Women are more likely than men to be concerned about possible side

effects from methadone, specifically constipation, excessive sweating, and weight gain, side effects that can be effectively controlled.<sup>38</sup>

*Push and Pull Factors.*—Motivational factors, such as having high expectations for quitting drugs and a strong desire for seeking help, are associated with early dropout from methadone programs.<sup>39</sup> Patients on high methadone doses are less likely to drop out of programs than those on low doses.<sup>40</sup> More than one-half of methadone programs currently prescribe methadone doses that are judged to be inadequate for blocking the effects of narcotics use.<sup>41</sup>

Program and treatment factors affecting retention include fees charged, policies regarding take-home doses, ease of program access, quality of social services provided, and availability of individualized treatment.<sup>42</sup>

Retention also is affected by patients' views regarding prolonged methadone use.<sup>43</sup> Methadone patients report that they would like to have more vocational and employment services provided; therefore, offering these services may increase the demand for treatment.<sup>44</sup>

### **Therapeutic Communities**

Therapeutic communities are based on a self-help model that involves group dynamics, personal confrontation, shared sacrifices, social learning, and role modeling within a well-defined structure. This type of treatment service can trace its roots back to programs founded in the late 1950s and early 1960s.<sup>45</sup> Traditional therapeutic communities typically have three phases: induction (0-2 months), primary treatment (2-12 months), and re-entry (13-24 months). Evaluations show that these programs are effective in reducing heroin, cocaine, and other drug use.<sup>46</sup> The daily census in therapeutic communities and other types of residential programs increased from 15,000 in 1980 to more than 51,575 in 1991, when the utilization rate reached 85 percent.<sup>47</sup> About one-half of the clients drop out during the first 3 months after admission.<sup>48</sup>

*Barriers to Utilizing Programs.*—Significant economic and psychological barriers, combined with too few treatment slots and long waiting times for admission, prevent or discourage many drug users from utilizing these programs. Many therapeutic communities do not accept women with children and clients who take medications for opiate addiction or psychiatric disorders.

*Push and Pull Factors.*—Retention rates were low during the 1960s and 1970s, with fewer than 25 percent of the clients staying long enough to complete the program.<sup>49</sup> Attrition has been highest among younger clients.<sup>50</sup> Clients who stay the longest are those who enroll under pressure from the legal system and/or significant others, were in prison before admission, or were in a Treatment Alternatives to Street Crime (TASC) program prior to admission.<sup>51</sup>

Programs with difficult or demanding therapeutic regimens tend to have high client attrition rates.<sup>52</sup> Client retention predictors include having felt comfortable in large groups of people before using drugs, a strong positive self-concept, and a sense of hopefulness about the future.<sup>53</sup> Mentoring and individual counseling increase retention.<sup>54</sup>

Other retention predictors include the following: (1) clients' beliefs regarding the length of time they need to stay in the program; (2) the difficulty with which clients conform to the behavior expected by the program; (3) the extent to which clients think it is important to staff that they stay in the program; and (4) clients' program evaluations on salience, pleasure, and goodness dimensions.<sup>55</sup> These findings suggest that therapeutic communities may be able to increase retention by individuating treatment and making programs less demanding and more rewarding.

### **Chemical Dependency Programs**

Chemical dependency or Minnesota Model programs are based on the Alcoholics Anonymous (AA) 12-Step model of personal change.<sup>56</sup> Although these programs were originally established in the Midwest in the late 1950s to treat alcoholics, they have been used to treat other types of substance users during the past decade. The first three steps of these programs typically take place in hospitals or other residential facilities during a 28-day

period, followed by weekly or more frequent participation in AA self-help groups in the community.

Chemical dependency programs effectively reduce drug and alcohol use among some clients,<sup>67</sup> particularly those clients required to attend by employee assistance programs (EAPs).<sup>68</sup> The daily census of chemical dependency programs increased from 2,900 in 1980 to 9,183 in 1991, when the utilization rate reached 63 percent.<sup>69</sup> More than 90 percent of the clients who stay at least 5 days after admission complete the first three steps (28 days) of the 12-Step program.<sup>60</sup>

*Barriers to Utilizing Programs.*—Most of the clients of chemical dependency programs are white males who have graduated from high school and who were employed during the year before admission.<sup>61</sup> Clients with this profile are more likely to have health insurance that includes coverage for substance abuse treatment than clients who are unemployed or employed at jobs that do not require a high school education.

*Push and Pull Factors.*—The 12-Step philosophy appears to be a significant factor that attracts and retains many clients in chemical dependency programs.<sup>62</sup> Clients admitted to these programs with some form of external pressure, such as being arrested for driving while intoxicated (DWI), are more likely to complete the program than clients admitted without this pressure.<sup>63</sup> More than three-fourths of the clients reported at least some participation on the part of their families or significant others in their treatment at the program.<sup>64</sup> According to a recent survey of recovering addicts, this is an important factor affecting the demand for treatment at chemical dependency programs.<sup>65</sup>

## Outpatient Nonmethadone Programs

Outpatient nonmethadone drug treatment includes a heterogeneous group of programs that are often based in substance abuse units, mental health centers, or other community-based facilities. These programs vary in their organization, sponsorship, duration, staffing, and treatment.<sup>66</sup> Although some programs use individual and/or group counseling to treat drug users, other programs may use psychotropic medications along with one or both types of counseling to treat co-existing psychiatric disorders. Treatment duration

may vary from a single brief treatment session to weekly or more frequent sessions over an extended period of time.

Outpatient nonmethadone programs are effective in reducing use of marijuana and illicit psychotherapeutic drugs.<sup>67</sup> The daily census of these programs skyrocketed from 86,000 in 1980 to 661,031 in 1991, when the utilization rate reached 83 percent.<sup>68</sup> Two-thirds of the clients drop out of the program during the first 3 months after admission.<sup>69</sup>

*Barriers to Utilizing Programs.*—A comparison of measures of access to privately funded versus publicly funded programs showed that, among publicly funded programs, (1) fewer clients were able to pay for treatment, (2) more clients paid a reduced fee, and (3) fewer clients were turned away from treatment.<sup>70</sup>

*Push and Pull Factors.*—Retention in outpatient nonmethadone programs is highest among women. Women may be more likely to seek drug treatment at mental health community programs than at other types of outpatient nonmethadone treatment programs.<sup>71</sup>

Clients who are either in a TASC program or involved in the criminal justice system tend to stay the longest in these programs.<sup>72</sup> Vocational and employment services are other factors that may affect the demand for treatment at these programs.<sup>73</sup> More research is needed on factors that push and pull clients in and out of different types of outpatient nonmethadone programs.

#### IV. SYSTEM FACTORS AFFECTING THE DEMAND FOR TREATMENT

Differences in types and levels of funding across treatment tiers are factors affecting the demand for drug treatment. This is reflected in variations in utilization rates, which range from 70 percent for private for-profit programs to 84 percent for publicly funded programs.<sup>74</sup> This section discusses types and levels of funding and the linkages needed to increase the demand for drug treatment.

##### Public Funding

Publicly funded providers draw most of their funding from State and local revenues, Substance Abuse Prevention and Treatment (SAPT) Block Grant (formerly Alcohol, Drug Abuse, and Mental Health Services Block Grant) funds, and medicaid. Differences in program funding affect the types of clients admitted, the levels of funding available to the clients, and the requirements placed on the programs by licensure and funding agencies. The demand for publicly funded treatment programs is partly a function of supply, in which a major limit on service utilization is related to funding.

*Block Grants and State/Local General Revenues.*—Many clients join publicly funded programs because they are not insured or are unable to afford the fees charged by privately funded programs. Thus, financial support availability is a factor that affects the demand for drug treatment.<sup>75</sup> For clients who are not eligible for medicaid, funding for drug treatment is derived almost solely from local and State revenues (i.e., general funds or fee for service) and the SAPT Block Grant.

Treatment availability for indigent and other clients served in the public tier is affected by the true costs associated with care. Often the only costs over which a program has control are the numbers of staff employed and/or the numbers of clients served. If funding resources are changed, the intensity, quality, and numbers of services provided are likely to change as well.

Increased requirements have been placed on public programs that receive SAPT Block Grant funds as a result of their role in addressing public health problems, such as HIV/AIDS (acquired immune deficiency disease) and tuberculosis.<sup>76</sup> The implications of these requirements are twofold. First, the increasing number of requirements may constrict the ability of programs to admit drug users or provide other services. Second, the recently revised SAPT Block Grant regulations enhance treatment access for injecting drug users and pregnant women or women with dependant children. This suggests that access to treatment at publicly funded programs may become less of a problem for injecting drug users and women.

*Medicaid.*—Medicaid is an important potential reimbursement mechanism, providing 12 percent of program revenues among publicly funded programs.<sup>77</sup> Medicaid reimburses (or may reimburse) a wide range of services needed to treat and rehabilitate drug users.<sup>78</sup> All States are required to cover inpatient hospitalization, which may include detoxification services. Because medicaid is jointly administered by the Federal and State Governments, considerable variation exists across States as to what services may be covered.<sup>79</sup> All States choose to cover "clinical" services, which may include standard outpatient drug treatment.<sup>80</sup> However, barriers may still exist in that the types of services covered, length of coverage, and regulations about the service provision vary and may affect whether addicts receive effective treatment.

Not all drug treatment programs are medicaid eligible. Medicaid only reimburses outpatient services provided in "medically supervised outpatient programs" and only reimburses residential services provided in a facility with 16 or fewer beds (i.e., the Institute for Mental Disease exclusion) or in acute care hospitals. States license and regulate medicaid-eligible programs and in some cases (e.g., New York) actually negotiate services to be provided through the program. All States cover either health-related and/or treatment-related costs of drug abuse through their medicaid programs.

To qualify for medicaid reimbursement, an individual must be either categorically needy (i.e., qualify for either Supplemental Security Income [SSI] or Aid to Families with Dependant Children [AFDC]) or medically indigent (i.e., qualify for AFDC if medical expenses were factored in). AFDC eligibility accounts for almost 80 percent of substance abusers who

are medicaid eligible. Most AFDC recipients are women. Recent expansions in medicaid eligibility allow women who earn between 133 percent and 185 percent of the Federal poverty level to receive medicaid.<sup>81</sup> Men between 21 and 65 are typically eligible for the Federal-matching funds only if they qualify for SSI disability. Disability can, however, be attributed to drug abuse—a fact that has led to increased services and funding for many clients in drug treatment programs.<sup>82</sup>

Program staff need to be instructed about medicaid-eligibility screening. Coordination between drug treatment programs and the appropriate agencies administering medicaid should occur for eligibility to be determined. Many addicts are not willing to traverse both physical distance and bureaucratic red tape to become eligible for special programs, such as medicaid; this fact may serve as a formidable barrier to addicts utilizing drug treatment programs.<sup>83</sup>

### Private Funding

Privately funded programs typically serve less economically disadvantaged drug users than publicly funded programs. Clients in privately funded programs often rely on private insurance and/or pay their expenses themselves. Due to recent changes in the organization and financing of health care, many private programs have begun to establish referral networks with managed care organizations (MCOs) and/or corporate EAPs. MCOs and EAPs often contract with providers to maintain a number of treatment slots or beds for clients referred through them.

Whereas MCOs may provide access to care (e.g., through a gatekeeper physician), they also may serve as a barrier to treatment. MCOs were founded to help limit spiraling health care costs. While the purpose of utilization review is to assess the appropriateness of patient care, it also has been used to discontinue care for patients still in need.<sup>84</sup> Recent efforts by the American Psychological Association and the American Psychiatric Association have sought to raise the level of awareness of client treatment needs among MCOs.

One important consideration in privately funded treatment is whether States require that drug and alcohol services are covered by insurance policies. As of 1991, 22 of the 50 States had passed laws requiring that substance abuse or mental health services be at least an option on private health insurance benefit packages (16 States mandate coverage when needed).<sup>65</sup> Insurance coverage of substance abuse treatment is likely to expand as similar laws are passed in other States and as anticipated health care reforms are implemented.

### Linkage Issues

Institutions and individuals who regularly come in contact with drug users can identify and refer them to drug treatment programs. Unfortunately, many service providers are not trained or experienced in identifying concomitant substance abuse problems and may not know where to refer substance abusers for treatment.<sup>66</sup>

The strategy of establishing linkages with helping professions (e.g., health care, mental health care, and EAPs) is based on epidemiologic findings that concomitant drug abuse contributes to the problems for which clients are seeking help. School- and employer-based linkages are predicated on the belief that drug abuse interferes with individual performance. Finally, linkages with the criminal justice and child welfare systems are often used to apply pressure to ensure that clients seek help. Exhibit 2 on the following page shows factors that strengthen drug treatment system linkages.

*Criminal Justice.*—Criminal justice linkages rely on referrals and pressure placed on clients to join and stay in drug treatment programs. The proliferation of TASC programs and other mechanisms for diverting drug users from the adjudication process has been successful in stimulating the demand for drug treatment.<sup>67</sup> Moreover, DWI programs often refer persons to treatment either as part of the sentence or part of a diversion. Other types of pretrial and post-trial procedures have been established to attract or induce more drug users into treatment programs. Drug treatment is increasingly being required or offered in conjunction with criminal justice sanctions, such as probation and incarceration.

**Exhibit 2**

**Factors that Strengthen Drug Treatment System Linkages**

- Increasing communication and coordination between systems at the planning, management, and service delivery levels;
- Instituting training, routine drug use screening, and protocols to ensure that clients are identified and referred to drug treatment programs;
- Developing formal linkages (e.g., service contracts or memoranda of understanding) as well as informal linkages between agencies; and
- Establishing case management to facilitate access to services.

*Health Care.*—A substantial effort is underway by many Federal and State agencies to identify and overcome barriers to linkages between health care and drug abuse treatment.<sup>68</sup> Some specific issues currently being addressed through these efforts include (1) collocating health and drug treatment services; (2) strengthening substance abuse education in medical and nursing schools; and (3) providing “gatekeepers” (e.g., physician case managers) in health care organizations to ensure that all patient needs are met.

*EAPs.*—EAPs have a dual role in affecting the demand for drug abuse treatment. First, they can train supervisors, union leaders, and others to identify and refer employees who have problems with drugs to the EAP. Second, EAPs help employees obtain access to treatment through maintaining relationships and treatment slots at community programs. EAP staff also may serve as case managers to help employees through the entire treatment service process.<sup>69</sup>

## V. POLICY RECOMMENDATIONS

This study reviewed research literature on factors affecting the demand for drug treatment. On the basis of this review, we conclude the following is needed to increase the demand for drug treatment.

- Attract more drug users to drug treatment programs by eliminating economic barriers, supporting effective outreach and education efforts, and strengthening linkages with systems, institutions, and professions that regularly come in contact with drug users.
  - Policies are needed to increase public funding and health insurance coverage for drug treatment.
  - Education efforts are needed to inform drug users how treatment can help to address their problems and address misconceptions about treatment; outreach strategies are needed for minorities in general, and non-Puerto Rican Hispanics in particular.
  - Linkages need to be strengthened with schools and employers and with the health care, criminal justice, and social welfare systems to increase utilization of drug treatment programs.
- Improve retention in drug treatment programs by addressing factors that push and pull clients in and out of these programs so that more clients are retained long enough to benefit from treatment.
- Methadone programs need to find ways to prevent clients from dropping out of treatment, therapeutic communities need to find ways to retain clients for at least 3 months, and all programs need to address the high dropout rate among younger clients.

## FACTORS AFFECTING THE DEMAND FOR DRUG ABUSE TREATMENT

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- Systems are needed to more effectively utilize external pressure, foster motivation, provide individualized treatment, and make drug treatment less demanding and more rewarding for clients.

**ENDNOTES**

1. Gerstein and Harwood, 1990; Substance Abuse and Mental Health Services Administration (SAMHSA), 1993
2. Regier et al., 1988
3. National Institute on Drug Abuse, 1989
4. Gerstein and Harwood, 1990
5. Regier et al., 1993
6. Liebman, Knezek, Coughney, and Hua, 1993
7. Chaisson et al., 1989; Graham et al., 1992; Novick et al., 1990; Schoenbaum et al., 1989
8. SAMHSA, 1993
9. Bale et al., 1980; Simpson, 1979
10. Hubbard et al., 1989
11. SAMHSA, 1993
12. Hubbard et al., 1989
13. Brown and Beschner, 1993
14. SAMHSA, 1993
15. Hubbard et al., 1989; Sells and Simpson, 1976
16. Brown and Beschner, 1993
17. Liebman et al., 1993
18. Bonito, Bohlig, Dennis, Fairbank, and Rachal, 1993; Jackson, Rotkiewicz, Quinones, and Passannante, 1989; Wechsberg, Dennis, Cavanaugh, and Rachal, 1993
19. Carroll and Rounsaville, 1992; Cunningham, Sobell, Sobell, Agrawal, and Toneatto, 1993; Lipton, Goldsmith, and Morales, 1992
20. Lipton et al., 1992
21. Gerstein and Harwood, 1990
22. Cunningham et al., 1993; Hingson, Mangione, Meyers, and Scotch, 1982
23. Cunningham et al., 1993

**FACTORS AFFECTING THE DEMAND FOR DRUG ABUSE TREATMENT**

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24. Liebman et al., 1993
25. Dole and Nyswander, 1967; Dole, Nyswander, and Kreek, 1966
26. Condelli and Dunteman, 1993a; Hubbard, Marsden, Cavanaugh, Rachal, and Ginzburg, 1988; Simpson, Savage, and Lloyd, 1979
27. Gerstein and Harwood, 1990
28. Hubbard et al., 1989; Sells and Simpson, 1976
29. Hubbard et al., 1989
30. Ball et al., 1988; Dole and Joseph, 1978
31. Jackson et al., 1989; Maddux, Vogtsberger, Desmond, and Esquivel, 1993
32. Bux, Iguchi, Lidz, Baxter, and Platt, 1993; Jackson et al., 1989; Sorensen, Costantini, Wall, Tamara, and Gibson, 1993
33. Dennis, Ingram, Burks, and Rachal, 1994
34. Anglin, Speckart, Booth, and Ryan, 1989
35. Liebman et al., 1993
36. Zweben and Payte, 1990; Zweben and Sorensen, 1988
37. Beschner and Walters, 1985; Goldsmith, Hunt, Lipton, and Strug, 1984
38. Rosenblum, Magura, and Joseph, 1991
39. Simpson and Joe, 1993
40. Ball and Ross, 1991; Caplehorn and Bell, 1991; Hargreaves, 1983
41. D'Aunno and Vaughn, 1992
42. Condelli, 1993; Condelli and Dunteman, 1993b; Maddux, 1993; Rosenblum et al., 1991
43. Brown, Bass, Gauvey, and Kozel, 1972
44. Craddock, Hubbard, Bray, Cavanaugh, and Rachal, 1982
45. De Leon, 1974; Yablonsky, 1965
46. Condelli and Hubbard, 1994; DeLeon, Wexler, and Jainchill, 1982; Simpson, 1979
47. Gerstein and Harwood, 1990; SAMHSA, 1993
48. Hubbard et al., 1989
49. De Leon and Schwartz, 1984

50. Condelli, 1994a
51. Condelli, 1986, 1989, in press; Condelli and De Leon, 1993; Sheffet et al., 1980; Weinman, 1990
52. Condelli, 1986, 1989
53. Condelli, 1994b; Condelli and De Leon, 1993; Sheffet et al., 1980; Washburne and Condelli, 1980
54. De Leon, 1991
55. Condelli, 1986, 1989
56. Cook, 1988a
57. Cook, 1988b; Hoffmann, 1992; Laudergeran, 1982
58. Walsh et al., 1991
59. Gerstein and Harwood, 1990; SAMHSA, 1993
60. Hoffmann and Belille, 1982
61. Hoffmann, 1992; Hoffmann and Belille, 1982
62. Cook, 1988b; Laudergeran, 1982
63. Hoffmann, 1992
64. Hoffmann, 1992
65. Hazelden, 1992
66. Wheeler, Fadel, and D'Aunno, 1992
67. Hubbard et al., 1989
68. Gerstein and Harwood, 1990; SAMHSA, 1993
69. Hubbard et al., 1989
70. Wheeler et al., 1992
71. Russo and Sobel, 1981; Weisner and Schmidt, 1992
72. Collins and Allison, 1983
73. Craddock et al., 1982
74. SAMHSA, 1993
75. Anglin et al., 1989; Jackson et al., 1989

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78. Congressional Research Service, 1993
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80. Congressional Research Service, 1993
81. Gates, 1990
82. Bartlett, 1993
83. Schlenger et al., 1992
84. National Association of Private Psychiatric Hospitals, 1992
85. Gates, 1991
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