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**SAMHSA**

Analytic Series: A-5

# Services Research Outcomes Study

Office of Applied Studies



DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Substance Abuse and Mental Health Services Administration

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Services Research Outcomes Study

A-5

# OFFICE OF APPLIED STUDIES

## SERVICES RESEARCH OUTCOMES STUDY (SROS)

DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Substance Abuse and Mental Health Services Administration

## **ACKNOWLEDGMENTS**

This publication was developed for the Substance Abuse and Mental Health Services Administration (SAMHSA), Office of Applied Studies (OAS), by National Opinion Research Center (N.O.R.C.) under Contract No. 283-91-8321. Significant contributors at N.O.R.C. include Sam Schildhaus (Project Director) and Dean Gerstein. Significant contributors at OAS include Barbara Ray (Project Officer). The Executive Highlights were prepared by Jim Michie (SAMHSA's Public Affairs Office).

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ORIGINATING OFFICE:  
SAMHSA, Office of Applied Studies  
5600 Fishers Lane, Room 16-105  
Rockville, Maryland 20857  
September 1998

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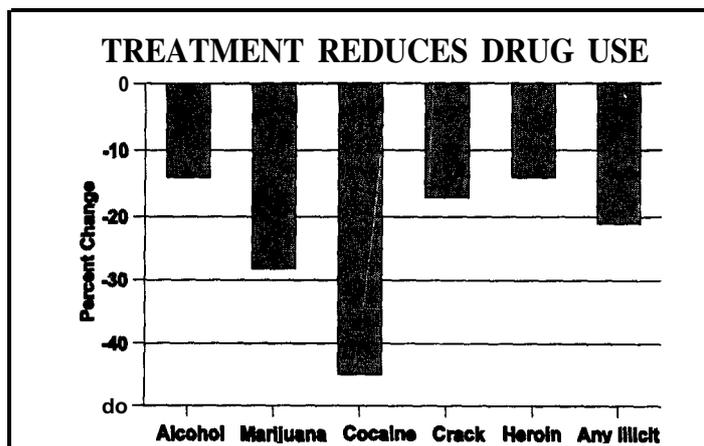
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## EXECUTIVE HIGHLIGHTS

### PRINCIPAL FINDING:

A nationally representative survey of 1,799 persons confirms that both drug use and criminal behavior are reduced following inpatient, outpatient and residential treatment for drug abuse.



The Services Research Outcomes Study (SROS), the first nationally representative study of substance abuse treatment outcomes, confirms that both drug use and criminal behavior are reduced following drug abuse treatment-inpatient, outpatient and residential.

These positive findings were determined through a survey of 1,799 (71.4% male and 28.6% female) persons. Substance abuse histories on each of the clients were provided by a nationwide sample of 99 drug treatment facilities. All 1,799 clients were interviewed five years following discharge from drug abuse treatment and are representative of the 976,012 individuals discharged from treatment in 1990. The SROS is the first among a series of outcome studies to include a nationally representative sample of drug treatment programs located in rural, suburban and urban locations. Major findings include:

### FINDINGS ON SUBSTANCE ABUSE

- ◆ The overall drop in the use of **any** illicit drug following treatment was 21 percent; a 14 percent decline in alcohol use; 28 percent in marijuana use; 45 percent in cocaine use; 17 percent in crack use; and a 14 percent drop in the heroin use.
- ◆ The decrease in post-treatment substance abuse was larger among females than males.
- ◆ Adolescents were the exception, showing a 13 percent increase in alcohol abuse and a 202 percent increase in crack use following treatment.
- ◆ Those remaining in treatment the longest were more likely to reduce or eliminate abuse of substances following treatment.

## FINDINGS ON CRIMINAL BEHAVIOR AND LIFESTYLE CHANGES

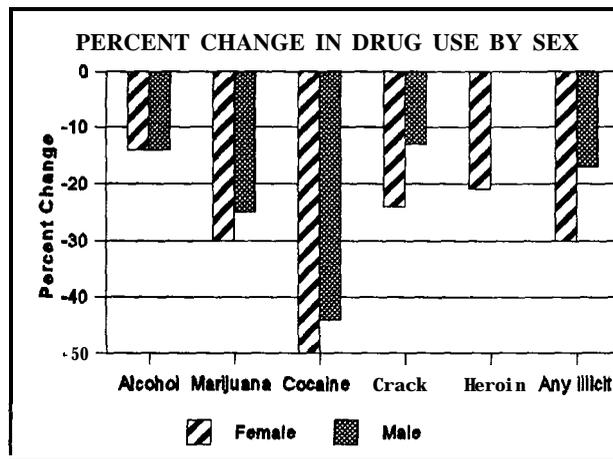
- ◆ Survey results confirm those of previous studies showing that treatment for substance abuse can significantly reduce crime.
- ◆ Most criminal activity, including breaking and entering, drug sales, prostitution, driving under the influence and weapons use declined by between 23 and 38 percent after drug treatment.
- ◆ Older age groups were more likely to reduce their post-treatment criminal activities than were younger groups.
- ◆ Involvement in physical abuse and suicide attempts declined following treatment.
- ◆ There was a noticeable shift toward regaining and retaining child custody after drug abuse treatment.
- ◆ More reliable housing was secured following treatment.

## SROS VALIDATES **FINDINGS** OF EARLIER STUDIES

The Services Research Outcomes Study (SROS) validates repeated study findings that drug treatment has practical and tangible benefits to drug users and society. The reduction in crime alone produces benefits to society that outweigh the investment in treatment.

### CHANGES IN DRUG USE BY SUBGROUPS

Sex and Age



While the overall use of illicit drugs dropped after substance abuse treatment, some distinct differences emerged in the rate of change among treatment subgroups. For overall drug use and for each of the most frequently used drugs (marijuana, cocaine, crack, and heroin), the decrease in post-treatment usage was larger among females than among males. The one exception to the overall decrease in drug use following treatment was for those who were adolescent when discharged from treatment. Following treatment, adolescents **increased their** use of alcohol by 13 percent and the use of crack by 202 percent, albeit from a low pre-treatment base of five percent.

Specific reasons for the difficulties in treating adolescents remain unclear. Consequently, this treatment subgroup poses an ongoing challenge for addiction researchers and those who work with adolescent substance abusers.

### Length of Stay

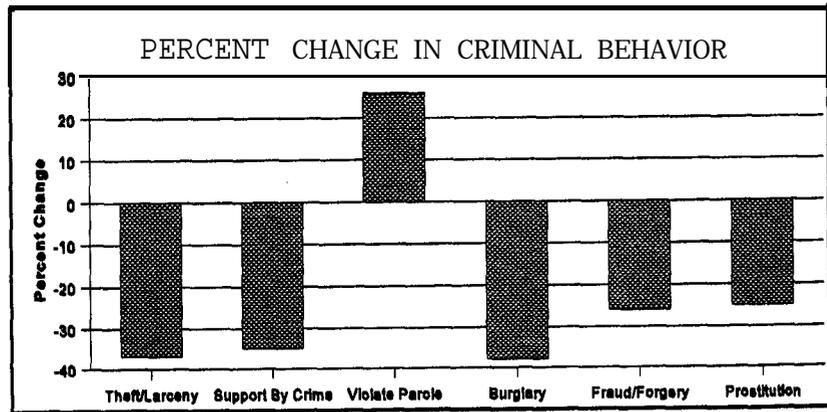
The study showed that length of stay in drug treatment was associated with decreases in drug use. Clients who stayed in treatment the longest were most likely to reduce or eliminate their pre-treatment drug use. This finding was consistent for all drugs except crack.

## CRIMINAL BEHAVIOR

### Overall Changes in Criminal Behavior

The link between substance abuse and criminal behavior is well established, and the SROS findings confirm the results of previous studies showing that treatment for substance abuse can significantly reduce crime.

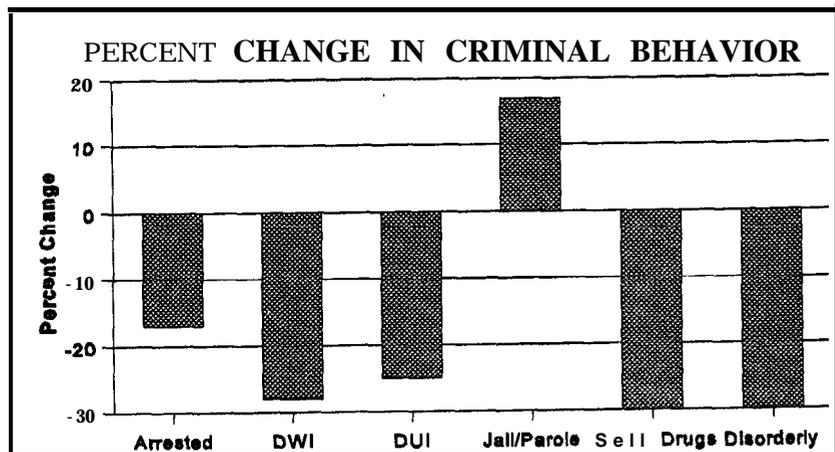
Most criminal activity, including income-producing crimes (breaking and entering, drug sales, and prostitution) and violent and disorderly offenses (driving under the influence and weapons use) declined by between 23 and 38 percent after drug treatment. However, there was no statistically significant difference in crimes of rape, homicide, robbery, and arson before and after treatment, though these numbers were already low in the client treatment population before treatment.



### Rates of Arrest

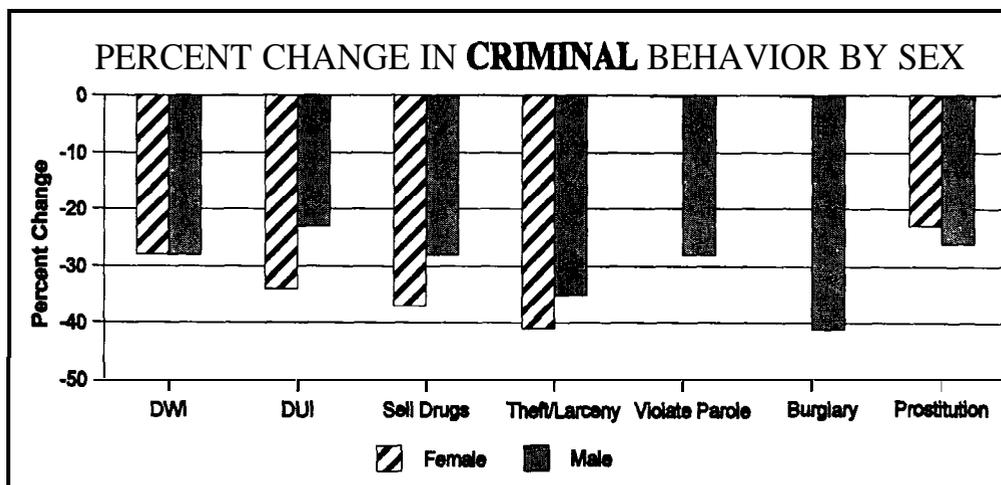
The study distinguished between criminal activity-as reported by the study participants-and arrests for criminal activity. While overall rates of most criminal behavior dropped, clients reported that their arrests declined by a smaller rate (17 percent) than did their criminal behavior.

Indeed, the rate of incarceration increased by 17 percent, and probation and parole violations rose by 26 percent. This is not surprising if the treatment episode was associated with criminal activity requiring sustained supervision by the criminal justice system, including increased opportunities for arrest and parole violation.



## Changes in Criminal Behavior by Subgroups

*Sex and Age.* The percent change in specific criminal activities before and after treatment differed somewhat by sex, but they showed no unifying pattern of consistent differences.



Older age groups were much more likely to reduce their post-treatment criminal activities than were younger groups. The SROS revealed a dramatic difference in criminal behavior between the youngest and oldest age groups: the rate of driving under the influence (DUI) and driving while intoxicated (DWI) increased for youth under 18 years old after treatment; and youth under age 18 increased selling drugs after treatment. Age groups over 30 decreased their criminal behavior in every area.

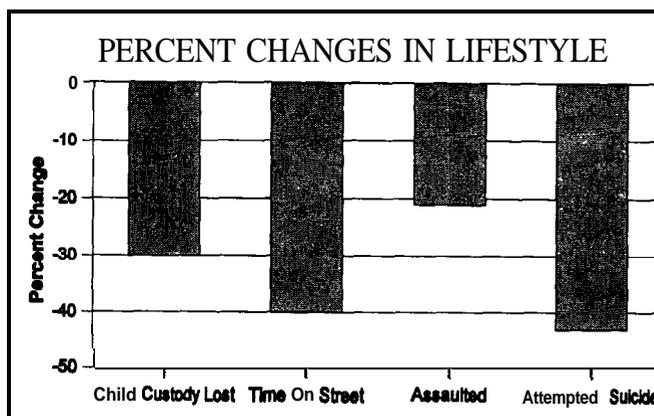
## LIFESTYLE CHARACTERISTICS

### Overall Changes In Lifestyle

The SROS also showed improved lifestyle characteristics in child custody, housing, employment, depression and suicide attempts following treatment: a 30 percent decline in loss of child custody; 40 percent drop in time spent on the street; 20 percent reduction in being assaulted; and a 43 percent decline in suicide attempts.

*Employment.* There was no appreciable change in the rate of full-time employment for clients discharged from treatment. Moreover, clients were less likely to be employed in a full-time job after treatment than before if they:

- were Hispanic;
- were black;
- were 30 years or older;
- had nine or fewer years of education;



- were in methadone programs;
- reported heroin as their main drug at admission to treatment.

Because drug treatment does not necessarily include job training, improved employment should not be expected.

## NATIONAL ESTIMATES OF THE EFFECTS OF DRUG TREATMENT

From a sample of 1,799 (71.4% male and 28.6% female) interviewed clients, it is possible to estimate what is happening in the overall U.S. population of treatment clients. This is done by weighting each respondent according to their likelihood of being in the sample; the likelihood of their program being selected for the study; and the likelihood of their being selected from their program. The details of the weighting procedures are included in the full report.

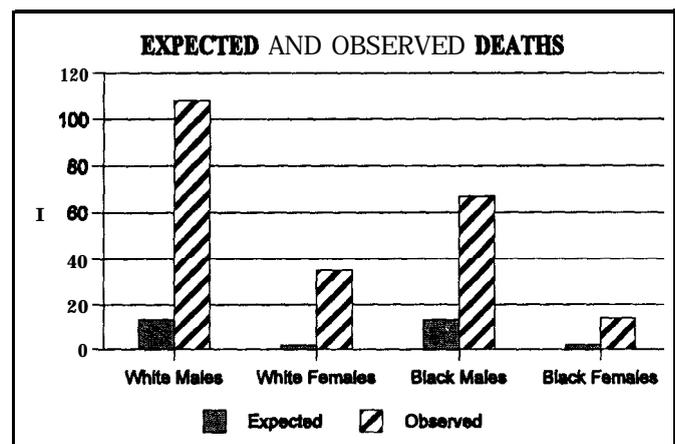
Examples of national estimates of the effects of drug treatment for the 1990 discharged client population of 976,012 make a strong case for the effectiveness of drug treatment interventions. In the five years after treatment, there were an estimated:

- 156,000 fewer illicit drug users;
- 187,000 fewer cocaine users;
- 152,000 fewer marijuana users;
- 101,000 fewer drug sales; and
- 165,000 fewer driving while intoxicated/ 131,000 fewer driving under the influence cases.

## MORTALITY DURING THE POST-TREATMENT PERIOD

About nine percent of the entire client sample died during the five-year post-treatment period. After controlling for age, sex, and race, a comparison of these numbers to the annual death rate in the U.S. population shows that:

- White males discharged from treatment had roughly eight times as many deaths as expected (108 deaths, rather than the expected 13);
- White females discharged from treatment had nearly 18 times as many deaths as expected (35 deaths, rather than the expected two);
- Black males discharged from treatment had about five times as many deaths as expected (67 deaths, rather than the expected 13);
- Black females discharged from treatment had seven times as many deaths as expected (14 deaths, rather than the expected two).



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## METHODOLOGY OF THE STUDY

The SROS interviewed 1,799 discharged clients randomly selected from a 1990 nationally representative sample of drug treatment programs, including hospital inpatient, residential, outpatient methadone, and outpatient nonmethadone. By comparing self-reported status (validated by urine tests) during the five years before treatment to the five years after treatment, an individual's change in drug use, health status, and social functioning was determined. Agreement between urinalysis and self-reported use of illicit drugs was high ranging from 89.7 to 98.5 percent. These changes, or outcomes, are the first to derive from a nationally representative sample of treatment. The SROS was designed to provide: (1) a **1990-cohort** of clients to use as baseline for possible changes in treatment outcomes following increased funding to the national treatment system in the 1990s; (2) a before-to-after comparison to measure outcomes of treatment provided in 1990; (3) a follow up of drug treatment clients five years after treatment to assess the level of sustained improvements in abstinence; and (4) a **first** look at multiple treatment episodes before and after treatment in a 1990 population. Detailed information about how the study was conducted is contained in the full report.

## I. INTRODUCTION

### PURPOSE OF THE STUDY

Public officials and citizens commonly ask a simple question about drug treatment: “Does it work?” Behind this simple question lie a series of more specific questions: Does treatment help people who are addicted to illicit drugs or alcohol to change their behavior — is their drug taking or heavy drinking stopped or greatly reduced? Do they become more productive and healthier? Do they stay out of trouble with the law? Does the public, including the families of users, benefit by sustaining fewer property losses and injuries from dealers and users? Is there a reduced burden on law enforcement and other criminal justice systems, health care, and welfare systems?

Knowledge about effects and costs of the national treatment effort has derived largely from outcome studies such as the National Treatment Improvement Evaluation Study (NTIES, Gerstein et al., 1997), the California Drug and Alcohol Treatment Assessment (CALDATA, Gerstein, et al., 1994), the Drug Abuse Treatment Outcomes Study (DATOS, Fletcher 1997; Hubbard *et al.*, 1997; Simpson et al., 1997, Anglin *et al.*, 1997), the Treatment Outcome Prospective Study (TOPS, Hubbard *et al.*, 1989), the Drug Abuse Reporting Program (DARP, Sells, et al., 1976; Simpson and Friend, 1988), and individual studies of facilities such as Phoenix House (DeLeon, Wexler, and Jainchill, 1982), the California Rehabilitation Center (Anglin, 1988), and a variety of methadone maintenance programs (Hargreaves, 1983; Dole, 1989).

None of the cited studies was designed to represent the treatment system as a whole. Each was a selective sample governed by a standard such as participation in special Government funding efforts. In 1990, the National Institute on Drug Abuse (NIDA), the predecessor agency to the Substance Abuse and Mental Health Services Administration (SAMHSA), was asked by the Office of National Drug Control Policy (ONDCP) to conduct a study that would go further toward the ideal of a national representative sample of the treatment system. The first stage of the response to this request was the Drug Services Research Survey (DSRS, Batten *et al.*, 1993), a representative probability sample survey drawn from a comprehensive list of organized substance abuse treatment programs. The DSRS collected basic facility-level information and successfully abstracted more than 2,200 program client records of individuals discharged during 1989-90 from 120 randomly selected, cooperating treatment facilities, in order to provide a picture of treatment participation and client characteristics.

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The Services Research Outcomes Study (SROS), whose results are reported here, was designed as a client outcome study based on the DSRS program sample. SROS staff from the National Opinion Research Center (NORC) at the University of Chicago collected extensive program and client data, completed interviews, and collected urine specimens from a representative sample of individuals discharged from 99 of the 120 DSRS facilities. Out of 3,047 clients selected for follow up, 1,799 interviews were completed five to six years after discharge from the SROS “index” treatment episode, and another 277 clients were found to be deceased, accounting for 68 percent of all those in the SROS sample. Although the SROS sample is not perfect, it is far closer to accurately reflecting the national treatment system as a whole than any other outcome study sample to date, and it provides the first opportunity to examine representative extended outcomes of substance abuse treatment.

SROS interviews, conducted during 1995 and 1996, covered the client’s entire life span, with special attention to their behavior and circumstances during the five years before entry to the index (SROS) treatment in 1989-90 and *after leaving* that treatment until the time of the interview. The SROS client interview included questions on patterns of drug consumption (including alcohol use), criminal activity, employment, health, social support, and other behavior relevant to treatment goals. The interview and other aspects of the research were designed to answer the following major questions:

- Who entered treatment? Did differences in characteristics at admission, such as stated reasons for entry into treatment, influence client outcomes?
- Which type of treatment (among the four kinds studied) was most effective, for what types of clients?
- How many treatment episodes did clients typically undergo before entering the SROS index treatment episode?
- To what extent did drug use and criminal behavior decline and employment increase during the five years after the SROS treatment episode, compared with the earlier period?
- What were the correlates of treatment outcomes, and what was the relationship between pre-treatment variables and treatment variables?
- How did death rates for those discharged from drug treatment compare with death rates for the U.S. population, and what characteristics were associated with post-treatment mortality

In short, SROS provides the best nationally representative data, with an extended time perspective, to be used to answer the question: “Does treatment work?”

## ORGANIZATION OF THE REPORT

Chapter II presents an overview of the methods used in SROS, describing the history and characteristics of the program sample, the characteristics of **the** respondent sample, the extent of bias that might be due to nonresponse at each sampling stage, and the techniques used in the study analysis. The chapter also compares SROS with other studies. More detailed descriptions of the study methods are presented in Appendix A.

Chapter III describes the study findings. This chapter covers the demographic characteristics, drug use, criminal justice history, and lifestyle characteristics of the national treatment population. It then presents the self-described reasons for seeking admission to the SROS index treatment episode and compares behaviors and characteristics of treatment clients in the five years before and after the SROS “index” treatment episode. Chapter III also presents national estimates of the results of treatment. In addition, the chapter also tests **regression-**based statistical models with pretreatment, in-treatment, and post-treatment components associated **with** the level of treatment outcome. Finally, Chapter III enumerates and describes characteristics and correlates of deaths within the five years after the SROS treatment episode.

More detailed tabular data on analytic results appear in Appendix B. References are presented in Appendix C.

## II. METHOD

### HISTORY OF THE SROS SAMPLE

Two data collections frame the Services Research Outcomes Study (SROS): the Uniform Facility Data Set/National Drug and Alcoholism Treatment Unit Survey (UFDS/NDATUS) represents the first data collection effort, and the Drug Services Research Survey (DSRS) the second.

- UFDS/NDATUS is a national census of substance abuse treatment and prevention facilities that covers every community-based prevention and treatment facility known to the Federal government. The census includes information on the type and scope of services offered, clients treated, treatment capacity, demographics of clients, characteristics of facility staff, and sources of funding. UFDS/NDATUS collects information through State agencies, using the National Facility Register, the national directory of programs.
- DSRS was designed to supplement UFDS/NDATUS with more data sought in 1990 at the request of the Office of Management and Budget (OMB) and the Office of National Drug Control Policy (ONDCP). Within the universe of facilities for UFDS/NDATUS, called the Substance Abuse Facility Identification System (SAFIS), DSRS staff drew a stratified random sample of 1,183 treatment programs and in Phase I interviewed program directors by telephone to confirm and augment facility information. DSRS staff then selected for Phase II a representative subsample, stratified by facility type, of 120 programs. Site visitors abstracted information from client records on demographic characteristics, prior treatment history, drug use history, treatment characteristics, and discharge status of about 20 persons discharged from treatment at each sampled treatment facility between September 1, 1989, and August 31, 1990.

A detailed description of the DSRS, subsequent SROS facility universe, the facility sample, and client sample is presented in Tables 2-1 and 2-2. The April 1990, 10,649 facilities constituted the known substance abuse treatment facilities in the continental United States that served as the sampling universe. DSRS first sampled 1,803 facilities for its Phase I survey of facilities; 1,442 proved eligible (as active treatment facilities in the continental United States), and 1,183 of the eligible facilities responded, comprising 138 hospital inpatient facilities, 185 residential, 80 outpatient methadone detoxification/maintenance, 372 outpatient drug-free, 91 alcohol-only, and 317 whose facility type was unknown.

Since DSRS' focus was on clients discharged from drug treatment facilities, the alcohol-only and treatment-type unknown facilities were excluded from the Phase II facility sample frame.

**Table 2-1. Development of the SROS Client Sample**

	Total	Principal Facility Type					
		Hospital Inpatient	Residential	Outpatient Methadone	Outpatient Drug-Free	Alcohol Treatment Only	Treatment Unknown Other
Known Facility Universe - April 1990 <sup>1</sup>	<b>10,649</b>	<b>693</b>	1,172	467	<b>2,953</b>	<b>1,291</b>	<b>4,073</b>
DSRS Phase I-I 990							
Stratified Facility Sample	1,803	<b>179</b>	216	103	526	<b>187</b>	<b>592</b>
Screened for Eligibility	1,760	178	213	102	520	<b>183</b>	<b>561</b>
Eligible Facilities	1,442	166	202	93	449	<b>114</b>	<b>418</b>
<i>cumulative response rate</i>	100%	100%	100%	100%	100%	<b>100%</b>	<b>100%</b>
Facility Respondents	1,183	138	185	80	372	<b>91</b>	<b>317</b>
<i>cumulative response rate</i>	82%	83%	92%	86%	83%	<b>80%</b>	<b>76%</b>
DSRS Phase II—1991 <sup>2</sup>							
Subsample of Facilities	146	40	34	38	34		
Cooperating Facilities for Abstraction	120	29	32	31	28		NONE SAMPLED
<i>cumulative response rate</i>	67%	60%	86%	70%	68%		
Records Abstracted	2,222	571	615	549	487		
Facility Type Reported on the Abstract <sup>3</sup>	2,182	421	496	292	500	255	138 80
<b>SROS—1 995</b>							
Recapture of Cooperating Facilities	<b>99</b>	<b>22</b>	<b>27</b>	<b>26</b>	<b>24</b>		
<i>cumulative response rate</i>	56%	46%	73%	<b>59%</b>	58%		
Records Abstracted <sup>4</sup>	3,047	758	779	<b>735</b>	775		
Eligible After Screening <sup>5</sup>	3,033	757	773	<b>732</b>	771		NONE SAMPLED
Deceased	277	107	43	<b>85</b>	42		
Eligible for Interview	2,756	650	730	<b>647</b>	729		
Interviewed	1,799	441	464	<b>423</b>	471		
<i>cumulative response rate</i>	38%	33%	48%	<b>41%</b>	39%		
Respondent-Reported Facility Type <sup>3</sup>	1,799	700	326	217	556		

<sup>1</sup> Source: Table 1, *Drug Services Research Survey (DSRS) Final Report: Phase I*, February 22, 1993.

<sup>2</sup> Source: Tables 2 and 4, *Drug Services Research Survey (DSRS) Final Report: Phase II*, February 12, 1992.

<sup>3</sup> Facilities with more than one type of unit were classified according to their principal facility type (the type reporting the largest number of cases). Records for abstraction at times were drawn from more than one type within a multitype facility; and interviewed clients at times identified the treatment episode as occurring within a facility type other than the principal one.

<sup>4</sup> In order to meet precision requirements for the interview data, the probability sample of records abstracted was increased to 3,047.

<sup>5</sup> Of the 3,047 abstracted records, 12 case records were determined not to cover the SROS treatment episode, 1 case was not actually admitted to treatment, and 1 record was a duplicate, for a total of 14 ineliable records.

**Table 2-2. Detailed Disposition of 3,047 Abstracted Client Records**

	Total	Facility Type			
		Hospital Inpatient	Residential	Outpatient Detox/Main-tenance	Outpatient Drug-Free
Client Records Abstracted	3,047	758	779	735	775
	100%	100%	100%	<b>100%</b>	100%
Interview Completed	1,799	441	464	423	471
	59%	58%	60%	58%	61%
Deceased	277	107	43	85	42
	9%	14%	6%	12%	5%
Not Located	558	<b>109</b>	<b>166</b>	<b>150</b>	<b>135</b>
	18%	14%	21%	20%	17%
Other <sup>1</sup>	413	<b>101</b>	<b>106</b>	<b>77</b>	<b>127</b>
	14%	13%	14%	10%	16%
<b>SROS Response Rate<sup>2</sup></b>	68%	72%	66%	69%	67%

<sup>1</sup> "Other" includes respondents who were ineligible after screening of the abstracts (see Table 2-1 note 5), refused to perform an interview, agreed to be interviewed but broke all appointments, were in locations that were not accessible for interviewing in person or by telephone, or were too ill or disabled to conduct an interview.

<sup>2</sup> Interviewees and deceased are considered as completed cases in calculating the SROS response rate.

DSRS Phase II randomly selected 146 facilities from the DSRS Phase I facility respondents and abstracted 2,222 client records from 120 facilities in the four strata of: hospital inpatient, residential, outpatient detoxification/maintenance, and outpatient drug-free treatment.

The DSRS sample of 120 facilities was the base from which the SROS sample was contacted. When SROS staff approached the 120 facilities to seek enrollment in the SROS protocol of record reabstraction, sample supplementation, and client interviews, a dozen facilities were no longer operational and a larger number had changed ownership or leadership in the interim. SROS gained the cooperation of 99 of the 120 DSRS facilities. SROS supplemented the DSRS client sample target from these 99, increasing the sample from 2,222 to 3,047 clients who had been discharged in the 12 months ending August 31, 1990.

Of the 3,047 clients whose records were abstracted during 1994, 2,489 clients (82 percent) in the sample were located during the nine month 1995-1996 field period. A detailed description of field data collection is presented in the Appendix A. Nine percent (277 clients) of the sample of 3,047 had died between discharge from drug treatment and the SROS field period. Twelve percent (351 clients) refused or were unavailable for interview before the end of the interview period, less than one percent (14 clients) proved ineligible for the study, and 1,799 were successfully interviewed, comprising 59 percent of the total sample, 65 percent of those alive and eligible for the study, and 82 percent of those alive and located during the field period. The remaining 558 clients (18 percent) were not located before time and resources for fieldwork expired.

There is a difference between simple response rates and cumulative response rates. The overall completion rate was 65 percent when those who died before the field period are excluded. The completion rate for subgroups of the sample are: 63 percent for males, 70 percent for females, 65 percent for white non-Hispanics, 66 percent for black non-Hispanics, and 54 percent for Hispanics.

When those who died before the field period are counted as completions, the overall completion rate was 68 percent. The completion rate for subgroups of the sample are: 67 percent for males, 72 percent for females, 68 percent for white non-Hispanics, 69 percent for black non-Hispanics, and 59 percent for Hispanics.

When SROS is viewed as part of a longitudinal study, following DSRS Phase I, DSRS Phase II, the recapture of DSRS facilities for SROS, and the completion of cases for SROS, the cumulative response rate would be the product of each of the four individual response rates. [NOTE: The computation is  $(.82)(.82)(.83)(.68) = 38$  percent as shown on Table 2-1.]

Whenever respondents to a study are not 100 percent of those eligible for inclusion, the respondents' representativeness' is always an important issue. The following section analyzes the extent of bias introduced by nonresponse, comparing the clients interviewed with those not interviewed.

## NONRESPONSE ANALYSIS

The project team used data collected during abstraction of patient records to compare the characteristics of SROS respondents and nonrespondents, as presented in Table 2-3.

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<sup>1</sup> The question centers on whether the respondents who were not included were lost to **followup** for essentially random and unconnected reasons. If so, the loss of those data would not introduce any distortions or biases into the data, but would only result in some loss in precision due to a smaller sample size than might otherwise have been achieved.

**Table 2-3. Comparisons of sample respondents/nonrespondents, using data from administrative records of cooperating providers (N=2,770)**

Statistic	Respondents (Base n max= 1,799)		Nonrespondents (Base n max= 971)	
	$\mu$	<i>n</i>	$\mu$	<i>n</i>
<i>Panel 1. Means</i>				
Length of sample episode (in months)	4.4	1,778	4.0	958
Age at admission (in years)	* 30.6	1,747	31.7	950
Number of different treatment services received during this episode	3.3	<b>1,698</b>	<b>3.5</b>	920
Number of treatment episodes in lifetime	3.3	937	3.0	504
<i>Panel 2. Percentages</i>				
	<b>%</b>	<i>n</i>	<b>%</b>	<i>n</i>
Female	* 30.4	1,794	<b>24.9</b>	<b>969</b>
Black (non-Hispanic)	29.3	1,702	28.7	<b>900</b>
American Indian/Alaskan Native	1.5	1,702	1.0	<b>900</b>
White (non-Hispanic)	67.7	1,702	68.7	<b>900</b>
Hispanic	* 12.2	1,011	20.1	532
At least high school education	59.0	1,589	62.2	855
Prison or jail record prior to admission	49.7	1,026	49.7	563
DWI/DUI prior to admission	45.7	1,045	50.3	555
Other arrests prior to admission	70.7	1,222	68.2	682
Self as primary referral source	29.0	1,650	28.3	893
Legal system as primary referral	25.7	1,650	22.7	893
Public as primary payment source	28.8	1,439	32.0	762
Planned treatment greater than 25 days	69.0	598	67.2	344
Psychiatric history at admission	26.1	1,202	24.3	635
Employed at admission	39.1	1,621	37.9	890
Chronic medical condition at admission	29.2	1,254	33.2	660
Cocaine as primary drug at admission	15.5	1,360	17.0	746
Heroin as primary drug at admission	14.3	1,360	16.5	746
Alcohol as primary drug at admission	48.6	1,360	46.3	746
Prescribed medications during treatment	55.1	1,374	56.4	768
Length of treatment less than 25 days	64.0	1,778	60.6	954
Tested for drug or alcohol abuse during sample episode	61.8	1,213	66.0	<b>700</b>
Ever used needles to inject drugs	* 43.5	928	49.9	<b>521</b>
Completed treatment plan before discharge	50.2	1,738	48.4	<b>939</b>

See footnotes at end of table

**Table 2-3. Comparisons of sample respondents/nonrespondents, using data from administrative records of cooperating providers (N=2,770)**

Statistic	Respondents (Base n max= 1,799)		Nonrespondents (Base n max= 971)	
	%	<i>n</i>	%	<i>n</i>
<i>Percentages</i>				
Aftercare plan stated in record	65.6	1,132	67.8	599
Physician notes at admission	* 66.3	1,535	70.7	849
Physician notes at discharge	41.3	1,411	45.6	757
Physician notes at any other time	* 55.2	1,487	59.8	805
Hospital inpatient facility	24.5	1,799	21.6	971
Residential facility	25.8	1,799	28	971
Outpatient methadone maintenance facility	23.5	1,799	23.4	971
Outpatient non-methadone facility	26.2	1,799	27	971

Note: Significant differences between means in Panel 1 were based on two-tailed t tests.  
 Significant differences between percentages in Panel 2 were based on &i-square tests of independence.  
 The table omits 277 cases from the total sample (3,047) who were known to be deceased [i.e., 277 + 1,799 + 971 = 3,047].

\* Difference between respondents and nonrespondents is significant, with  $p < .05$ .

Source: Drug Services Research Study/Supplemental Sample Abstraction conducted in 1994 at the 99 participating facilities.

The differences, though statistically significant, were small. An analysis of 36 variables collected by abstraction from client records — virtually all the data pertinent to client characteristics or individual treatment pathways — indicates very few significant differences (at the .05 level) between respondents and nonrespondents. Respondents averaged in age about one year younger (NS<sup>2</sup>) than nonrespondents, had a *lower* rate with physician notes at admission (NS), a *lower* rate with physician notes at any other time (NS), a *higher* rate of female respondents, a *lower* rate of Hispanic respondents, and a *lower* rate who used needles to inject drugs (NS). Given the small numbers and size of these differences, the study team did not adjust the data for nonresponse bias.

### COMPARING BEHAVIOR BEFORE AND AFTER THE SROS TREATMENT EPISODE

The effects or outcomes of treatment are evaluated in SROS through two methods: “before/after” (or “pretest/post-test”) comparisons and regression analysis. This section presents an overview of the two methods. A more detailed description of the methods is presented in Appendix A.

**Before/After Analysis.** The before/after design compares behaviors measured before and after an intervention. Specifically, SROS compares the behaviors and characteristics of clients discharged from the index SROS treatment episode (i.e., the episode selected from records of

<sup>2</sup> (NS) These differences are not significant at the .05 level when those who died are classified with respondents.

clients discharged between September 1, 1989, and August 31, 1990) by comparing *group rates of behavior* (e.g., drug use, criminal activity, employment, living arrangements, or physical health) during the five years before and after the index treatment episode.

Every outcome examined is one on which individuals could change for the better or worse, and therefore, the group and subgroup rates could increase or decrease — i.e., the group become better or worse off — after treatment.

**Regression Analysis.** To help relate outcomes to associated variables, two types of regression analyses are used. For continuous outcome variables, “ordinary least-squares” regression models are used. For dichotomous (binary) outcome variables, SROS uses logistic regression models.

The following model is employed for continuous variables:

$$Y_{\text{AFTER}} = \alpha + \gamma Y_{\text{BEFORE}} + \sum \beta_i X_i + \sum \beta_{ii} X_{ii} + \dots + \sum \beta_k X_k + e$$

where  $Y_{\text{AFTER}}$  denotes the value of a continuous outcome variable reported for the five years after the SROS treatment period;  $Y_{\text{BEFORE}}$  denotes the value of the same variable reported by the same individual for the five years before the SROS treatment period;  $X_i$ 's are other explanatory variables; Greek letters represent regression coefficients; and “e” is a random error term.

The model is a conditional change model, relating an individual's outcome after treatment to his/her status before treatment.

For dichotomous variables (i.e., variables that alternate between two values [e.g., used drugs in five-year period after treatment or did not use drugs in five-year period after treatment]), **logit** analysis is employed, using the following “unified model”:

$$\text{logit}(D2) = b0 + b1 \cdot D1 + \dots + b2 \cdot X + b3 \cdot Z$$

Where D2 denotes the after-treatment measurement of the dichotomous outcome (i.e., D2 = 0 if no and D2 = 1 if yes), and D1 denotes the before-treatment period of the same dichotomous outcome, (i.e., D1 = 0 if no and D1 = 1 if yes). More detailed descriptions of these models are presented in Appendix A.

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## COMPARISON OF SROS AND OTHER STUDIES

Research on the effectiveness of drug treatment has generally focused on samples of individuals from purposively selected, publicly funded facilities. Such studies include the following:

- Drug Abuse Reporting Program (DARP) (Sells and Simpson, 1974, 1979, 1981), which followed a cohort of 4,100 clients admitted to **treatment during** 1969-1972 with two interviews, including a **12-year followup** of 700 opioid users who entered treatment from 1969 to 1972;
- Treatment Outcome Prospective Study (TOPS) (Hubbard *et al.*, 1989), which followed 10,000 clients admitted to 41 drug treatment programs in 10 cities from 1979 to 1981;
- Drug Abuse Treatment Outcome Study (DATOS) (Hubbard *et al.*, forthcoming), which followed a purposive sample of 10,000 clients admitted to 99 treatment facilities in 11 cities in the 1990s and interviewed about 3,000 clients one year after discharge from treatment; and
- National Treatment Improvement Evaluation Study (NTIES) (Gerstein *et al.*, 1997), which followed 6,600 clients treated in a Federal demonstration program and analyzed outcome data for 4,400 clients.

DSRS and the California Drug and Alcohol Treatment Assessment (CALDATA) are unusual because they used a probability sample of facilities and individuals. In 1990, DSRS abstracted records for a random sample of 2,222 individuals discharged from drug treatment in the United States between September 1, 1989, and August 31, 1990. In 1992, CALDATA abstracted records for a random sample of 3,055 individuals discharged from drug treatment in California, interviewing 1,826 of them to compare their behavior one year before and one year after treatment.

SROS builds on both of these studies. The SROS sample of discharges includes 1,706 of the 2,222 DSRS discharges (77 percent) plus an additional 1,341 discharges randomly sampled from 32 of the larger facilities to make the SROS sample more nationally representative of clients discharged from treatment — the DSRS sample being based on 20 clients **from** every facility.

Table 2-4 compares the distribution of clients in SROS and three other significant surveys conducted around the same time period: the 1993-1994 NTIES; the **1991-1993** DATOS; and DSRS, which drew a stratified national probability sample of 120 programs and abstracted treatment records for clients discharged during 1989-1990.

Of these surveys, NTIES and DATOS are purposive surveys; DSRS and SROS are probability samples. The NTIES sample was selected within a framework of competitive award recipients seeking to innovate in their clinical activities; the DATOS sample was selected from standard,

stable treatment facilities. DSRS and SROS were intended to represent the national population of facilities and clients.

The samples differ in a number of other respects as well. For example, about 25 percent of NTIES clients were in correctional settings, that were not included in any of the other sample frames. Five percent of SROS clients were in outpatient methadone versus 15 percent of DATOS clients and five percent of DSRS clients. Thirty-seven percent of SROS' weighted national estimate of clients were discharged from hospital inpatient clinics, whereas only 16 percent of DSRS' national estimate of clients were hospital inpatients; SROS estimates that 18 percent of national discharges were from residential treatment versus 26 percent projected by DSRS. These differences are likely due to the different classification methods of the two studies. DSRS classified clients according to the predominant modality of the facility as well as the client's record at the facility while SROS used the client's statement about modality. In addition, 26 percent of the DSRS national estimate was attributed to discharges from facilities with mixed modes (e.g., alcohol and others).

Table 2-4. Distribution of Clients by Modality in NTIES, DATOS, DSRS, and SROS

	NTIES 1993-94		DATOS 1991-93		DSRS 1989-90			SROS 1989-90			
	Admissions Sample		Admissions Sample		Discharge Sample		Weighted National Estimate of Annual Discharges	Responding Clients		Weighted National Estimates of Discharges	
	Number	Percent	Number	Percent	Number	Percent		Percent	Number	Percent	Number
Outpatient Methadone	514	8	1,540	15	292	13	5	217	12	47,871	5
Outpatient Nonmethadone	2,107	32	2,574	26	500	23	27	556	31	387,375	40
Hospital Inpatient	1,209	18	3,122	31	421	19	16	700	39	357,954	37
Residential	1,109	17	2,774	28	496	23	26	326	18	173,811	18
Correctional	1,654	25									
Mixed Modes (alcohol only, unknown)					473	22	26				
<b>Total</b>	<b>6,593</b>	<b>100</b>	<b>10,010</b>	<b>100</b>	<b>2,182</b>	<b>100</b>	<b>100</b>	<b>1,799</b>	<b>100</b>	<b>967,012</b>	<b>100</b>

NOTE: The components of the DSRS mixed modes are described in Table 2-1.

### III. FINDINGS

#### INTRODUCTION

Scientific research on the outcomes of treatment programs for drug abuse, drug dependence, and related problems (more concisely, drug treatment) date back at least to the 1920s, when in the aftermath of the Harrison Narcotic Act of 1914, morphine maintenance clinics were established by physicians in a number of U.S. cities. These clinics were meant to serve individuals addicted to opiates, whose previous supply sources were closed by enforcement but who were unable or unwilling to remain opiate-free. Studies of clients in these clinics were the first in an irregular series of studies, dating from the 1930s through the early 1960s, in which the clients of one or a small number of treatment facilities were followed up at brief intervals after admission to learn about the results of treatment. Such studies became much more common after the early 1960s.

Single-site, short-term studies can provide useful evidence about the potential efficacy of drug treatment as an available instrument of drug control policy—that is, whether an intervention with a selected population of impaired drug users can reduce their level of continued abuse and dependence. Such studies do not go very far, however, toward answering the most salient and immediate policy questions about treatment, such as how much the treatment costs, how many clients it reaches, what overall level of effectiveness it has, and what directions can be taken to improve the overall performance of the system. These are simple questions to phrase, but the effort to find clear and accurate answers to them has proven to be a complex undertaking. The sheer diversity and scale of the national treatment system, with one million or more clients each year who present every type of drug problem and receive multiple types of treatment in more than 10,000 facilities, defy easy characterization. Moreover, the character of drug problems and the tendency of these problems to change characteristically over time present serious obstacles to the precise calculation of a simple, meaningful “success rate.” Instead, an understanding of how and how well treatment works requires a steady accumulation and cross-checking of findings from many sites, ideally chosen to reflect accurately the many facets of the treatment system and clients seen within it.

The Services Research Outcomes Study (SROS) is the most recently completed in a series of large, multisite, national **followup** studies developed by Federal agencies and their research partners since the late 1960s to address the overarching policy questions about drug treatment. The first study of this type was the Drug Abuse Reporting Program (DARP). This study set the agenda in many ways for studies to follow. The DARP staff collected systematic data at admission and at regular intervals during treatment from nearly 44,000 clients in 52 federally funded treatment facilities in 24 States between 1969 and 1973. The DARP investigators referred to this client population as “a highly representative sampling of opiate addicts, drug abusers, and treatment approaches observable in the United States during the four-year period covered” (Sells, 1974); however, the rapidly expanding nature of the treatment system and the lack of any relevant

national sampling frames (for treatment facilities, clients, or users) at the time make this a difficult claim to evaluate.

The original DARP study collected a great deal of data from clients at admission and during treatment on drug and alcohol use; criminal involvement; employment; and social, psychological, and physical status and functioning. However, the study collected no information about post-treatment outcomes. Subsequently, the DARP staff followed up a stratified random sample of clients from 25 facilities approximately six years after treatment and completed 3,100 multidimensional interviews from the 4,100 clients sampled, for a 76-percent completion rate. A further stratified subsample from the six-year **followup** group, composed of clients who had been daily opioid users at the time of admission to 18 of the facilities, was followed up again 12 years after treatment by the same DARP team, who completed 500 interviews from a sample of 700, for a 70-percent completion rate. (In addition, in the intervening six years, 52 deaths were recorded.)

The DARP studies provided a model for using repeated multidimensional interview responses to assess treatment outcomes and a long-term timeframe to permit the measurement of behavior across an extended “treatment career.” Three major multisite national outcome studies have been conducted since DARP, but no other, to this point, has used such an extended timeframe. These studies are the Treatment Outcomes Prospective Study (TOPS), which included a three-year **followup** of individuals admitted to treatment during 1979–1981; the Drug Abuse Treatment Outcomes Study (DATOS), covering a 1991–1993 admission cohort, for which a one-year **followup** has been completed to date; and the National Treatment Improvement Evaluation Study (NTIES), covering a 1993–1994 admission cohort, for which a one-year **followup** study has been completed. Although each of these studies was national in scope, each began with a purposive sample rather than a systematic probability sample of treatment facilities. Both TOPS and DARP selected ten large cities (the same city in seven of ten instances), and staff from each study successfully recruited a handful of programs in each city to participate. The NTIES staff, in contrast, began with a pool of hundreds of facilities, located in nearly every U.S. State and territory, that were participating in 1990–1991 demonstration grant programs of the Center for Substance Abuse Treatment. All of the recipient facilities were recruited by the NTIES staff to provide facility-level information on services, staffing, and costs; about one in ten of these facilities was then purposively selected for inclusion in the largest client **followup** study to date.

Alone among the studies cited, SROS began with an enumerated national listing composed of more than 10,000 facilities known to provide drug services; the study then used stagewise stratified random sampling to select facilities and clients. Thus, the current report is able to weight every participant in the study to represent an appropriate number of clients in the original sampling frame and therefore estimate characteristics and outcomes that are statistically representative of treatment clients in the United States as a whole during a five-year **followup** interval. Although the loss of facilities and clients in the sample at each stage, beginning with Drug Services Research Survey (DSRS), introduces uncertainty and possible bias into these estimates, as discussed in Chapter II and Appendix A, these results

come closer than those of any previous study to providing a detailed, national **population-**based profile of drug abuse treatment outcomes.

Based on the systematic multistage probability sample described in Chapter II (and detailed further in Appendix A), the data presented in this chapter represent an estimated population of approximately 967,000<sup>1</sup> clients who were discharged from treatment at least once between September 1, 1989, and August 31, 1990. From a sample of 3,047 clients drawn from program records, this chapter reports on data from the 1,799 clients followed up and interviewed during 1995 and 1996, an average of 5.5 years after treatment, and analyzes abstracted data from clinical records on the 277 clients determined to have died between treatment discharge and followup, who represent an additional estimated population of 93,000 clients discharged from substance abuse treatment during 1989-1990.

This chapter is separated into four major sections. The first two sections characterize the two major component elements of the study: First, the SROS sample of treatment facilities as they functioned in 1990 and in subsequent years, and second, estimates of the characteristics of all the clients in the sample before and during their treatment episodes in 1989-1990. The chapter then analyzes changes in client behavior and circumstances in the five years before and after treatment, assessing differences along each of the major domains (drug and alcohol use, criminal activity, health, and social functioning) for the client population as a whole and among distinct subgroups. This third section includes statistical analyses (using multiple regression techniques) of particular correlates of change in behavior and circumstances, providing statistical evidence on the association between treatment and five-year outcomes. The final section analyzes data on mortality during the **followup** period, comparing estimated death rates among the 1989-1990 client population with those of the general population and using multiple regression techniques to explore the correlates of mortality among the client population.

## CHARACTERISTICS OF TREATMENT FACILITIES

As discussed previously and in Appendix A, DSRS drew samples to represent an appropriate number of clients from each of four standard types of facilities: hospital inpatient, residential, outpatient methadone, and outpatient nonmethadone **treatment**.<sup>2</sup> When the SROS staff attempted to re-engage the 120 facilities from DSRS Phase II for the SROS data collection plan three years after the last DSRS contact, 12 facilities were no longer in operation, and many of the remainder were under new ownership or administration (the latter refers to publicly owned facilities reporting to a different agency). As a result of refusals, inaccessibility of records, and logistical obstacles, 21 of the 120 DSRS Phase II facilities (17 percent) did not participate in SROS. Among the 99 facilities that did participate, a

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<sup>1</sup> This estimate is rounded to the nearest thousand, and this notation continues throughout the text.

<sup>2</sup> In facilities housing more than one type of treatment modality, the facility was classified as the type that had the highest number of reported admissions during 1989-1990.

substantial degree of organizational change had taken place, as reported in facility director interviews completed in 1994 (see Table 3-1). About one-third of the participating facilities changed ownership or administration between 1990 and 1994, with a handful of facilities changing more than once. Annual staff turnover averaged about 23 percent, and key personnel had been with each facility an average of about seven years.

Facility director reports of staffing and service cost patterns make clear some of the differences among the four treatment types. The hospital inpatient facilities had the highest reported ratio of staff hours to clients, with much higher ratios of medical staff (primarily nursing personnel) than other facilities: Medical staff in hospital inpatient facilities spent an average of 4.2 staff hours per week per actively enrolled client (hours/week/client), which was an order of magnitude greater than the staff hours spent in methadone and residential facilities and 100 times greater than in the outpatient nonmethadone facilities. The hospital inpatient facilities also reported a higher ratio of nonmedical clinician hours at 2.5 staff hours/week/client, compared with 0.6 to 1.0 clinician hours/week/client in the other facilities. Hospital inpatient facilities reported surprisingly low ratios of administrative and support personnel, comparable to staffing ratios at the two types of outpatient facilities; however, these low reported ratios probably reflect the high degree of centralization of such functions in hospitals, which takes these staff out of the purview of the facility director. Residential facilities reported much higher ratios of administrative and support personnel than the two outpatient types, which one would expect in view of the 24-hour, generally freestanding nature of these facilities.

Because staffing is the major cost element in every facility type, the differences in staffing patterns, along with other facility differences, led to substantial differentials among facility types in charges per unit of service (see Table 3-2). One day of treatment cost an average (median) of \$400 at the hospital inpatient facilities that reported such cost rates, but the median cost per day was only \$55 at residential facilities, a rate quite similar to the per-visit cost in the two outpatient types of treatment. Despite variations in treatment duration (length of stay) and in the frequency of staff visits during treatment that tended to make the median revenue per patient somewhat less divergent, a substantial spread still existed: The median facility reported revenues per admitted patient of about \$3,200 in the hospital inpatient facilities, \$1,800 in the residential units, \$1,700 in the outpatient methadone units, and \$700 in the outpatient nonmethadone units. Between two-thirds and seven-eighths of these revenues were from public sources in the residential and the two outpatient facilities, while only about one-half the revenues in the hospital inpatient units were from public sources; however, **this** last comparison is vitiated by missing data on the revenues variable for nearly one-half of the participating hospital inpatient facilities.

Despite these variations in staffing and costs, facility directors reported that the four types of facilities were similar in several other attributes. About two-thirds of each type of facility allowed participants to define their own treatment goals, about one-fifth collected **followup** data, and about one-fourth of each facility type made **followup** reports available. About one-half of hospital and residential facilities and one-third of methadone units sponsored voluntary alumni groups, but almost none of the outpatient nonmethadone facilities did so.

**Table 3-1. Organizational characteristics of the four types of SROS facilities**

Characteristics	Type of Treatment			
	Hospital Inpatient	Residential	Outpatient Methadone	Outpatient Nonmethadone
Staff Stability, 1990-1994	n=22	n=27	n=26	n=24
Change in owner/administration	45%	26%	19%	33%
Number of owner/administration changes	1.2	1.14	1.2	1.25
Average annual staff turnover rate	0.25	0.23	0.19	0.23
Average tenure of key personnel, in months	88	82	94	91
1990 Staffing Patterns-Average Staff Hours/Week per Client				
Medical: Physicians, psychiatrists, nurses	4.2	0.19	0.40	0.04
Clinical (nonmedical) personnel	2.5	1.04	0.75	0.59
Administrative and support	0.53	1.68	0.52	0.32
Volunteers	0.06	0.11	0.08	0.03
TOTAL	7.29	3.02	1.75	0.98
Orientation Toward Outcome Goals				
Participants set own goals to a great extent	67%	78%	54%	74%
Sponsor voluntary alumni groups	52%	48%	32%	4%
Collect followup data	24%	22%	19%	21 A.
Generally make reports on followup data available	29%	22%	26%	20%

Source: Survey of 99 Services Research Outcomes Study facility directors, 1994.

**Table 3-2. Median costs in four types of SROS facilities**

<b>Characteristics</b>	<b>Type of Treatment</b>			
	<b>Hospital Inpatient</b>	<b>Residential</b>	<b>Outpatient Methadone</b>	<b>Outpatient Nonmethadone</b>
<b>Sample n</b>	22	27	26	24
<b>Charge/24-hour day</b> (Number of facilities)	<b>\$400</b> (17)	\$55 (16)	N/A	<b>N/A</b>
Charge/outpatient visit (Number of facilities)	<b>N/A</b>	<b>N/A</b>	<b>\$41</b> (19)	\$50 (23)
Revenue/client (Number of facilities)	\$3,196 <b>(15)</b>	\$1,835 (21)	\$1,671 (24)	\$662 (24)
Public revenue as percentage of revenue <b>(Number of facilities)</b>	49% (12)	86% (23)	75% (20)	68% (18)

Source: Survey of 99 Services Research Outcomes Study facility directors, 1994.

N/A = not applicable.

## **CHARACTERISTICS OF CLIENTS BEFORE AND DURING TREATMENT**

This section discusses the characteristics of clients using weighted data from the SROS client interviews—that is, estimating the characteristics of all clients discharged from each of the four types of treatment facilities during 1989-1990. The characteristics discussed here include those used recurrently to define subgroups throughout this chapter—that is, characteristics differentiating the client population by demographic categories, number of prior treatment episodes, main drug problem, length of stay, and reasons for seeking treatment—as well as characteristics for which repeated measures before and after treatment enable the estimation of changes associated with treatment episodes, such as changes in criminal activities and mental and physical health. (Treatment-associated changes are discussed in the subsequent section.)

### **Demographic Characteristics**

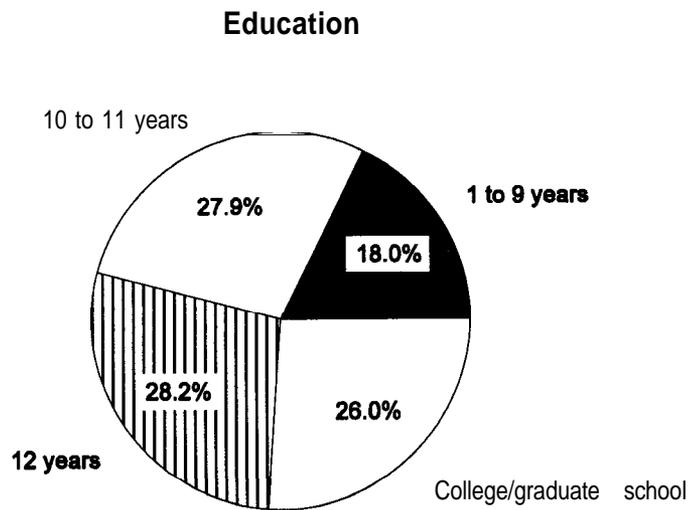
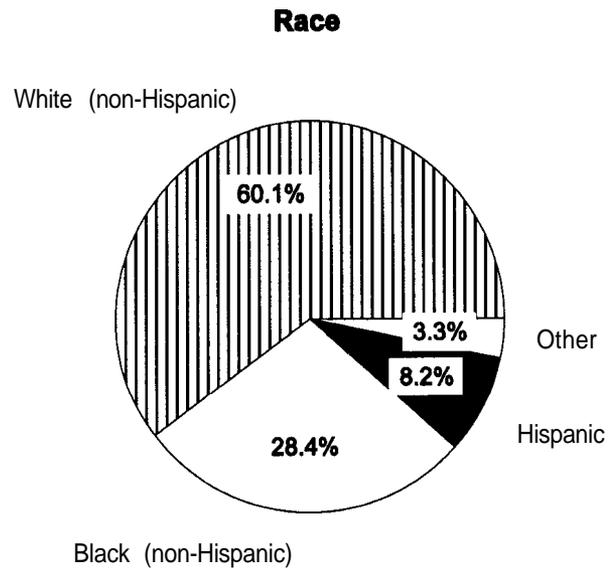
Some variation existed in the characteristics of clients among the four facility types (see Table 3-3 and Figure 3-1). About 71 percent of clients were male and 29 percent were female, and this distribution did not vary much among types of treatment except for methadone facilities, in which the distribution was **55-percent** male and **45-percent** female. Gender distribution in methadone facilities thus was much closer to the **49-percent/51-percent** gender distribution in the overall U.S. population in 1990 (see Figure 3-2). Although blacks compose 12 percent of the overall U.S. population, they are overrepresented in treatment facilities, composing one-third or more of patients discharged in all facility types except outpatient nonmethadone, in which 18 percent of the clients were black. The Hispanic subgroup closely approximated its overall percentage in the U.S. population (nine percent) but tended to be proportionately larger in outpatient facilities (12 percent) than in 24-hour facilities (five percent).

Three-fourths of all discharged treatment clients were 18 to 39 years old at the time of discharge in 1989– 1990, whereas only one-third of the U.S. population was in the same age range (see Figure 3-2). Moreover, there were differences in the estimated age distributions by type of treatment. The outpatient nonmethadone group included a much higher proportion of adolescents (those under age 18) than the other types of treatment (14 percent versus four percent), so that more than two-thirds of all treated adolescents were discharged from outpatient nonmethadone treatment, composing just 40 percent of all discharges. In addition, one-half of all residential clients were ages 18 to 29 years, compared with less than 40 percent of all other discharged clients, and about one-half of all methadone clients were ages 30 to 39 years, compared with about one-third of all other discharged clients.

About 40 percent of clients had never married, 30 percent were formerly married, and 30 percent were currently married at the time of admission. Marital status did not vary greatly **by type of treatment, except that fewer outpatient nonmethadone clients were in the**

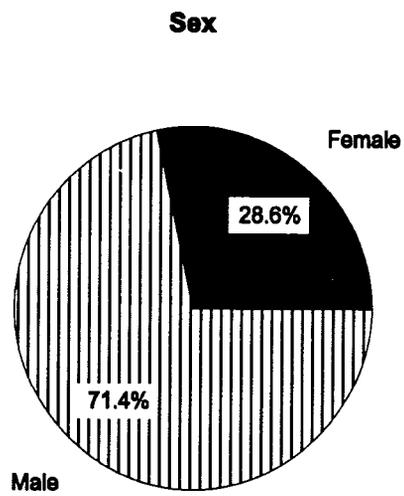
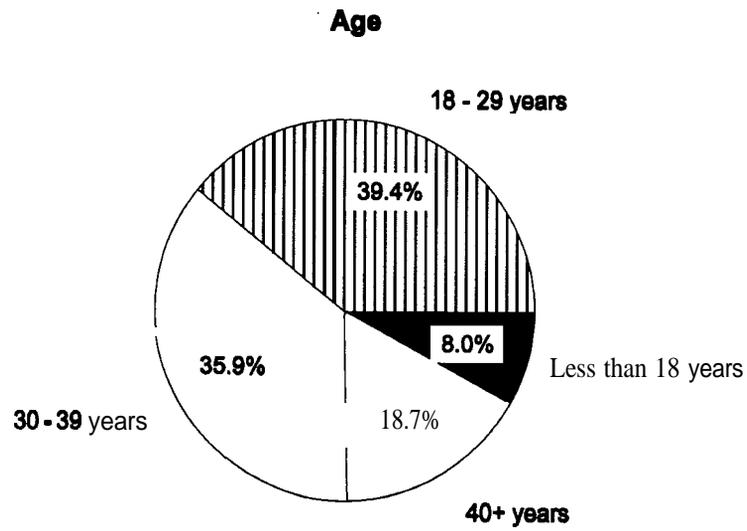
formerly married category. Finally, an estimated 18 percent of the client population had completed one to nine years of school. The remaining client population was about evenly divided among those who had completed ten or 11 years, 12 years exactly (including those with a GED), and 13 or more years (college level). There was little variation across treatment types in clients' educational attainment or their self-reported reading ability.

**Figure 3-1. Demographic characteristics of treatment clients**



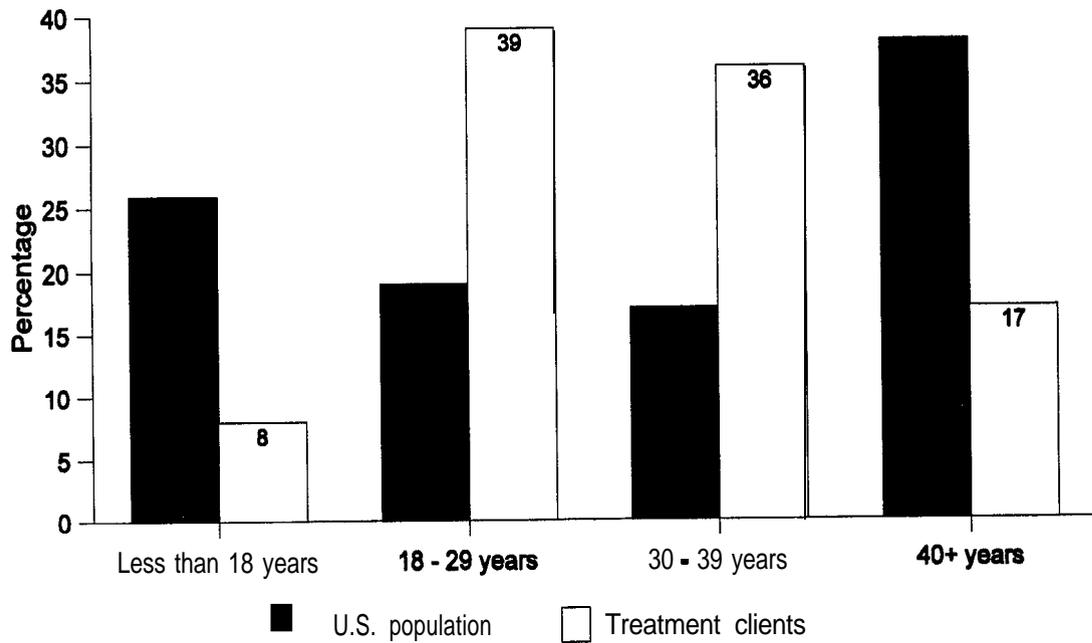
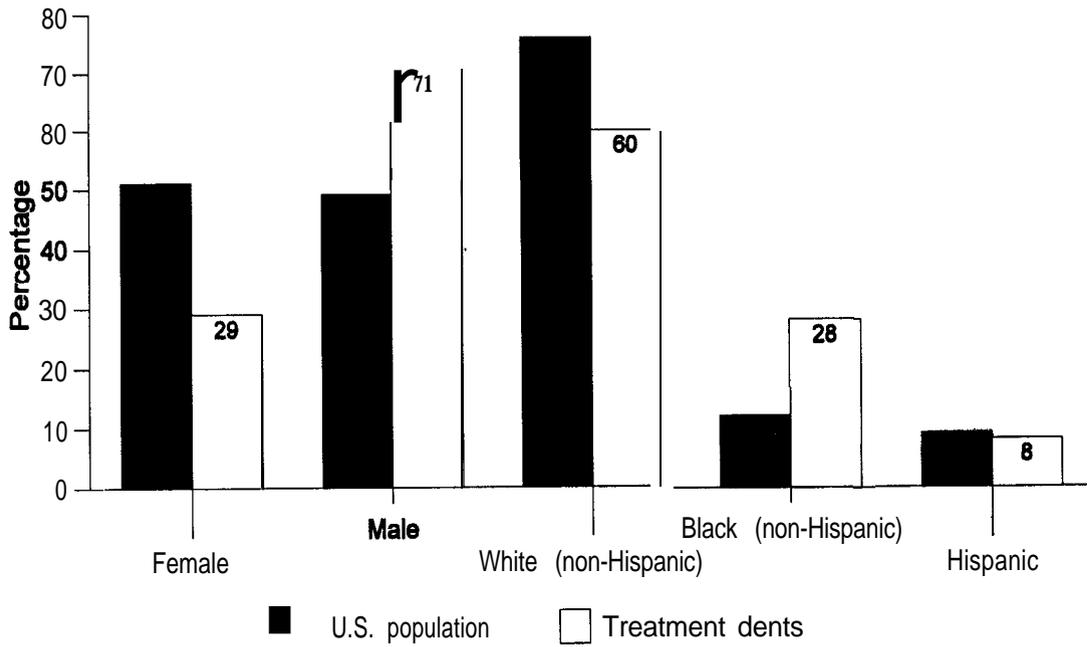
Note: Data are from Table 3-3.

**Figure 3-l. Demographic characteristics of treatment clients (continued)**



Note: Data are from Table 3-3.

**Figure 3-2. Comparison of treatment clients and the U.S. population**



Note: Data are from Table 3-3.

**Table 3-3. Percentage who reported selected characteristics before and during treatment, by type of treatment**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	Sample n	Type of Treatment				Total
		Inpatient	Residential	Outpatient Methadone	Outpatient Non- methadone	
<b>Weighted N</b>		357,954	173,811	47,871	387,375	967,012
Total	1,799	37.0	18.0	5.0	40.1	100.1
<b>Sex</b>						
Male	1,251	71.9	78.3	55.2	70.0	71.4
Female	548	28.1	21.7	44.9	30.1	28.6
<b>Race/Ethnicity</b>						
White (non-Hispanic)	1,101	56.2	59.5	46.8	65.5	60.1
Black (non-Hispanic)	499	35.4	33.4	39.3	18.2	28.4
Hispanic	137	5.4	2.9	11.5	12.8	8.2
Other	61	2.9	4.3	2.4	3.4	3.3
<b>Age at Discharge</b>						
Less than 18	156	4.3	5.0	2.1	13.6	8.0
18 - 29	674	37.6	49.5	26.4	38.2	39.4
30 - 39	660	37.2	36.4	50.0	32.7	35.9
40 +	309	21.0	9.1	21.5	15.5	16.7
<b>High School Graduate (or GED Recipient)</b>	1,790	71.8	74.8	70.3	69.7	71.4
<b>Education</b>						
1 to 9 years	306	18.8	14.2	12.4	19.6	18.0
10 to 11 years	487	28.5	30.7	29.3	25.8	27.9
12 years or GED	517	27.2	28.0	27.5	29.2	28.2
College/grad school	486	25.5	27.2	30.8	25.4	26.0
<b>Number of Prior Treatment Episodes</b>						
0	984	54.0	52.8	44.6	66.4	58.3
1 to 2	553	28.7	31.8	32.7	27.5	29.0
3 or more	244	17.3	15.5	22.7	6.1	12.8

(Page 1 of 2)

**Table 3-3. Percentage who reported selected characteristics before and during treatment, by type of treatment**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	Sample n	Type of Treatment				Total
		Inpatient	Residential	Outpatient Methadone	Outpatient Non- methadone	
<b>Used Drug During Five Years Before Treatment*</b>						
Alcohol	1,794	91.8	92.1	78.0	90.5	90.7
Marijuana	1,789	54.8	67.9	58.5	52.8	56.5
Cocaine	1,788	45.2	53.4	61.2	33.9	42.9
Crack	1,791	36.5	48.5	24.2	14.0	29.1
Heroin	1,791	14.5	9.2	82.1	6.7	13.8
<b>Marital Status</b>						
Never married	691	36.2	40.1	41.8	43.5	40.1
Previously married	525	32.0	33.3	33.8	21.5	28.1
Currently married	578	31.8	26.6	24.4	35.0	31.8
<b>Main Drug at Time of Intake*</b>						
Alcohol	1,117	64.6	61.6	30.5	69.1	64.2
Marijuana	443	17.8	31.2	10.3	32.5	25.7
Cocaine	433	26.3	25.4	36.0	17.5	23.1
Crack	382	29.2	38.9	8.5	9.4	22.0
Heroin	315	12.3	6.4	79.2	4.4	11.4
<b>Main Drug at Time of Intake</b>						
Alcohol only	500	31.2	16.3	5.1	37.1	29.6
Alcohol and illicit drugs	617	33.4	45.3	25.4	32.0	34.6
Illicit drugs only	682	35.4	38.4	69.5	30.9	35.8
<b>Length of Stay</b>						
Less than 1 week	299	37.0	17.7	6.7	4.0	19.0
1 week to less than 1 month	473	39.6	34.2	24.3	7.4	25.1
1 month to less than 6 months	661	19.5	36.7	33.6	55.8	37.7
6 months or more	345	3.9	11.4	35.4	32.9	18.3

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Individuals could respond that they used more than one or none of the listed drugs.

## Prior Treatment Episodes

More than one-half (58 percent) of the clients discharged from treatment during 1989-1990 were in their first episode of treatment. Only 13 percent reported three or more prior treatment episodes (see Table 3-3 and Figure 3-3). Although the pattern of number of prior treatment episodes was similar in each treatment type, and the two 24-hour types were nearly identical on this dimension, the outpatient facilities diverged in opposite ways: About 66 percent of outpatient nonmethadone clients but only 45 percent of methadone clients were in their first episode, whereas only six percent of outpatient nonmethadone clients but 23 percent of methadone clients were in at least their third episode.

## Main Drug Problem

Clients generally were using a “main drug” or combination of main drugs when they entered treatment; about one-half of the clients named more than one main drug. The distribution of main drugs among the four different types of treatment varied more dramatically than the distribution of client demographic characteristics among them. For example, according to the weighted survey responses (see Table 3-3), alcohol was the most common main drug leading to treatment across the four facility types, with almost two-thirds (64 percent) of all clients citing alcohol as a main drug. Overall, about one-quarter of the client population named marijuana (26 percent), cocaine (23 percent), and crack (22 percent) as main drugs, and about one-ninth (11 percent) of the clients were in treatment for heroin.

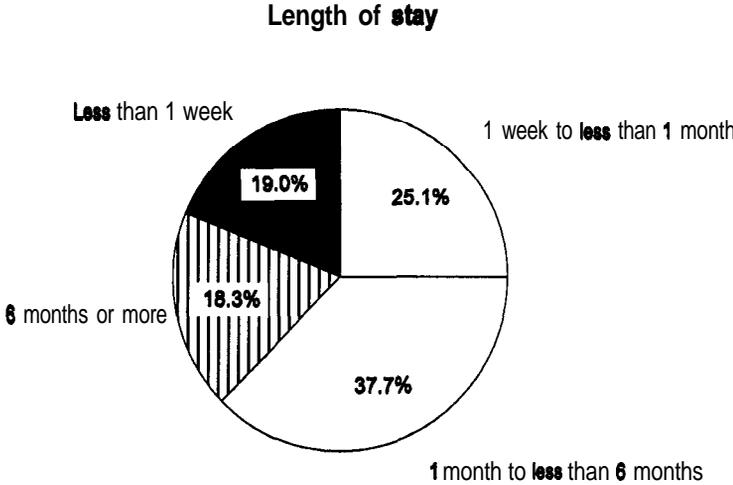
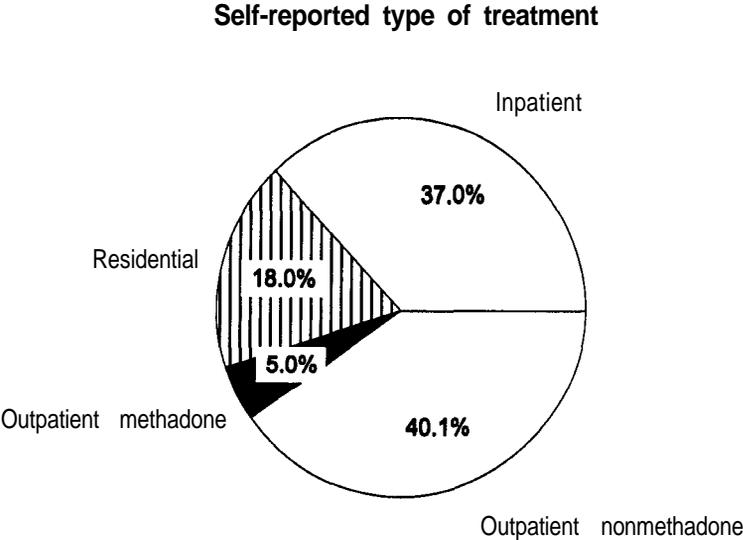
Methadone facilities were a notable exception to this general pattern. Less than one-third (31 percent) of clients in methadone facilities cited alcohol as a main drug. Heroin, on the other hand, was the main drug for 79 percent of methadone clients, in contrast to four percent of clients discharged from outpatient nonmethadone facilities, six percent from residential facilities, and 12 percent from inpatient<sup>3</sup> facilities. In other words, for the most part, methadone clinics treated clients whose main drug, heroin, was used by only a small proportion of clients treated in the other types of facilities.<sup>4</sup>

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<sup>3</sup> In this section of the report, client data are classified and weighted according to the client’s self-report of the type of the treatment received in the index episode, rather than the originating sample facility classifications inherited from DSRS. The SROS interview referred to “inpatient” rather than “hospital inpatient” treatment, and the interview terminology is followed here.

<sup>4</sup> Although heroin is a proportionately atypical problem in treatment types other than methadone clinics, the converse is not true: Accessing other types of treatment is not unusual for heroin users. About two-thirds of the estimated number of clients whose main drug was heroin were discharged from facilities other than methadone clinics. Most of these heroin clients were in inpatient units, which discharged virtually the same estimated number of heroin clients in 1989-1990 as methadone clinics did.

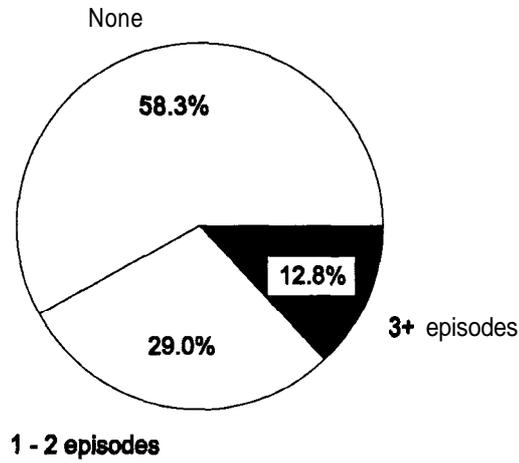
Figure 3-3. Characteristics of treatment clients before and during treatment



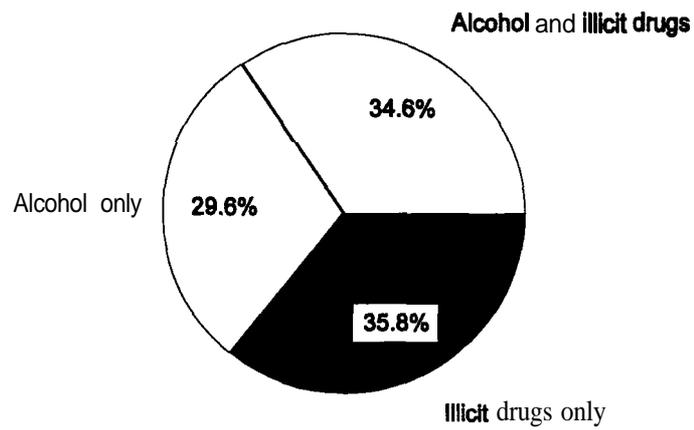
Note: Data are from Table 3-3.

**Figure 3-3. Characteristics of treatment clients before and during treatment (contd.)**

**Number of prior treatment episodes**



**Main drug at intake**



Note: Data are from Table 3-3.

Methadone treatment was also exceptional in that a much smaller proportion of such clients reported marijuana or crack as a main drug, compared with all other facilities (ten-percent marijuana and eight-percent crack versus 27- and 23-percent, respectively). More generally, crack was treated much more often in 24-hour facilities than in the two outpatient types; 29 percent of inpatient and 39 percent of residential clients, compared with less than ten percent of methadone or outpatient nonmethadone clients, reported crack as a main drug.

The main drug at entry to treatment can also be separated into three mutually exclusive categories: alcohol only, alcohol and illicit drugs, and illicit drugs only. Each category defines about one-third of the overall client population (30, 35, and 36 percent, respectively). The profiles of inpatient and outpatient nonmethadone clients correspond with this roughly equal distribution across the three categories. Methadone treatment, as discussed above, is quite different, with 70 percent of its clients citing drugs only and five percent alcohol only.<sup>5</sup> Also, a small proportion of residential clients (16 percent) listed their main drug as alcohol only, and nearly one-half (45 percent) of residential clients reported that their main drug was a combination of alcohol with one or more illicit drugs.

### **Type and Length of Stay in Treatment**

The most common types of treatment episodes among all clients were inpatient and outpatient nonmethadone, with 37 percent and 40 percent of the population in each, respectively. Eighteen percent of the clients received residential treatment, and five percent were discharged from outpatient methadone treatment.

About 38 percent of clients remained in treatment from one to six months, and another 25 percent stayed between one week and one month. A smaller proportion of the population was in treatment for very long or short durations: About 18 percent stayed for six months or longer, and 19 percent stayed for less than one week. The highest proportion of very short stays (37 percent) and lowest proportion of very long stays (four percent) occurred in the facility type with the highest daily cost-inpatient facilities. The longest lengths of stay were in the outpatient nonmethadone and methadone facilities: 89 percent of those in outpatient nonmethadone treatment and 69 percent of those in methadone treatment stayed for at least one month.

### **Reasons for Going into Treatment**

Clients went into treatment not only because they had problems controlling their drug use as such, but also to seek relief from problems either stemming directly from their drug use

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<sup>5</sup> The SROS data suggest that some clients entering methadone treatment (which was designed for primary opiate addiction), but reporting only alcohol problems at admission, may have been chronic opiate addicts who had become dependent on alcohol in the course of trying to stave off a relapse to opiates, and found that using alcohol as a “blockade” was a failed strategy. In other words, clinicians may have used methadone as a prophylactic treatment for older, chronic opiate addicts to prevent an expected relapse to heroin or other narcotics.

or occurring at the same time. These problems included pressure from the criminal justice system, poor health, pressure from or problems with family members, employer pressure, and financial trouble (see Table 3-4). These problems often came in multiples; although some clients cited none of them, most cited at least one, and one-half cited more than one. About one-half (48 percent) of the clients reported that they entered treatment because of family pressure, compared with 35 percent who reported they were pressured by the criminal justice system, 29 percent by financial problems, 25 percent by health problems, and **eight percent by employers**. The most salient variations across treatment types were that more than one-half (52 percent) of the clients in outpatient nonmethadone facilities cited pressure by the criminal justice system, and 39 percent of methadone clients cited financial problems.

**Table 3-4. Percentage who reported selected reasons for entering treatment, by type of treatment**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

	Sample n	Type of Treatment				Total
		Inpatient	Residential	Outpatient Methadone	Outpatient Non- methadone	
<b>Weighted N</b>		357,954	173,811	47,871	387,375	967,012
Reasons* for Going to Treatment Included:						
Criminal justice	1,649	20.8	32.9	17.9	51.6	35.0
<b>Health problems</b>	<b>1,714</b>	<b>29.6</b>	<b>22.8</b>	<b>26.8</b>	<b>19.9</b>	<b>24.5</b>
<b>Relationship</b>	<b>1,715</b>	<b>51.5</b>	<b>53.7</b>	<b>48.9</b>	<b>42.6</b>	<b>48.3</b>
Pressure from	1,634	7.6	9.5	5.5	6.8	7.5
<b>Financial problems</b>	<b>1,683</b>	<b>33.4</b>	<b>25.5</b>	<b>38.8</b>	<b>23.7</b>	<b>28.5</b>

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Individuals could provide several or none of the listed reasons for entry into treatment.

Table 3-5 displays reasons for seeking treatment, with clients categorized by demographic information, main drug at intake, and length of stay. Males and females were quite similar in the percentages who cited health, family, and financial reasons for treatment, but males tended more often than females to cite pressure by criminal justice agents (38 versus 28 percent) and by employers (nine versus three percent). Among racial/ethnic groups, a much higher percentage of Hispanics than blacks cited pressure from the criminal

**Table 3-5. Percentage who reported selected reasons for entering treatment, by demographic and treatment characteristics**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

	Weighted N	Reason for Entering Treatment*				
		Criminal Justice Pressure	Health Problems	Relationship Problems	Pressure from Employer	Financial Problems
		310,717	224,300	442,255	65,959	255,805
Total		35.0	24.5	48.3	7.5	28.5
Sex						
Male	<b>690,409</b>	37.6	23.8	47.7	9.1	28.9
Female	276,602	28.3	26.1	49.8	3.4	27.4
<b>Race/Ethnicity</b>						
White (non-Hispanic)	580,810	37.3	24.4	45.5	6.2	27.9
Black (non-Hispanic)	274,062	23.7	23.5	52.1	9.1	29.8
Hispanic	79,530	56.3	30.9	51.9	11.1	27.8
Age at Discharge						
Less than 18	77,605	50.3	10.9	36.4	<b>0.0</b>	6.1
18 - 29	381,351	39.5	20.3	50.8	6.6	29.4
30 - 39	346,915	31.3	26.2	51.7	10.0	35.8
<b>40+</b>	161,141	25.4	37.1	40.1	7.4	19.0
Length of Stay						
Less than 1 week	180,093	20.6	36.0	<b>59.5</b>	<b>7.9</b>	32.6
1 week to less than 1 month	238,656	22.6	25.4	<b>49.2</b>	<b>9.3</b>	31.0
1 month to less than 6 months	357,879	45.5	20.7	46.1	6.0	27.8
6 months or more	173,563	43.3	20.0	41.1	8.6	23.1
Main Drug at Time of Intake*						
Alcohol	620,447	38.8	26.0	46.4	8.1	25.8
Marijuana	248,801	46.3	20.8	44.6	6.2	28.2
Cocaine	223,167	28.0	25.4	51.4	5.4	37.5
Crack	212,232	21.4	24.2	63.1	8.1	37.2
Heroin	109,737	25.2	33.4	49.7	6.9	43.8

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living **five** or more years after treatment.

\* Individuals could respond that they used more than one or none of the listed main drugs at time of intake, and more than one or none of the listed reasons for entering treatment.

justice system (56 percent versus 24 percent), with whites in between (37 percent); other reasons were cited at about the same rate across these racial/ethnic categories. Age was also correlated with reasons for treatment. Pressure from criminal justice sources decreased with increasing age (from 50 percent among adolescents to 25 percent among those 40 years and older), while health reasons increased with increasing age (from 11 percent among adolescents to 37 percent among those 40 and older). Financial problems were seldom cited by adolescents (six percent), but financial reasons for treatment rose to 36 percent among clients ages 30 to 39 years and diminished to 19 percent among those ages 40 and older.

With respect to main drug, and contrary to what one might anticipate, clients who cited marijuana and alcohol as main drugs were about twice as likely as those who cited cocaine, crack, or heroin to report criminal justice pressure as a reason for seeking treatment (46 and 39 percent versus 28, 21, and 25 percent<sup>6</sup>). Crack clients also tended to report family pressure more often than clients with other main drugs (63 percent versus 45 to 51 percent). Finally, there were clear associations between the length of stay in treatment and the reasons for going into treatment. For example, clients who stayed in treatment for more than one month were twice as likely to have had criminal justice pressure as clients who stayed for less than one month (45 percent versus 22 percent). In contrast, individuals with briefer lengths of stay were more likely to have health problems, family pressures, and financial problems.

In summary, the most common lines of association between client characteristics and reason for seeking treatment were with criminal justice pressure: Clients who were male, Hispanic, younger, cited marijuana or alcohol as main drugs, were in outpatient nonmethadone facilities, and stayed in treatment for longer periods were more likely to cite criminal justice pressure as a reason for treatment.

### Criminal Behavior Before Treatment

Table 3-6 presents information on the prevalence of criminal behavior among clients before entering the index treatment episode in 1989-1990. Nearly 85 percent of the SROS population had been arrested at least once before entry into the index treatment episode, and the average age at first arrest was 21 years. In the five years immediately preceding the index treatment, only about one-quarter of the clients sampled were free of arrests, about one-third reported one or two arrests, and almost one-half reported three or more arrests. Little variation existed in arrest prevalence by type of treatment, but compared with other treatment types, residential clients tended to have more arrests (this group was also more likely to be male, use crack as a main drug, and be between the ages of 18 and 29), and outpatient nonmethadone clients had fewer arrests (this group was also more likely to be less than age 18, use only alcohol as a main drug, and be white).

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<sup>6</sup> Because clients could cite more than one main drug, there are overlaps among the populations being compared here.

**Table 3-6. Percentage who reported criminal behavior, by type of treatment**

**ISROS sampled 3,047 clients discharged from drug treatment in 1989-1990**

	Sample n	Type of Treatment				Total
		Inpatient	Residen- tial	Outpatient Methadone	Outpatient Non- methadone	
Weighted N		357,954	173,811	47,871	387,375	967,012
Total Respondents	1,799					
Ever Arrested Before Index Treatment	1,785	83.3	90.7	88.9	82.2	84.5
Age at First Arrest	1,478	21.4	20.4	21.1	22.1	21.1
Number of Times Arrested During Five Years Before Index Treatment						
No arrests	458	26.9	18	21.4	28.7	25.8
1-2 arrests	540	28.6	30.5	27.3	37.8	32.6
3-5 arrests	370	18.9	22.5	24.6	20.7	20.6
6 or more arrests	409	25.6	29	26.7	12.8	21.1
Ever Incarcerated Before Index Treatment	1,784	57.6	63	60.4	48.2	55
Supported Self Mainly by Illegal Activity During Five Years Before Index Treatment	1,782	31.4	31.6	60.7	17.4	27.2
Incarcerated During Five Years Before Index Treatment	1,790	43.6	54.2	46.4	38.7	43.7

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

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More than one-quarter (27 percent) of clients supported themselves mainly by illegal activity for some period during the five years preceding treatment. However, 61 percent of the outpatient methadone clients, and only 17 percent of outpatient nonmethadone clients, reported this dependence on illegal activity for income, which is one of the most discriminating differences among clients in the four types of treatment. More than one-half of the SROS population (55 percent) had been incarcerated at least once in their lives, and most of these (44 percent of all clients) had been incarcerated during the five years prior to treatment, with the outpatient nonmethadone group marginally lower than the other treatment types in both respects (48 percent and 39 percent on the two measures, respectively).

### Physical Health, Mental Health, and Physical Abuse

A substantial proportion of the client population was troubled by health problems (see Table 3-7). Only about one-quarter (24 percent) reported excellent health during the five years before the index treatment episode; about 43 percent reported good health, and one-third of the clients (33 percent) were in fair or poor health. The health status of outpatient nonmethadone clients was generally somewhat better than other clients, and the health of clients in inpatient facilities was, not surprisingly, generally worse. The most common lifetime health problems among the client population were serious internal conditions such as ulcers, diabetes, kidney problems, or liver problems other than hepatitis (26 percent); breathing conditions other than tuberculosis (22 percent); and heart or blood problems, including high blood pressure (21 percent). A history of hepatitis or yellow jaundice was markedly prevalent among the (mostly drug-injecting) methadone clients (35 percent), and tuberculosis was highly prevalent among residential clients (20 percent).

The mental health history of clients was also highly troubled, often (but not always) as a result of drug or alcohol use (see Table 3-8). In the five years before the index treatment episode, more than one-half of the client population (54 percent) experienced a period of sadness or depression that lasted more than two weeks. Although no strictly comparable (five-year prevalence) data exist on the general population, this level is several multiples above what one would expect (Kessler *et al.*, 1994; Substance Abuse and Mental Health Services Administration, 1996). About two-thirds of those reporting depression (36 percent of all clients) stated that their unhappiness was at times the result of alcohol or drug use. One-quarter of the client population had attempted suicide at some time in their lives. About 15 percent reported that they attempted suicide at least once during the five years before treatment, and about two-thirds of these (ten percent of the client population) reported that these attempts were a result of alcohol or drug use. One-half (48 percent) of all clients reported trouble controlling their temper, and about two-thirds (33 percent of the total population) of those who reported trouble controlling their temper indicated this was the result of alcohol or drug use. More than one-quarter (28 percent) of all clients had hallucinations or delusions in their lifetimes, and two-thirds of this group (19 percent of the total SROS population) had this problem during the five years prior to treatment.

Finally, physical abuse is relatively common in the lives of the client population (see Table 3-8). In the five years before treatment, one-third of clients (32 percent) had been attacked with a weapon, such as a knife or gun, or been seriously hit or beaten. About one-fifth had been badly bruised, visited a doctor, or stayed in bed for one day or more as a result of the attack.

**Table 3-7. Percentage who reported physical health status and medical conditions, by type of treatment**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

	Sample n	Type of Treatment			Total	
		Inpatient	Residential	Outpatient Methadone		Outpatient Non- methadone
Weighted N		357,954	173,811	47,871	387,375	967,012
<b>Self-Rated Health Status During Five Years Before Index Treatment</b>						
Excellent	388	18.0	23.2	15.3	30.1	23.7
Good	789	41.1	48.2	50.8	41.3	43.0
Fair	432	26.9	20.0	25.8	21.8	23.5
Poor	183	13.9	8.7	8.1	6.8	9.9
<b>Ever Had Specific Medical Conditions</b>						
Tuberculosis	1,797	5.4	19.8	5.9	2.8	4.2
Breathing condition	1,794	21.0	25.6	27.6	19.7	21.6
Heart/blood condition	1,792	23.3	20.7	28.3	17.5	20.8
Anemia	1,793	11.7	8.2	16.0	9.3	10.3
Hepatitis/jaundice	1,796	15.7	12.7	34.5	6.8	12.5
Serious internal condition	1,795	28.1	25.1	27.1	24.4	26.0
Bone/muscle condition	1,793	20.0	18.0	18.2	14.5	17.3
Convulsions/ epilepsy/migraine	1,794	17.2	22.7	19.2	17.0	18.2
STD (excluding AIDS)	1,793	19.3	23.4	24.0	14.4	18.3
Cancer	1,792	4.9	2.7	6.1	4.1	4.2
Miscarriage/ toxemia	1,794	12.6	9.4	20.0	15.5	13.5

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

**Table 3-8. Percentage who reported mental health problems and physical abuse, by type of treatment**

ISROS sampled 3,047 clients discharged from drug treatment in 1989-19901

	Sample n	Type of Treatment				Total
		Inpatient	Residential	Outpatient Methadone	Outpatient Non- methadone	
Weighted N		357,954	173,811	47,871	387,375	967,012
Sad - ever	1,792	67.5	63.9	65.2	59.6	63.6
Sad - five years before index treatment	1,796	59.1	56.3	57.7	47.4	53.9
Sad as result of alcohol/drug use	1,794	43.6	37.4	43.0	26.9	35.8
Attempted suicide - ever	1,792	26.4	27.4	18.3	21.2	24.1
Suicide attempt - five years before index treatment	1,798	17.3	18.4	13.7	12.0	15.2
Suicide attempt as result of alcohol/drug use	1,791	11.4	11.8	8.3	8.2	10.0
Trouble with temper - ever	1,793	49.3	54.5	38.0	44.8	47.9
Trouble with temper as result of alcohol/drug use	1,786	35.9	40.1	26.4	27.7	32.9
Hallucinations/delusions - ever	1,792	32.5	29.2	23.4	24.4	28.2
Hallucinations/delusions five years before index treatment	1,791	23.6	19.9	17.0	14.0	18.8
Violence - before index treatment						
Attacked with weapon/seriously hit or beaten	1,795	29.8	37.6	39.9	30.0	31.8
Beaten enough to see doctor due to beating	1,798	20.2	21.5	24.7	19.8	20.5

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

## CHANGES IN CLIENT BEHAVIOR AND CIRCUMSTANCES IN THE FIVE YEARS BEFORE AND AFTER TREATMENT

The SROS interview led respondents through a series of explicit comparisons between the five-year period preceding the index treatment episode and the five years after the treatment episode, using identically worded items to compare the clients' drug and alcohol use, criminal behavior, housing characteristics, physical and mental health, and employment and other sources of income across these two periods. This section presents an analysis, using methods described in Chapter II, of changes on these measures, weighted to reflect the 967,000 clients represented by SROS as a whole as well as subgroups divided on a variety of dimensions. The findings generally reflect appreciable changes across these periods, particularly in the drug and alcohol use and criminal activity measures, and these changes correlate in important ways with factors such as the length of stay in treatment. The observation that statistically significant changes occurred from the period before treatment to the period after treatment does not necessarily mean that treatment was a sole cause (nor, strictly speaking, does it prove that treatment caused *any*) of these changes, but it does mean that real changes occurred, that something caused these changes, that treatment is associated with these changes, and that further analysis is warranted to isolate and assess the contributions of the potential causes.

### Changes in Drug and Alcohol Use Among Clients as a Whole

There were substantial decreases in the percentage of respondents who reported using *any* illicit drugs after treatment, compared with the period before treatment (see Table 3-9). Those using any illicit drug decreased from 75 percent before treatment to 59 percent after treatment, which is a statistically significant difference of minus 16 points, and a percentage difference (that is,  $100 * \{ \{59.3/75.4\} - 1.0 \}$ ) of 21 percent. This decrease was also found for almost every individual drug, from the most prevalent (marijuana and cocaine, down 28 and 45 percent) to those rarely used, such as PCP. The only listed drug for which the decrease in use was not statistically significant was illegal methadone,

Table 3-10 presents a similar analysis of the change in drug use among the client population, but measures change in a different way—namely, the average number of days that each listed drug was used before and after treatment *among those who had used the drug before treatment*. Within this more restricted sample, there were still substantial decreases in the frequency of use for every listed drug. For example, clients who used marijuana before treatment used it an average (mean) of 15 days per month; after treatment, the same group used marijuana half as often, or fewer than seven days per month. The use of cocaine by pretreatment cocaine users fell by 63 percent, from 12 days to five days per month, and the use of crack by pretreatment crack users fell by 49 percent, from 16 days to eight days per month.

Finally, Table 3-11 presents the results of an additionally restricted analysis, examining the mean number of days that the listed drugs were used in the 5 years before and 5 years after treatment among clients who had used each drug both before treatment *and* after treatment. In essence, this table shows the change in use for those who did not stop using specific drugs. Even in this group, statistically significant reductions were found for the four drugs with the largest number of cases:

**Table 3-9. Percentage who used drugs and alcohol during the five years before and after treatment**  
**[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Drug	Percentage use 5 or more times							Percentage Difference” N	
	Before (n)	After (n)	Difference”	Standard Error	(n)				
Alcohol	90.7	1,794	77.8	1.790	-13.1 *	1.6	1,787	-14	960,561
Any illicit drug	75.4	1,799	59.3	1,799	-16.1 *	1.5	1,799	-21	967,012
Marijuana	56.5	1,789	41.0	1,774	-16.0 *	1.6	1,774	-28	952,103
Cocaine	42.9	1,788	23.4	1,790	-19.5 *	2.0	1,785	-45	958,818
Crack	29.0	1,791	24.3	1,786	-4.8 *	1.6	1,784	-17	957,890
Heroin	13.8	1,791	12.0	1,788	-1.9 *	0.7	1,787	-14	959,101
Inhalants	4.3	1,787	2.0	1,782	-2.3 *	0.7	1,782	-53	958,560
PCP	4.5	1,790	1.8	1,782	-2.7 *	0.5	1,782	-60	957,052
Hallucinogens	13.1	1,788	5.7	1,778	-7.4 *	0.9	1,778	-56	955,836
Illegal methadone	2.9	1,789	2.2	1,789	-0.6	0.4	1,789	n.s.	961,428
Narcotics	8.8	1,786	6.1	1,786	-2.7 *	0.6	1,786	-31	960,152
Methamphetamines	14.3	1,789	8.1	1,781	-6.2 *	1.2	1,780	-43	958,332
Downers	14.7	1,790	7.6	1,782	-7.1 *	0.8	1,782	-48	958,638
Other	6.5	1,755	3.2	1,755	-3.4 *	0.5	1,755	-52	944,695

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the “before” or “after” question were not used to calculate the difference or p-value of the paired t-test.

**Table 3-10. Number of days per month used specific drugs in five years before and after treatment, among respondents who used the drug during the five years before treatment**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Drug	Number of days used						Percentage Difference <sup>a</sup> N	
	Before (n)		After (n)		Difference <sup>a</sup>	Standard Error	(n)	
Alcohol	16.8	1,374	10.1	1,374	-6.7 *	0.5	1374	-40 748,089
Marijuana	14.6	875	6.8	875	-7.8 *	0.5	875	-53 471,431
Cocaine	12.1	725	4.5	725	-7.6 *	0.5	725	-63 377,410
Crack	16.2	445	8.3	445	-7.9 *	0.8	445	-49 245,086
Heroin	21.2	312	12.9	312	-8.3 *	0.9	312	-39 120,217
Inhalants	7.7	84	1.8	84	-6.0 *	1.3	84	-78 36,510
PCP	8.8	77	2.5	77	-6.2 *	1.3	77	-70 40,236
Hallucinogens	4.5	232	1.7	232	-2.8 *	0.7	232	-62 121,655
Illegal methadone	8.3	74	3.2	74	-5.1 *	1.5	74	-61 26,738
Narcotics	10.5	163	4.3	163	-6.2 *	0.9	163	-59 77,093
Methamphetamines	12.0	249	3.6	249	-8.4 *	1.1	249	-70 128,597
Downers	10.1	276	5.0	276	-5.2 *	0.7	276	-51 130,167
Other	15.0	105	4.6	105	-10.4 *	1.5	105	-69 56,449

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the “before” or “after” question were not used to calculate the difference or p-value of the paired t-test.

**Table 3-1 1. Number of days per month used specific drugs in five years before and after treatment, among respondents who used the drug during the five years before and after treatment**  
 [SROS sampled 3,047 clients discharged from drug treatment in 1989-19903]

Drug	Number of days used						Percentage Difference' N		
	Before (n)	After (n)	Difference <sup>a</sup>	Standard Error	(n)				
Alcohol	15.7	1,045	13.3	1,045	-2.4 *	0.4	1,045	-15	537,084
Marijuana	15.2	525	10.9	525	-4.3 *	0.6	525	-28	292,921
Cocaine	13.7	318	10.8	318	-2.9 *	0.7	318	-21	158,608
Crack	16.7	243	15.0	243	-1.8 *	0.8	243	-11	136,078
Heroin	23.1	198	21.3	198	-1.8	0.9	198	n.s.	72,740
Inhalants	7.2	20	7.6	20	0.4	3.4	20	n.s.	8,492
PCP	15.8	18	11.1	18	-4.6	2.8	18	n.a.	9,208
Hallucinogens	5.5	62	5.9	62	0.5	1.3	62	n.s.	35,400
Illegal methadone.	5.5	32	8.2	32	2.6 *	1.2	32	47	10,616
Narcotics	11.3	77	9.0	77	-2.2	1.2	77	n.s.	36,492
Methamphetamines	11.7	84	9.5	84	-2.2	1.4	84	n.s.	48,510
Downers	12.0	126	10.7	126	-1.3	1.2	126	n.s.	60,553
Other	15.9	31	14.7	31	-1.2	1.2	31	n.s.	17,624

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the "before" or "after" question were not used to calculate the difference or p-value of the paired t-test.

n.a. Significant percentage difference is not reported due to extremely small sample size of less than 20 cases.

Alcohol, marijuana, cocaine, and crack (the number of days used per month decreased by 15, 28, 21, and 11 percent, respectively).<sup>7</sup>

To summarize, among the client population as a whole, the percentage of clients using all drugs and any specific drug was lower after treatment than before; users of specific drugs before treatment used them less after treatment; and even clients who continued to use the most prevalent drugs after treatment used them less frequently than before. In the following discussion of changes in drug use by sociodemographic and treatment subgroups, attention is focused on only the first of these measures (i.e., the percentage of clients using drugs before versus after treatment).

### Changes in Drug Use by Sociodemographic and Treatment Subgroups

There were distinct differences in the level of change in drug use depending on sex, age, and racial/ethnic group. Both male and female clients were less likely to use drugs after treatment than before (see Figure 3-4 and Appendix Tables B-16 to B-21). However, for any illicit drug overall and for each of the most frequently used illicit drugs (marijuana, cocaine, crack, and heroin), the decrease was greater among female clients than male. Adults and adolescents differed as well (see Figure 3-5): No statistically significant decreases were detected for adolescents in overall use of any illicit drug during the five years after treatment or in the specific use of marijuana, cocaine, and heroin. However, adolescents significantly increased their use of crack after treatment, albeit from a low pretreatment base of five percent (see Appendix Table B-20), because the age of first use of crack is typically more than 20 years. Among adults, there were gradients in the extent of change by age, with older age groups generally reducing their drug use to a greater degree (percentage change) after treatment than younger age groups did. Finally, among black, white, and Hispanic clients, there were similar decreases in the overall measure of any illicit drug use (see Appendix Tables B-16 to B-21). However, only the black clients reduced their crack and heroin use to a statistically significant extent (23- and 18-percent declines); in both instances, black clients had been more likely to use these drugs before treatment than the other two racial/ethnic groups.

Figure 3-6 (see also Appendix Tables B-16 to B-21) shows changes in drug use rates by the type of treatment that the client received. Clients in methadone treatment facilities composed the only group showing a significant decrease in heroin use (27-percent decline); methadone treatment had lesser effects on cocaine and crack use, but this finding corresponds well to the predominance of heroin use in the methadone treatment group's pretreatment profile. By far the largest decrease in crack use was among residential clients (32-percent decline). Cocaine use also decreased most among residential clients (S-percent decline), although the contrast with other treatment types was less pronounced in this case.

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<sup>7</sup> In contrast, clients who used illegal methadone both before and after treatment increased their rate of use from around six days to eight days per month on average. Although this finding was statistically significant, the number of cases in the sample was small, and additional analyses in later research will be needed to interpret this finding correctly.

Figure 3-4. Percentage change\* in drug use by sex

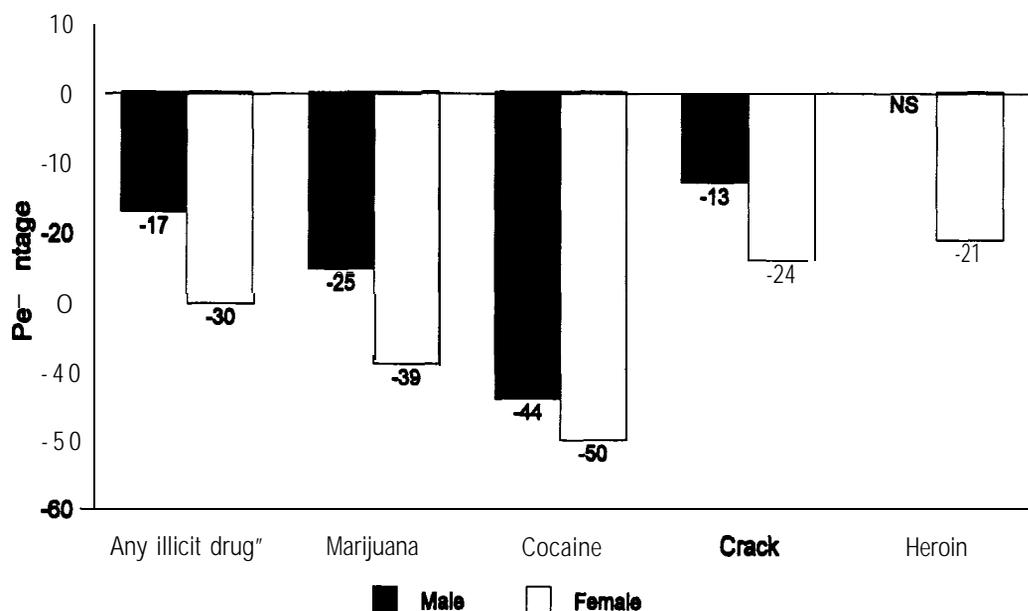
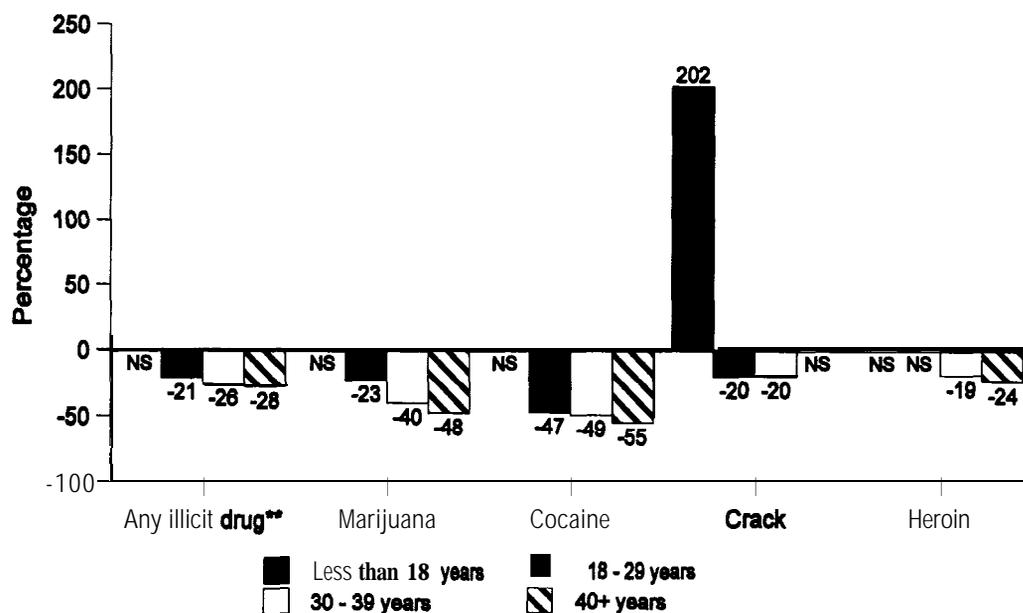


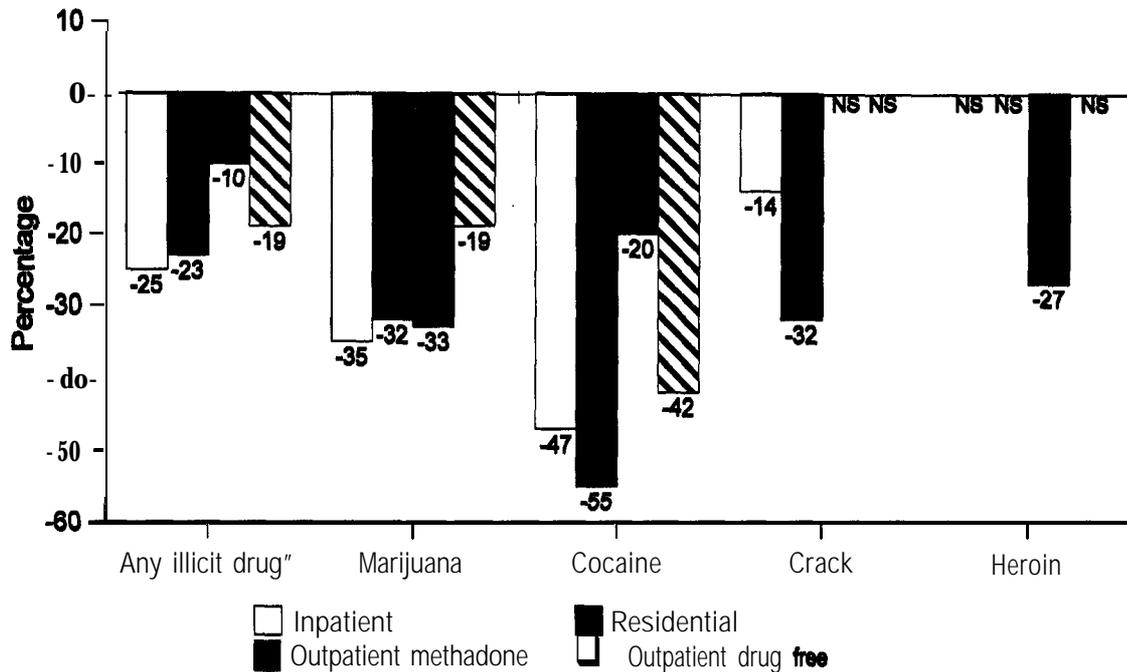
Figure 3-5. Percentage change\* in drug use by age



\*The percentage change is the difference between (a) the percentage using five or more times across the five years after treatment and (b) the percentage using five or more times across the five years before treatment, divided by (b). All percentages shown are significant at the 0.05 level. "NS" means that the difference was not significant. Data are from Appendix Tables B-16 to B-21.

\*\*\*"Any illicit drug" includes marijuana, cocaine, crack, heroin, inhalants, PCP, other hallucinogens, illegal methadone, narcotics, methamphetamines, downers, and other illicit drugs,

Figure 3-6. Percentage change\* in drug use by type of treatment

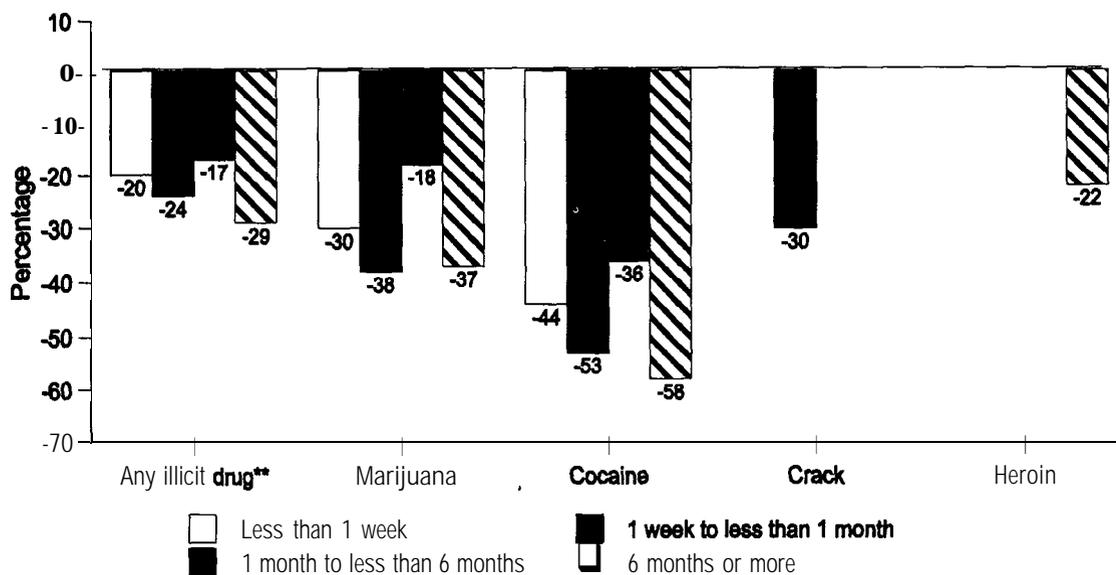


\*The percentage change is the difference between (a) the percentage using five or more times across the five years after treatment and (b) the percentage using **five** or more times across the five years before treatment, divided by (b). All percentages shown are significant at the 0.05 level. “NS” means that the difference was not significant. Data are from Appendix Tables B-1 to B-6.

\*\*“Any illicit drug” includes marijuana, cocaine, crack, heroin, inhalants, PCP, other hallucinogens, illegal methadone, narcotics, methamphetamines, downers, and other illicit drugs.

In addition to the type of treatment, the length of stay in treatment (Figure 3-7) was consistently associated with the extent of change in drug use. Although the pattern does not appear strictly linear in Figure 3-7, this is a consequence of grouping clients in types of treatment with shorter (generally the 24-hour facilities) and longer (outpatient) planned terms. By and large, the “less than one week” and “less than six month” groups are more heavily weighted with clients with suboptimal lengths of stay. The multivariate regression results reported below make it more clear that, after controlling for type of treatment (and therefore planned length of stay), length of stay is associated with the extent of decrease in drug use. Clients who completed their treatment plan were more likely to reduce their pretreatment drug use than noncompleters for every principal drug except crack.

Figure 3-7. Percentage change\* in drug use by length of stay



\*The percentage change is the difference between (a) the percentage using five or more times across the five years after treatment and (b) the percentage using five or more times across the five years before treatment, divided by (b). All percentages shown are significant at the 0.05 level. “NS” means that the difference was not significant. Data are from Appendix Tables B-16 to B-21.

\*\*“Any illicit drug” includes marijuana, cocaine, crack, heroin, inhalants, PCP, other hallucinogens, illegal methadone, narcotics, methamphetamines, downers, and other illicit drugs.

### Changes in Criminal Behavior

Just as clients reported overall reductions in drug use in the five years after treatment, they reported overall reductions in criminal activities. Drawn together in Table 3-12 and Figure 3-8 are percentage changes in a series of individual types of criminal activities as well as some key summary measures of contact with the criminal justice system. Virtually all of the measures of individual types of income-producing crimes (such as breaking and entering, larceny, prostitution, and drug sales), as well as more violent and disorderly offenses (such as driving under the influence and weapons use), declined by roughly one-third (the range shown in the figure is 23 to 38 percent; a few of the rarer offenses in the client population, such as auto theft, rape, and murder, are outside this range). However, self-reported arrests declined by a smaller proportion (17 percent) than crimes, incarceration actually increased by 17 percent, and violations of probation or parole conditions rose by 26 percent. These findings seem paradoxical. It is possible that the same circumstances that led clients to seek treatment also placed them under more stringent supervision in the form of probation, parole, and incarceration, and this increase in supervision reduced the commission of primary offenses. Another possibility is that treatment had the effect of making clients both less prone to committing offenses and more visible or easily collared when they did. The evidence in SROS cannot further discriminate among these or other possible explanations.

**Table 3-12. Percentage who reported criminal activity during the five years before and after treatment  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Criminal Activity	Percentage reporting criminal activity							Percentage Difference <sup>a</sup>	N
	Before	(n)	After	(n)	Difference <sup>b</sup>	Standard Error	(n)		
Vehicle theft	9.0	1,790	4.0	1,789	-5.0 *	0.9	1,789	-56	962,296
Driving while intoxicated (DWI)	60.5	1,794	43.3	1,786	-17.1 *	2.8	1,786	-28	962,391
Driving under the influence (DUI)	54.1	1,793	40.4	1,785	-13.6 *	1.8	1,784	-25	961,093
Public disorder	28.1	1,792	19.6	1,785	-8.5 *	1.2	1,785	-30	961,052
Sell drugs	34.7	1,786	24.2	1,787	-10.5 *	1.4	1,786	-30	962,389
Prostitution/procurement	12.8	1,790	9.5	1,790	-3.2 *	0.9	1,790	-25	963,696
Fraud/forgery	13.7	1,792	10.3	1,792	-3.5 *	1.0	1,792	-26	963,348
Theft/larceny	27.3	1,791	17.2	1,788	-10.0 *	1.5	1,787	-37	960,815
Breaking and entering	13.6	1,792	8.4	1,793	-5.2 *	1.2	1,792	-38	964,140
Armed robbery	3.4	1,794	3.4	1,793	0.0	0.6	1,793	n.s.	963,674
Arson	1.5	1,794	0.6	1,793	-0.9	0.3	1,793	n.s.	964,585
Threaten/attack	12.4	1,792	9.4	1,791	-2.9 *	1.0	1,791	-23	962,441
Use force for sex	0.7	1,792	0.6	1,791	-0.1	0.3	1,791	n.s.	965,569
Homicide	0.4	1,792	0.1	1,792	-0.3	0.2	1,792	n.s.	963,618
Violate parole	16.6	1,788	20.9	1,784	4.3 *	1.4	1,784	26	960,137

See footnotes at end of table.

**Table 3-12. Percentage who reported criminal activity during the five years before and after treatment**

**[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Criminal Activity	Percentage reporting criminal activity						Percentage Difference <sup>a</sup>	N	
	Before	(n)	After	(n)	Difference <sup>a</sup>	Standard Error			
Arrestee	65.7	1,781	54.4	1,782	-11.3 *	2.6	1,750	-17	942,237
Spent time in jail, prison, detention, or probation or parole+	42.8	1,792	56.8	1,533	7.3 *	1.8	1,528	17	813,503
Supported self mainly through criminal activity	27.2	1,782	17.6	1,782	-9.5 *	1.1	1,776	35	955,980

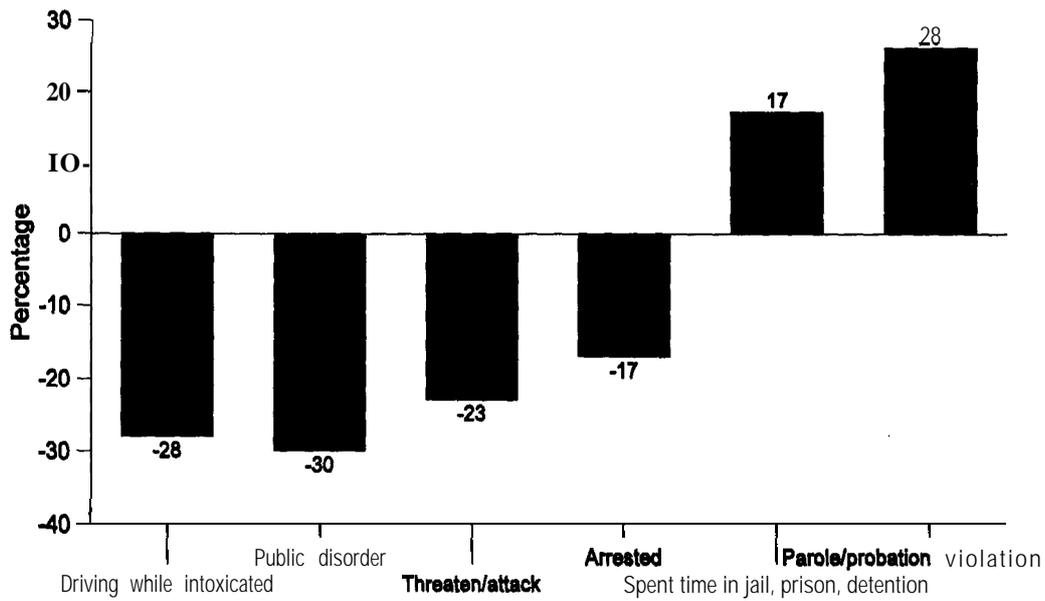
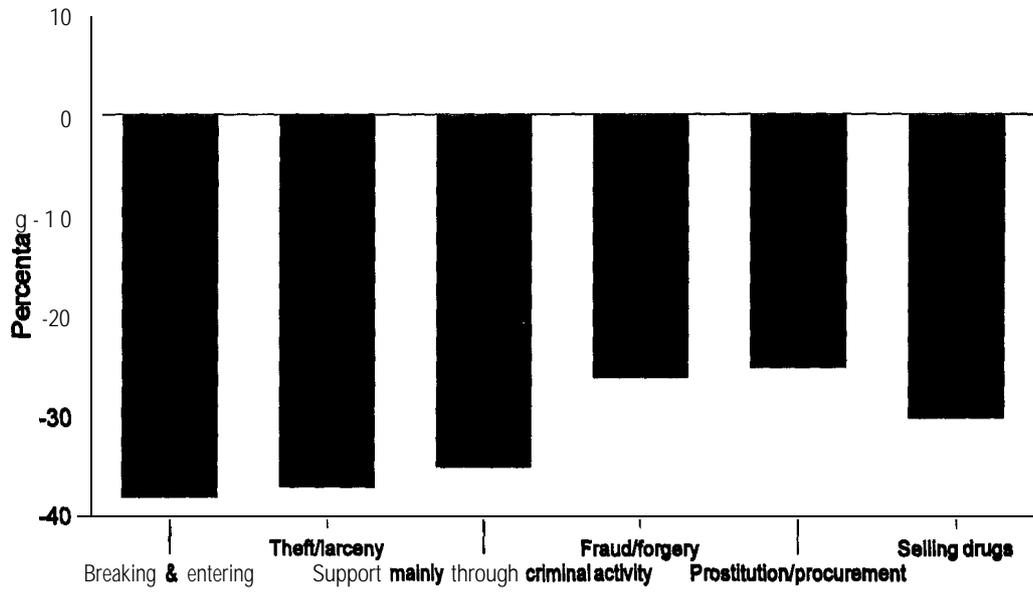
Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the “before” or “after” question were not used to calculate the difference or p-value of the paired t-test.

<sup>+</sup> There were a large number of cases missing for this variable during the five years after the index episode because of item nonresponse on the five questions that were combined to create this variable.

**Figure 3-8. Percentage change\* in criminal behavior**



\*The percentage change is the difference between (a) the percentage reporting criminal activity across the five years after treatment and (b) the percentage reporting criminal activity across the five years before treatment, divided by (b). All percentages shown are significant at the 0.05 level. Data are from Table 3-12.

## Changes in Criminal Behavior by Sociodemographic and Treatment Subgroups

Appendix Tables B-31 to B-37 analyze the changes of criminal behavior within subgroups defined by selected demographic and treatment characteristics; some of these findings are illustrated in Figures 3-9 to 3-13. Percentage changes in specific criminal activities before and after treatment differed somewhat by sex (see Figure 3-9) and race/ethnicity (see Appendix Tables B-31 to B-37) but with no unifying pattern of consistent differences. In contrast, changes by age group showed a strong positive association between age and the extent of change (see Figure 3-10): Older age groups were much more inclined to reduce criminal activities after treatment than younger ones. This is particularly dramatic with respect to driving under the influence or while intoxicated, selling drugs, and committing acquisitive crimes, some of which increased in the five years after treatment among the youngest age group. Increase in criminal activity from the early teenage years into young adulthood is an extremely common observation in cohort studies (Blumstein *et al.*, 1986), and in order to isolate more precisely the intervention effects, investigative efforts must adopt the assumption of a steeply rising growth curve (Johnson *et al.*, 1996, 1997). Although the consistent finding of greater reductions in post-treatment criminal activity with increasing age is striking, this relationship continued to hold only for drug selling in the multivariate analyses discussed in the next section.

There were no consistent patterns of before/after change in criminal activity across type of treatment (see Figure 3-11 and Appendix Tables B-31 to B-37), but lengths of stay greater than six months (see Figure 3-12) and completion of the treatment plan (see Figure 3-13) were clearly associated with greater reductions in crime than were shorter lengths of stay and noncompletion of the treatment plan. The decreases in crime were about one-half larger for completers and clients who had at least a six-month stay; these results were consistent with the findings for drug use. In addition, for most of the crimes listed, the decline in criminal activity after treatment for those discharged from their first treatment experience was larger, and in some cases twice as large, as the decline for those who had one or more treatment experiences. For example, rates of theft/larceny and breaking and entering declined by 52 and 62 percent, respectively, among clients receiving their first lifetime treatment, but declined by only about 30 percent for those receiving a second or greater treatment.

A parallel finding was that post-treatment reduction in crime for those who took no further drug treatment after 1989-1990 was two to four times as large as the corresponding reductions among those who did reenter treatment after 1989-1990 (see Appendix Tables B-31 to B-37). For example, those who took no additional treatment decreased drug selling by 43 percent; for clients who later took additional treatment, the corresponding decline was 21 percent. Although about 50 percent of both groups reported driving under the influence before treatment, there was a 40-percent drop after treatment for those receiving no further treatment, and a much smaller drop of 10 percent for those receiving additional treatment,

Figure 3-9. Percentage change\* in criminal behavior by sex

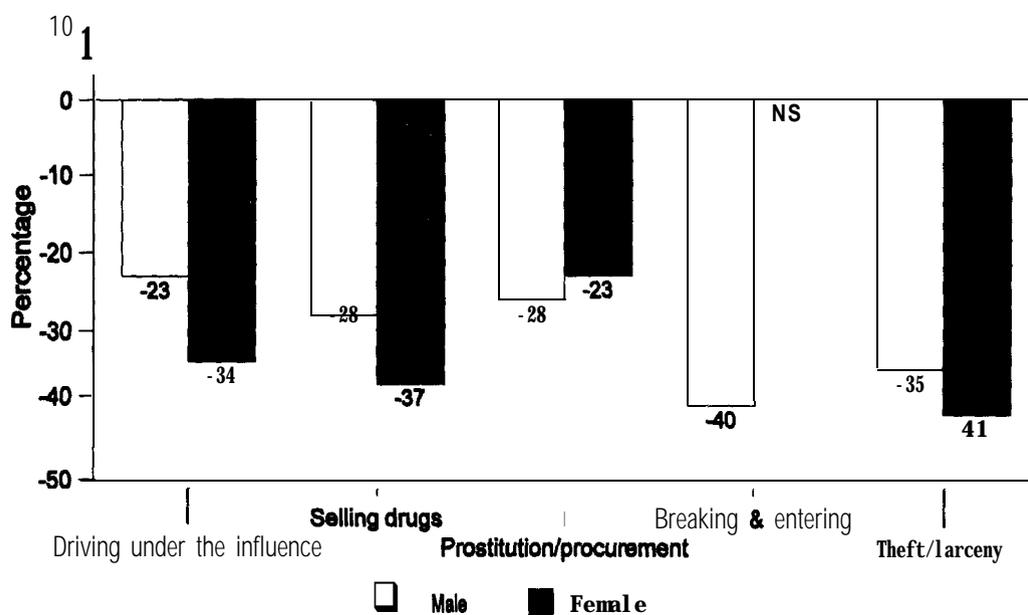
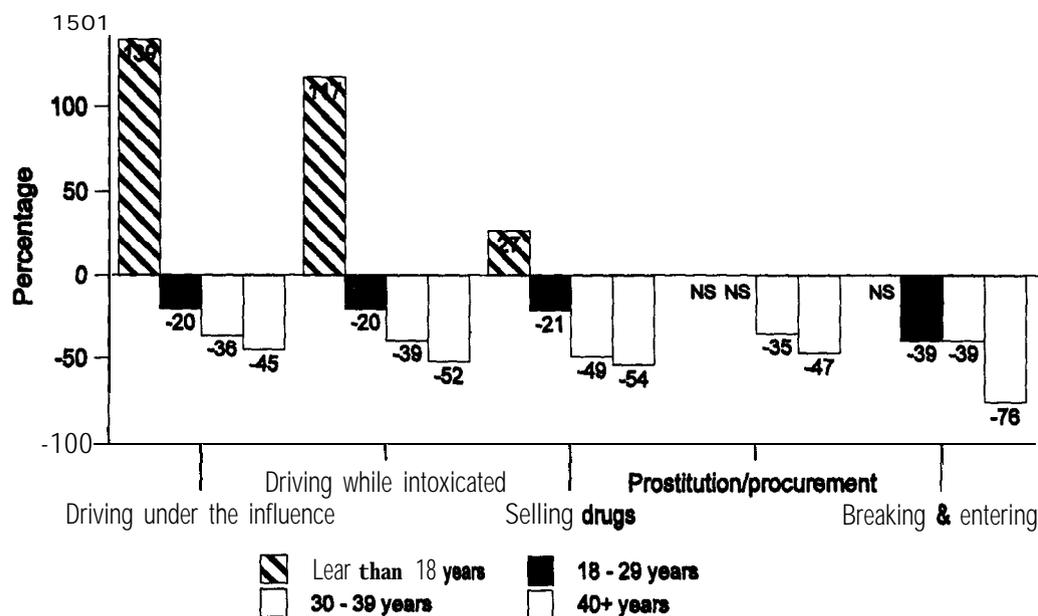


Figure 3-10. Percentage change\* in criminal behavior by age



\*The percentage change is the difference between (a) the percentage reporting criminal activity across the five years after treatment and (b) the percentage reporting criminal activity across the five years before treatment, divided by (b). All percentages shown are significant at the 0.05 level. "NS" means that the difference was not significant. Data are from Appendix Tables B-31 to B-37.

Figure 3-11. Percentage change\* in criminal behavior by type of treatment

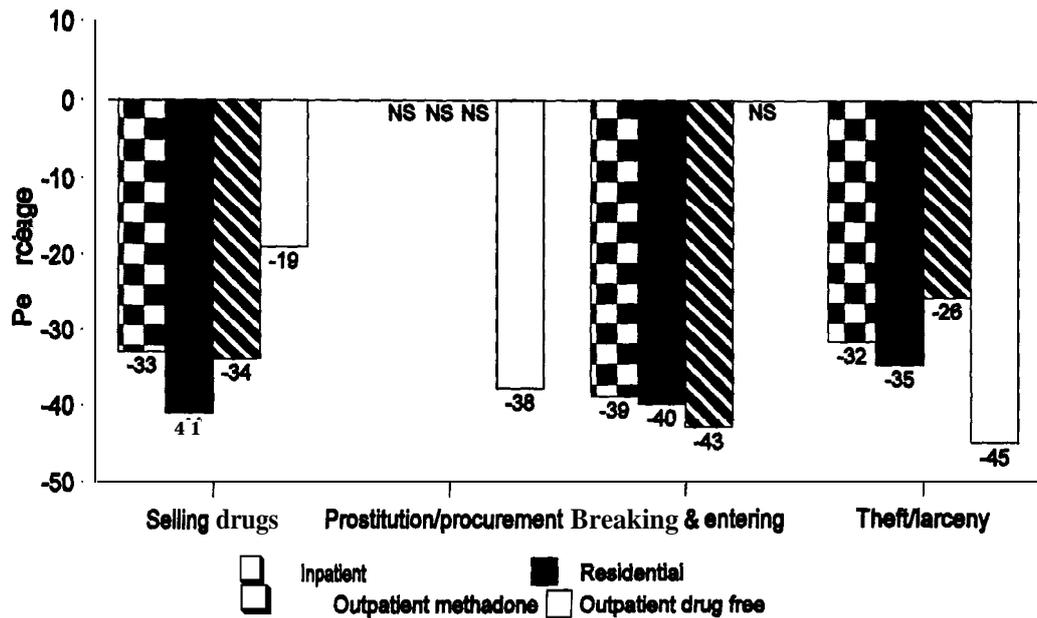
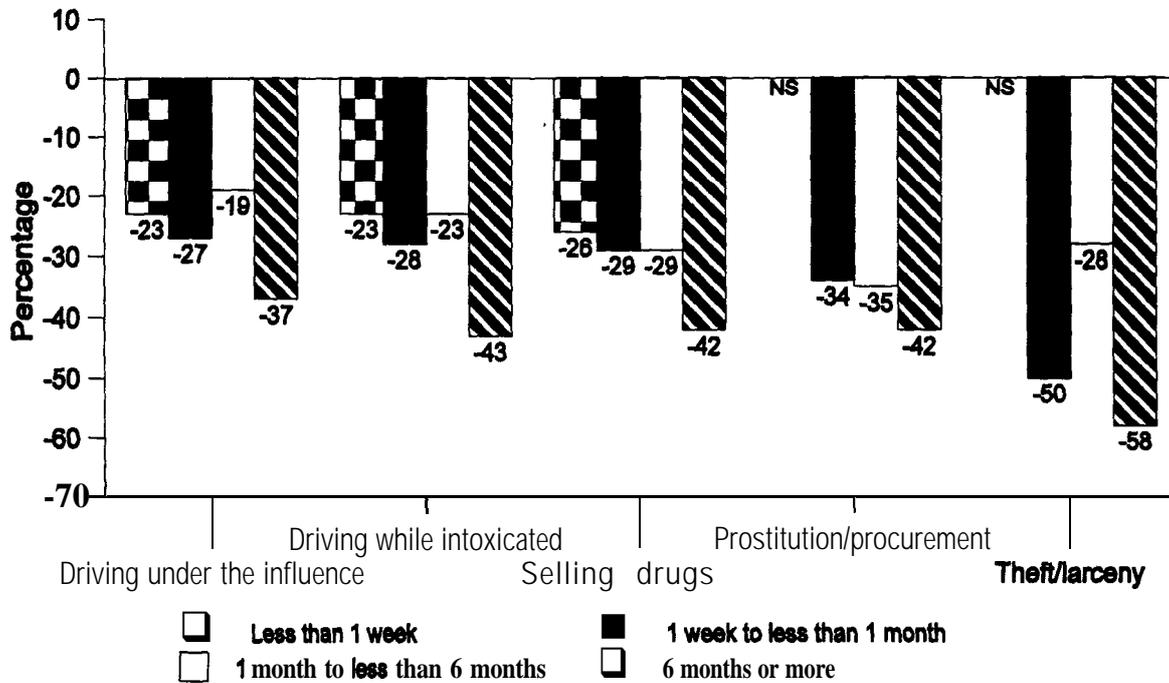
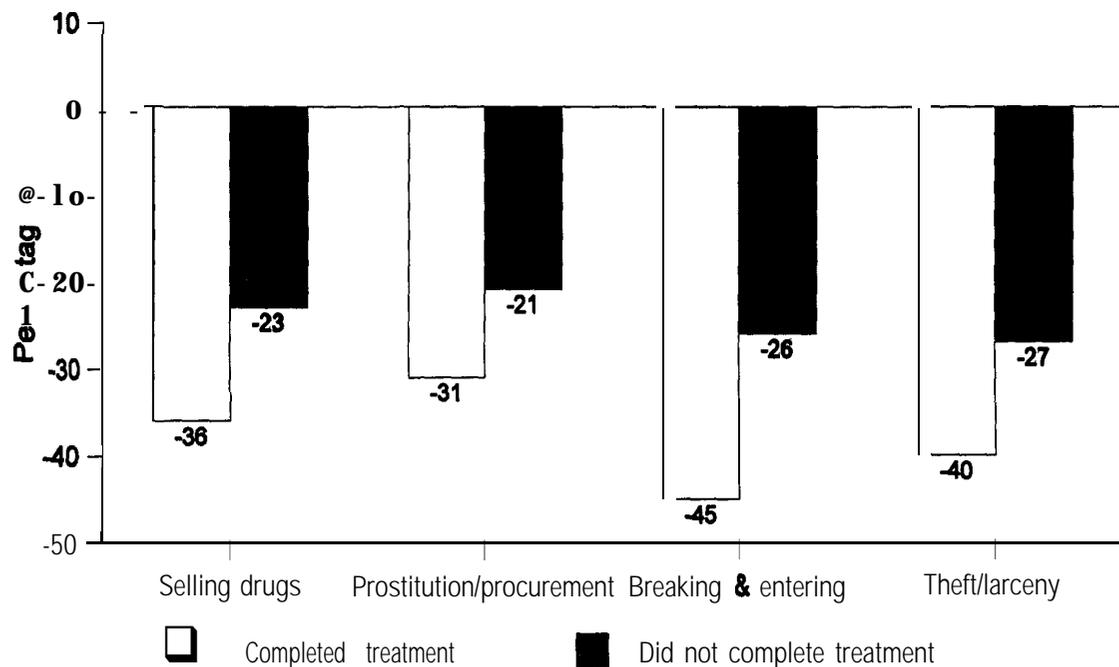


Figure 3-12. Percentage change\* in criminal behavior by length of stay



\*The percentage change is the difference between (a) the percentage reporting criminal activity across the five years after treatment and (b) the percentage reporting criminal activity across the five years before treatment, divided by (b). All percentages shown are significant at the 0.05 level. "NS" means that the difference was not significant. Data are from Appendix Tables B-31 to B-37.

Figure 3-13. Percentage change\* in criminal behavior by treatment completion



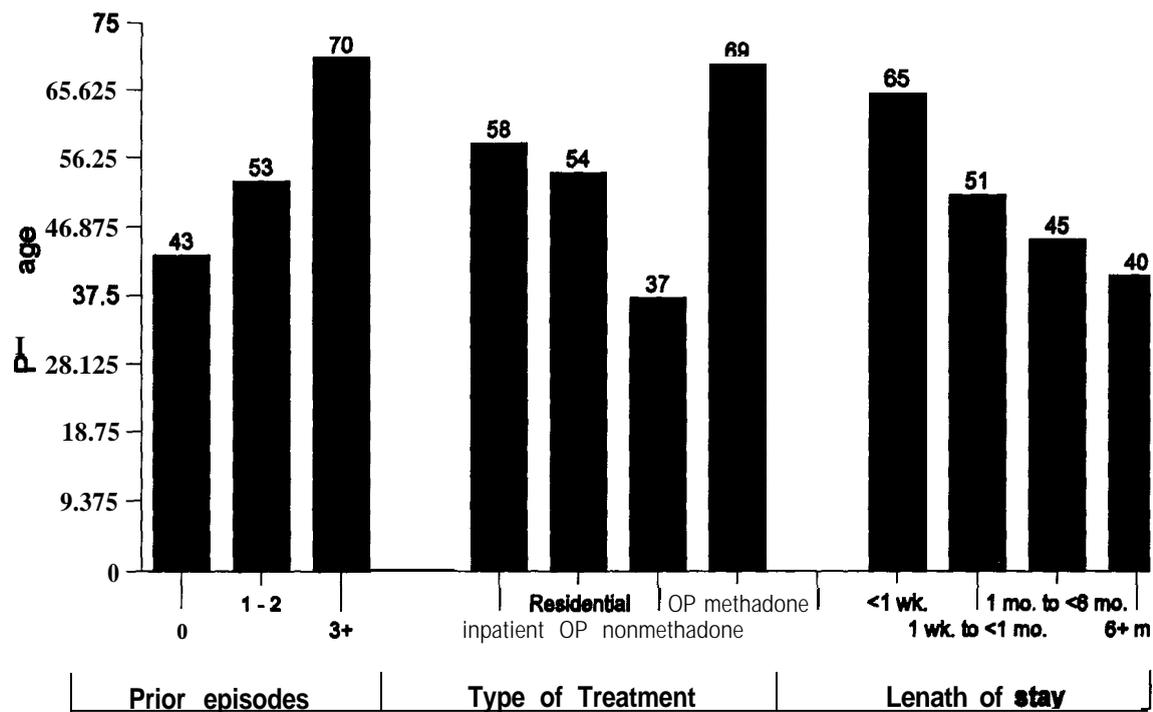
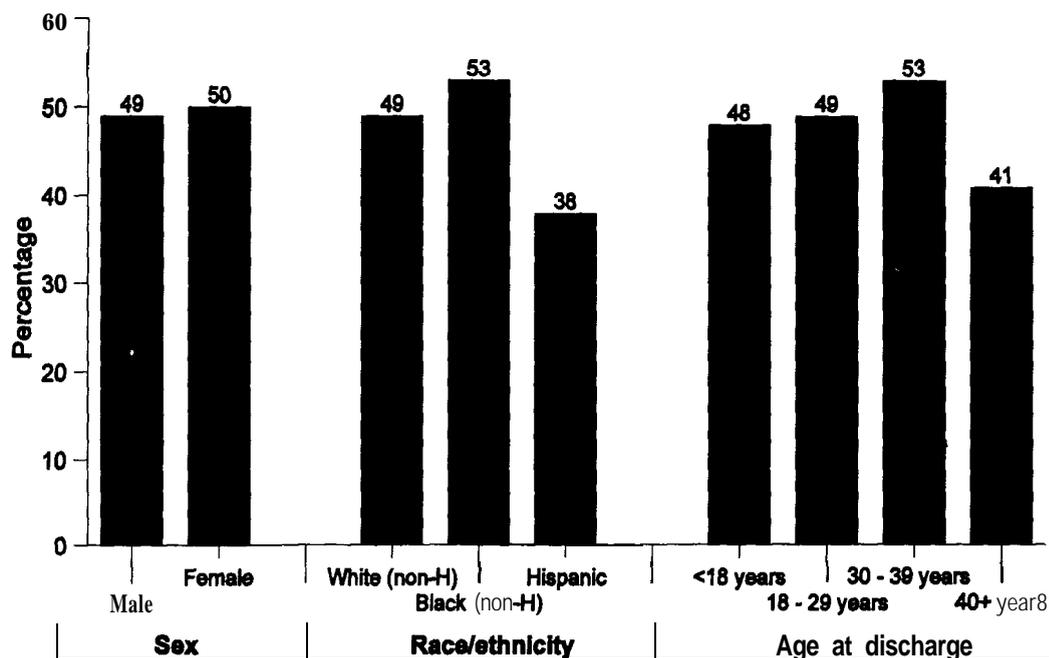
\*The percentage change is the difference between (a) the percentage reporting criminal activity across the five years after treatment and (b) the percentage reporting criminal activity across the five years before treatment, divided by (b). All percentages shown are significant at the 0.05 level. Data are from Appendix Tables B-31 to B-37.

These results suggest a dynamic relationship between treatment activity and criminal activity, in which clients who completed their treatment plans and stayed the full course were less likely to resume crime and also less likely to reenter treatment at a later time. In contrast, those who stayed for shorter periods and did not complete their treatment plans were more likely to commit offenses and seek treatment again. Although the analyses necessary to evaluate these characteristics thoroughly are beyond the scope of the present report, the likelihood that this kind of dynamic operates across careers in drugs, crime, and treatment is reinforced by observations such as those presented in Figure 3-14 (see also Appendix Table B-40). Clients with many episodes before 1989-1990 were the most likely to reenter treatment after 1989-1990; clients with the shortest lengths of stay during 1989-1990 were the most likely to enter treatment again later; and clients in outpatient nonmethadone facilities—the type of treatment with the longest length of stay (see Table 3-3)—were the least likely to reenter treatment after 1989-1990.

### Changes in Lifestyle Characteristics

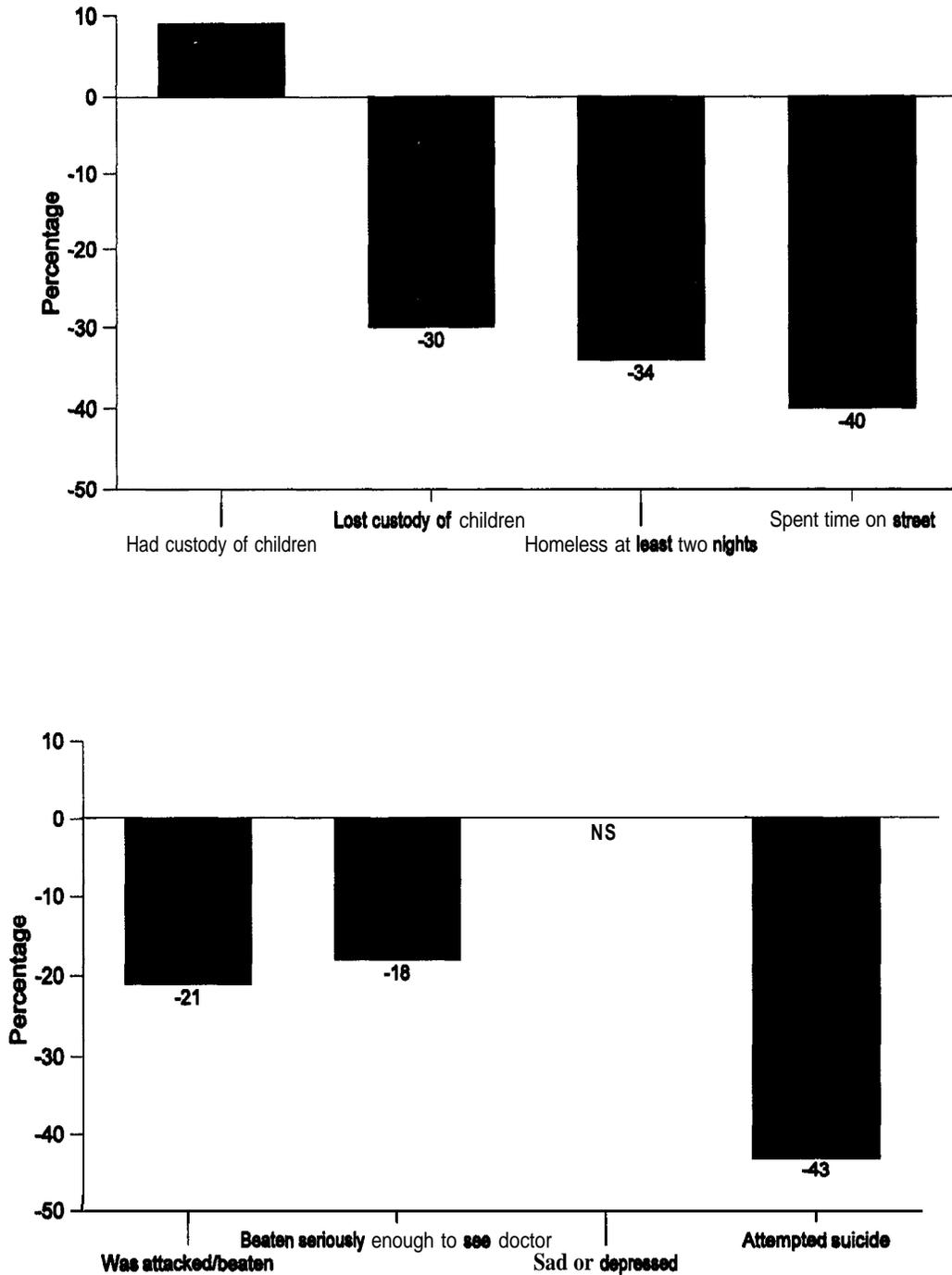
Appendix Tables B-38 and B-39 present data on changes in client lifestyle characteristics, such as retaining custody of children, homelessness, physical abuse, mental health characteristics, and employment before and after treatment in 1989-1990. Most of these characteristics changed significantly after treatment; the changes are summarized in Figures 3-15 and 3-16.

Figure 3-14. Percentage receiving additional treatment after the index episode



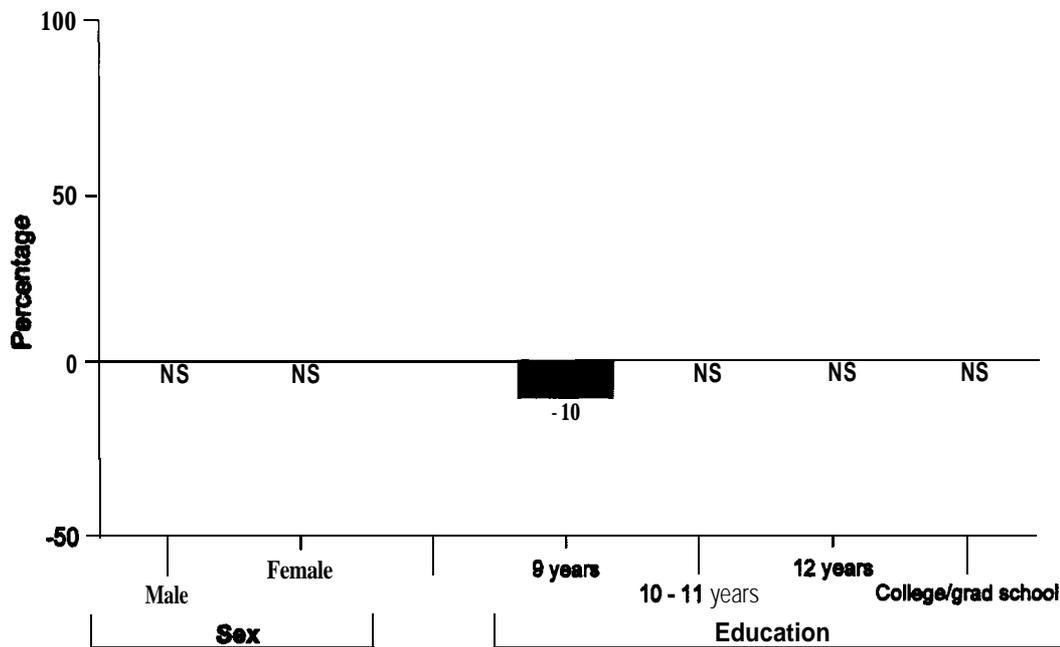
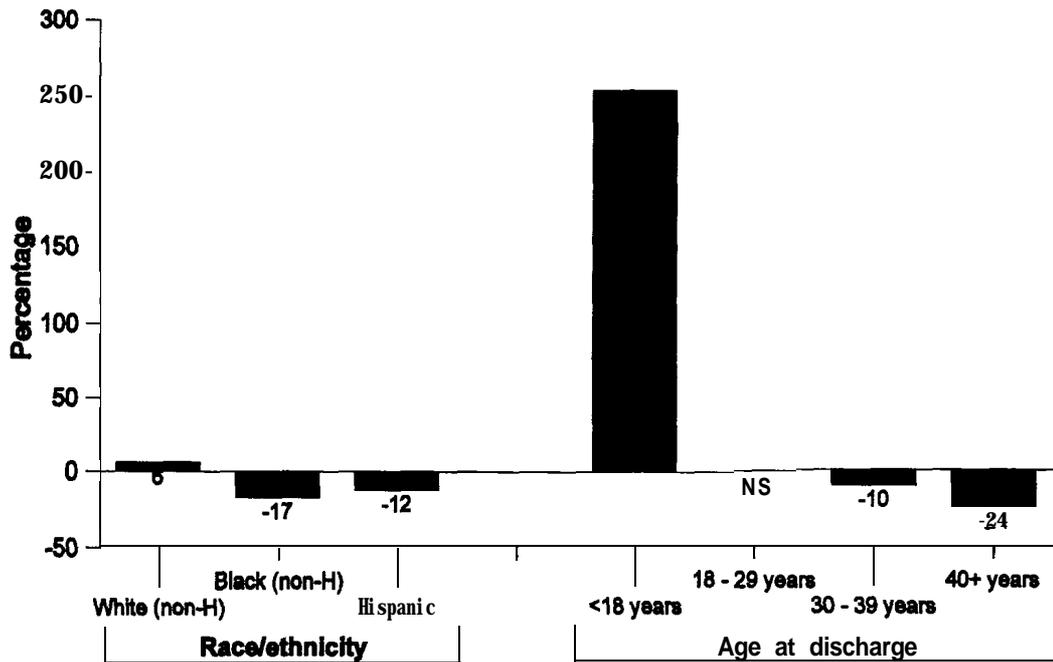
Note: Data are from Appendix Table B-40.

Figure 3-15. Percentage change\* in lifestyle characteristics



\*The percentage change is the difference between (a) the percentage reporting characteristic across the five years after treatment and (b) the percentage reporting characteristic across the five years before treatment, divided by (b). All percentages shown are significant at the 0.05 level. "NS" means that the difference was not significant. "Was attacked/beaten" means having been attacked with a weapon or seriously hit or beaten. Data are from Appendix Table B-38.

Figure 3-16. Percentage change\* in full-time employment



\*The percentage change is the difference between (a) the percentage employed full time across the five years after treatment and (b) the percentage employed full time across the five years before treatment, divided by (b). All percentages shown are significant at the 0.05 level. "NS" means that the difference was not significant. Data are from Appendix Table B-39.

After treatment there was a shift toward retaining and regaining child custody, having more reliable housing,\* avoiding physical abuse, and not attempting suicide, which dropped from 15 percent to 9 percent-despite a continuation of the earlier prevalence of sadness in the clients.

No change was found in the overall rate of full-time employment: About three-quarters of clients had been employed full time for some period before and after treatment. However, this stability masked significant negative trends: Clients were less likely to be employed in a full-time job after treatment than before if they were Hispanic (12-percent reduction), were black (17-percent), were 30 to 39 or 40 years or older (10- and 24-percent), had 9 or fewer years of education (10-percent), were in methadone facilities (25-percent), or reported heroin as their main drug (25-percent).

#### National Estimates: Converting Percentage Change to Net Differences

This section develops estimates based on the *net differences* for the entire discharged client population-that is, changes in the behavior of treatment clients when the differences in the *before/after* behavior are statistically significant. Estimates of how many individuals changed their behavior after treatment were developed by multiplying the raw differences in before/after behavior by the size of the relevant population. For example, using Table 3-9, the number of individuals who both had used any illicit drug in the five years before the 1989-1990 treatment episode and did not use any illicit drug in the five years after the episode would be computed by multiplying the 967,012 population by the 16.1-percent raw difference (i.e.,  $967,012 \times -0.161 = 155,689$ ). As a result, there were 155,689 fewer individuals (which will be rounded to the nearest 1,000; i.e., 156,000) using any illicit drug in the five years after the SROS episode than in the five years before the treatment episode. Additional computations lead to the following national estimates for drug use and crime:

#### Drug Use

- 156,000 fewer users of any illicit drug in the five years after treatment than before;
- 152,000 fewer marijuana users in the five years after treatment than before;
- 187,000 fewer cocaine users in the five years after treatment than before;
- 46,000 fewer crack users in the five years after treatment than before;
- 18,000 fewer heroin users in the five years after treatment than before;
- 22,000 fewer inhalant users in the five years after treatment than before;
- 26,000 fewer PCP users in the five years after treatment than before;
- 71,000 fewer hallucinogen users in the five years after treatment than before;
- 26,000 fewer narcotics users in the five years after treatment than before; and
- 126,000 fewer alcohol users in the five years after treatment than before.

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<sup>8</sup> Homelessness was fairly common; more than one out of every five clients (22 percent) had been homeless for at least two nights prior to treatment. One-half of these of these people (10 percent of the total population) spent that time on the streets, while the other one-half spent time both on the streets and in shelters. However, after treatment, the percentage who spent at least two nights homeless had decreased by 34 percent. The percentage who spent this time on the streets decreased by 40 percent.

*Crime* (using the naive assumption that each individual only commits these crimes once in five years<sup>9</sup>):

- 48,000 fewer vehicle thefts in the five years after treatment than before;
- 165,000 fewer driving-while-intoxicated cases in the five years after treatment than before;
- 13 1,000 fewer driving-under-the-influence cases in the five years after treatment than before;
- 82,000 fewer cases of public disorder in the five years after treatment than before;
- 101,000 fewer drug sales in the five years after treatment than before;
- 3 1,000 fewer cases of prostitution/procurement in the five years after treatment than before;
- 34,000 fewer cases of fraud/forgery in the five years after treatment than before;
- 96,000 fewer cases of theft/larceny in the five years after treatment than before;
- 50,000 fewer cases of breaking and entering in the five years after treatment than before; and
- 28,000 fewer cases of threat/attack in the five years after treatment than before.

These estimates represent the pool of behavior change within which, if treatment had any success in meeting its goals, the extent of that success is to be found. As discussed previously, the association in time between an episode of treatment and a variety of changes in behavior is not conclusive, but it encourages a search for greater precision and certainty. The next section of this chapter uses some conventional statistical analytic approaches to test the extent to which elements of treatment might plausibly be viewed as contributing to these estimated outcomes.

## CORRELATES OF TREATMENT OUTCOMES

In the preceding section, group and subgroup before/after treatment differences were compared. However, the presence of differences does not necessarily indicate which variable or set of variables explains a sufficient proportion of variance to be of value in a predictive sense and does not specify the relationships among several variables. This section presents regression models to predict outcomes of the treatment episode.

This analysis seeks to find covariation among the variables—that is, to assess the extent to which demographic characteristics (i.e., age, sex, and race/ethnicity) and behaviors (i.e., drug use and criminal behavior) coincide with outcomes in the five years after treatment, as measured by behavior (i.e., drug use and criminal behavior). The variables used in these regression analyses are not intended to be exhaustive of the relationships that could be assessed from this rich data resource.

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<sup>9</sup> In “Does Crime Pay?,” James Q. Wilson and Allan Abrahamse (*Justice Quarterly*, 9(3):359–376, 1992) write that “mid-rate” burglars/thieves commit crimes at the following rates: theft/larceny, 11.1 per year; fraud/forgery, 0.6 per year; drug selling, 98.6 per year; and vehicle theft, 0.9 per year.

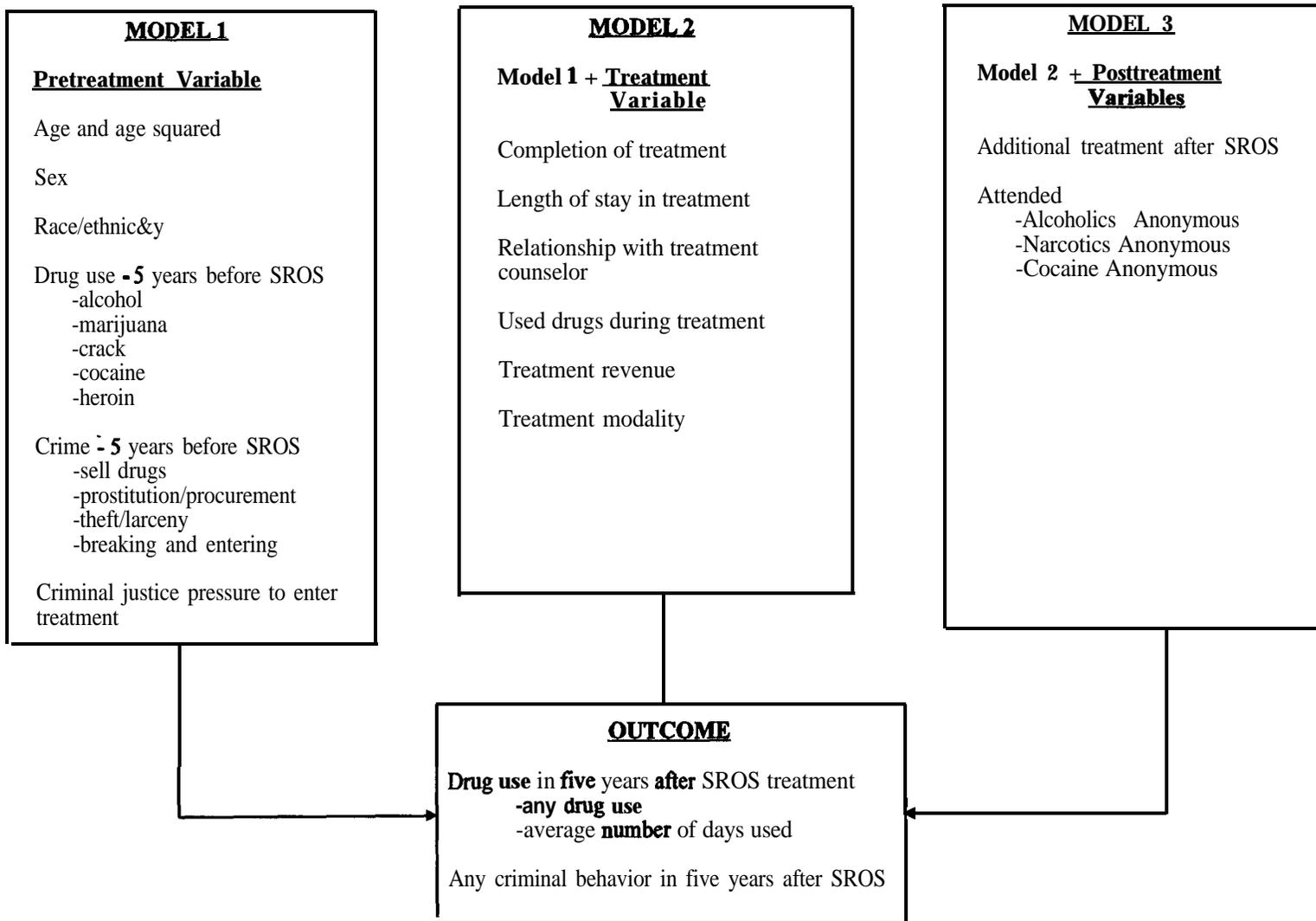
The four assumptions that structure the regression models are the following: (1) the presence, absence, or level of a characteristic before a client enters treatment is predictive to some degree of the same characteristic after treatment; (2) other pretreatment circumstances, such as education and reasons for seeking treatment, may have sustained effects on the outcome; (3) measured aspects of the treatment episode will contribute to predicting the outcome; and (4) post-treatment circumstances and factors will further contribute to predicting the outcome. The pre-, in-, and post-treatment variables are tested cumulatively, as a model is built up successively in somewhat the same way that the client experiences the sequence of conditions. This sequencing is summarized in Figure 3-17: pretreatment variables (Model 1); pretreatment and in-treatment variables (Model 2); and pretreatment, in-treatment, and post-treatment variables (Model 3). Model 1 predicts outcome after treatment as a direct test of the pretreatment variables. Model 2 assesses the increase in predictive power (R squared) and the directions of the variables in the model. Finally, Model 3 is entered, again simultaneously, to assess the strength and direction of the relationships. The models attempt to predict behavior in the five years after the treatment episode; the component variables are described below. Each model adds to the previous model (e.g., Model 2 adds treatment variables to the pretreatment variables contained in Model 1).

### Outcome Variables

The outcome variables being predicted represent two key sets of outcomes: drug use and criminal behavior in the five years after the SROS treatment episode.

- **Drug use:** alcohol, marijuana, cocaine, crack, and heroin. The first set of analyses assesses the simple dichotomous classification of reported use or **nonuse** of the drug during the five-year period following the SROS treatment episode. For this set of measures, logistic regression was used—a technique that generates “odds ratios” estimates for each predictor. Such estimates are easily interpretable probabilities that indicate how much more likely it is that an outcome would be observed if, all other elements being the same, the predictor occurs instead of a comparison condition. For example, all other things being equal, an odds ratio would estimate how much more (or less) likely an older client is to use crack after treatment than a younger client. In addition to these logistical results, a second set of regressions uses continuous variables in standard least squares linear regression analyses for the average number of days per month of drug use reported after the SROS treatment episode.
- **Criminal Behavior:** selling drugs, prostitution/procurement, larceny (shoplifting, theft, etc.), and breaking and entering. These crimes were chosen based on their overall frequency of occurrence relative to the other crimes assessed by the SROS questionnaire. The investigation—whether a particular type of crime was committed by the respondent in the five years after treatment—used logistic regression as described above and elsewhere.

Figure 3-17. Models explaining behavior after SROS treatment episode



## Predictor Variables

The variables used in each logistic regression model to predict drug use and criminal behavior are as follows:

### *Model 1— Before Treatment*

- **Demographic characteristics of the respondents:** gender, race/ethnicity, and age at the time of discharge from treatment in 1989-1990, represented by both a linear and nonlinear term to reflect possible curvature in the relationship of age to the target variables,
- Behavior before treatment: self-reported use of each major drug, including the target variable, during the five years preceding the 1989-1990 treatment episode, and self-reported commission of specific crimes in the five years before treatment.
- **Reason for entry into treatment:** in particular, whether criminal justice pressure (“legal pressure” in the shorthand of the table headings) was a factor in seeking treatment.

### *Model 2— Before and During Treatment*

- **Behavior during treatment:** self-reported use of drugs or alcohol during treatment.
- **Treatment characteristics:** treatment type (inpatient, residential, outpatient methadone, or outpatient nonmethadone, using inpatient as the common comparison group), whether the client completed the treatment plan, length of the treatment episode, and treatment revenues (costs) per patient.
- **Relationship with the principal clinician (counselor):** specifically, whether the counselor understood the client’s problems.

### *Model 3— Before, During, and After Treatment*

- **Additional treatment episodes and use of 12-step programs:** such as Alcoholics Anonymous (AA), Narcotics Anonymous (NA), and Cocaine Anonymous (CA) during the five-year post-treatment period. This may have occurred at any time during the five-year period and may be presumed to have a responsive or reciprocal relationship with drug use after the index treatment.

## Prediction of Alcohol and Drug Use

### *Alcohol Use*

Appendix Table B-41 presents the set of regression models that attempt to predict any alcohol use (five times or more) in the five years after the 1989–1990 treatment episode. For each predictor in each model, the table reports the estimated odds ratio, a statistic that describes the association between the predictor variable and the target variable, and indicates which odds ratios were statistically significant at the conventional level of  $p < 0.05$ . In other words, the model estimation procedure calculated how strongly the individual predictors were associated with client use of alcohol five or more times after treatment. Although each of the stated predictors was used in the respective models, only some of the predictors yielded coefficients that were significantly different from 1.00—that is, only some predictors increased or decreased the chances of observing post-treatment alcohol use compared with the odds of such use occurring in the comparison condition.

In the simple pretreatment model (first column), the two age variables were significant, showing that older individuals were less likely to use alcohol than younger individuals and that the relationship was not strictly linear. In the strongest correlation, those who used alcohol five or more times across the five years before treatment (versus those who did not) were almost 11 times (10.91) more likely to use alcohol after treatment, all else being equal. Alcohol use after treatment was not predicted by the use of any illicit drug before treatment. Men were almost one-and-one-half (1.43) times more likely than women to use alcohol after treatment, and Hispanics were one-half (0.54) as likely as whites. Finally, those who entered treatment under legal pressure were nine-tenths (0.88) as likely to use alcohol after treatment as those under no legal pressure.

Model 2 (second column) added in-treatment variables to the predictors in Model 1. The addition of the in-treatment variables yielded only minor changes in the strength and significance of the Model 1 predictors. Specifically, when in-treatment as well as pretreatment variables were taken into account, clients who used alcohol before treatment (versus those who did not) were still found to be 11 times (11.13) more likely to use alcohol after treatment; males were almost one-and-one-half (1.42) times more likely to drink than females, and Hispanics were one-half (0.57) as likely as whites to do so. Only the odds ratio attached to legal pressure faded from a significant odds ratio (0.88) to a nonsignificant one (0.96).

Among the in-treatment predictors, clients who used drugs during treatment (versus those who did not) were twice (2.03) as likely to use alcohol after treatment. Clients who remained in treatment for one to six months were about one-half (0.55) as likely to use alcohol after treatment as those who were in treatment less than one week, and clients who remained in treatment six months or longer were only one-third (0.33) as likely to drink after treatment as those who remained in treatment for less than one week. Clients who believed their primary counselor understood the client's problems well were only three-quarters (0.74) as likely to use

alcohol after treatment as those who reported that their counselor did not understand their problems well. Finally, clients discharged from methadone treatment were less than one-half (0.40) as likely to use alcohol after treatment as those discharged from inpatient facilities. The revenue-per-patient variables did not predict alcohol use after treatment.

In the final model (third column) the two post-treatment variables were added to the predictor side of the equation. These additions yielded only slight changes to the odds ratios and significance levels calculated in Model 2. In particular, clients with one- to six-month lengths of stay were slightly more likely than in Model 2 (0.64 instead of 0.55) to be post-treatment drinkers, and the odds ratio slipped from a significance of  $p \approx 0.01$  to  $p \approx 0.08$ , just out of the  $p < 0.05$  range. Clients who had additional treatment episodes after treatment were about 30 percent more likely to use alcohol after treatment than those who did not return to treatment (their use of alcohol is probably associated with a return to treatment); AA/NA/CA attendance was not significantly associated with any change in the likelihood of drinking. The multiple  $r^2$  for Model 3 was 0.19—that is, all the elements in the combined model accounted for 19 percent of the total variance in the target variable. Model 2 accounted for 18 percent, and the pretreatment variables alone (Model 1) accounted for 15 percent of the variance. In other words, the pretreatment variables in the model were able to account for about six times as much of the predicted outcome as the in-treatment variables did when they were added.

### *Any Illicit Drug Use*

Appendix Table B-42 presents results of regression models for any illicit drug use in the five years after treatment. Unlike alcohol, the age variables were not predictive for any illicit drug use. However, use of any of the principal drugs before treatment was highly predictive of post-treatment use, with odds ratios of about 1.7 for pretreatment cocaine and crack use and more than 5 to 1 for pretreatment users versus nonusers of marijuana or heroin. Those who used alcohol before treatment were one-half as likely to use illicit drugs as those who did not, and men were 60 percent more likely than women to use any illicit drug after treatment. Clients with legal pressure were 12 percent more likely to use any illicit drug after treatment than those without legal pressure, a small but statistically significant difference.

According to Model 2, clients who completed their treatment plans were 61 percent as likely (that is, 39 percent less likely) to use any illicit drug after treatment than those who did not. Those whose lengths of stay in treatment were one week to less than one month were about 59 percent as likely to use any illicit drug after treatment as those who stayed less than one week, and clients who remained in treatment six months or longer were only 42 percent as likely. Further, clients who used drugs during treatment were more than three times as likely to use any illicit drug after treatment as others who did not.

Model 3 indicates that those who had additional treatment **episodes** after treatment were 58 percent more likely to use any illicit drug after treatment as those who did not return to treatment. Model 3 accounted for 42 percent of the variance in any illicit drug use after

treatment, Model 2 for 39 percent, and Model 1 for 35 percent. The pretreatment variables accounted for about ten times as much of the predicted variance in **modelled** outcomes as the in-treatment measures did when added to the model.

### ***Marijuana Use***

Appendix Table B-43 covers marijuana use in the five years after treatment. Clients using marijuana before treatment were nearly 25 times (24.29) as likely to use marijuana after treatment as those who did not. Pretreatment use of cocaine increased the odds of post-treatment marijuana use by 48 percent. Males were twice (2.1) as likely to use marijuana after treatment than females; neither legal pressure nor race/ethnicity predicted marijuana use after treatment.

Clients who remained in treatment six months or longer were one-half (0.50) as likely to use marijuana after treatment as those who remained in treatment for less than one week, and those who used drugs during treatment were almost four times (3.71) as likely to use marijuana after treatment as those who abstained. Model 3 indicated that clients who received additional treatment were 14 percent more likely to use marijuana after treatment than those who did not return. Model 1 accounted for 43 percent of the variance in marijuana use after treatment; Models 2 and 3 both accounted for 48 percent; thus, pretreatment characteristics accounted for about ten times as much of the variance in outcomes as the in-treatment elements did when added to the model.

### ***Cocaine Use***

Appendix Table B-44 covers cocaine use in the five years after treatment. Use of cocaine before treatment added more than 750 percent to the odds of using this drug after treatment (8.58); and pretreatment heroin or marijuana use made it 2.4 and 1.9 times as likely, respectively, that cocaine would be used after treatment. Differences in age, sex, race/ethnicity, and legal pressure did not predict cocaine use after treatment.

According to Model 2, clients who remained in treatment six months or longer were only one-third as likely to use cocaine after treatment as those who stayed for less than one week. In addition, clients who used drugs during treatment were three times as likely to use cocaine afterwards as those who did not use drugs during treatment. There were no statistically significant differences among the treatment types or revenue variables, but subsequent treatment was associated with post-treatment cocaine use at an odds ratio of 1.09. The variance accounted for by the three models was 22, 25, and 26 percent, respectively; most of the predicted variance was due to pretreatment variables.

## **Crack** Use

Appendix Table B-45 reports on regression models of crack use after treatment. Client use of crack before treatment made crack use after treatment more than 8 times as likely. Cocaine use before treatment added 58 percent to the likelihood of post-treatment crack use, and blacks were almost twice (1.93) as likely as whites to use crack after treatment. After controlling for pretreatment use, client age did not predict post-treatment crack use.

Adding the in-treatment variables with Model 2, longer stays did not yield a statistical difference in crack use after treatment (the odds ratio for a six-month length of stay was not significant), although a further analysis among clients in inpatient, residential, and methadone facilities separately did indicate a length-of-stay effect in each type. Overall, clients who used drugs during treatment were more than twice (2.3) as likely to use crack after treatment, and clients discharged from outpatient nonmethadone treatment were one-half (0.47) as likely to use crack as those discharged from inpatient treatment.

According to Model 3, clients who had additional treatment episodes after the 1989-1990 episode were about one-quarter (1.26) more likely to use crack after treatment than those who did not return to treatment. The variances accounted for by the three models were 27, 29, and 32 percent, respectively.

## *Heroin Use*

Appendix Table B-46 summarizes the models predicting heroin use in the five years after treatment. Using heroin before treatment was associated with nearly a fiftyfold increase (48.91) in the odds of using heroin after treatment. Using cocaine before treatment almost doubled (1.95) the likelihood of heroin use after treatment. Age, sex, and race did not generally predict heroin use after treatment, but Hispanics were twice as likely as whites (2.27) to use heroin after treatment. Legal pressure did not predict heroin use generally, but in a separate analysis, methadone clients with pressure from the criminal justice system were 30 percent more likely than those without it to use heroin.

Length of stay (Model 2) had no significant effect on post-treatment heroin use, but clients who used an illicit drug during treatment were more than twice (2.34) as likely to use heroin after treatment as those who did not use any illicit drug during treatment. Finally, clients discharged from outpatient nonmethadone treatment were less than one-third (0.29) as likely to use heroin in the post-treatment period compared with inpatients, and facility revenues per patient had a small but significant association with heroin use after treatment..

There was little difference in post-treatment heroin use between those with and without additional treatment episodes and between those who did or did not attend **12-step** programs. Model 1 accounted for 44 percent of predicted variance, whereas the other two models accounted for 47 percent; none of the detailed measures of treatment effects was nearly as

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powerful a predictor as pretreatment heroin use, which had a stronger effect on post-treatment heroin use than any other predictor-target pair in all the analyses. This result may serve as testimony toward Kaplan's (1983) nomination of heroin as "the hardest drug."

### *Summary*

Statistical models of post-treatment drug use outcomes were able to account for close to one-half the variance in heroin, marijuana, and any illicit drug use; one-third of the variance in crack use; and one-quarter and one-fifth of the variance in cocaine and alcohol use, respectively. In every instance, the strongest predictor of post-treatment drug use was the use of the same drug (or any illicit drug in predicting the same global variable) in the pretreatment period, a relationship that was especially strong for heroin. Cocaine was also predictive of both crack and marijuana use, and marijuana and heroin were predictive of cocaine use, which perhaps indicates a degree of commonality of use that is somewhat distinctive of cocaine. Using any illicit drugs *during* treatment, even controlling for pretreatment use, was also predictive of every type of drug use (including alcohol) after treatment. The power of past drug use to predict future drug use is perhaps another way of stating the chronic, habitual, addictive, and in short, the highly persistent nature of what treatment programs are treating.

Even controlling for levels of pretreatment use, males and younger clients were more likely to use alcohol and marijuana after treatment, blacks were more likely to use crack, and Hispanics were less likely to drink. The strength of these demographic associations was roughly similar to the strength of length of stay as a predictor of alcohol, marijuana, cocaine, or any illicit drug use after treatment. Length of stay was not strongly associated with post-treatment crack or heroin use; however, for these two drugs, outpatient nonmethadone treatment substantially reduced the odds of post-treatment use compared with inpatient treatment, which is generally much shorter term. Thus, the length-of-stay variable was masked by its collinearity with these differences in type of treatment. Counselor understanding of the client's problems was significantly associated with lower alcohol use and (in one of two models) heroin use, but not other drugs—a finding that invites further work.

Finally, small but significant associations were found between every measure of post-treatment drug use and additional treatment during the post-treatment period. It seems most likely that the return to treatment followed rather than (or as well as) preceded drug use in most of these instances, but the SROS data do not permit definitive conclusions to be drawn about the sequence of these post-treatment events.

### Average Number of Days Used Drugs per Month: Ordinary Least Squares Regressions

The previous section described the results of logistic regression analysis predicting the use of alcohol and several drugs during the five-year period after treatment. A parallel series of analyses was conducted using the technique of ordinary least squares (OLS) regression and measuring the average number of days per month of drug use as the target variable.

## ***Alcohol***

Appendix Table B-47 presents the results of OLS regression analyses using the same predictor variables as in the logistic series to model the average number of days per month of alcohol use after treatment as the dependent variable. For Model 1 (pretreatment), the significant predictor variables were the following: The number of days per month the respondent reported using alcohol before treatment was a significant predictor of reported use after treatment. The regression weight predicted a 0.3 increase the number of days per month of reported alcohol use after treatment for each one-day increase in the number of days of reported use before treatment. Although the number of days per month of pretreatment reported use of marijuana, crack, and cocaine were unrelated to the number of days per month of post-treatment reported alcohol use, there was a small, but significant, relationship with heroin ( $B = 0.14$ ). The strongest variable in Model 1 was sex: Controlling for the other variables in the model, males reported use of alcohol 1.6 days per month more than females after treatment.

Model 2 added in-treatment variables. The length-of-stay variables showed the strongest coefficients. Compared with those who stayed in treatment for less than one week, clients who stayed in treatment for one week to less than one month reported an average of 2.2 fewer days per month of alcohol use after treatment; clients whose treatment stays were one to less than six months reported an average of 3.3 fewer days per month of alcohol use after treatment; and a stay in treatment of six months or more resulted in an average of 5.3 fewer days per month of alcohol use after treatment. Clients who reported using drugs during treatment were estimated to average three days per month more alcohol use after treatment, compared with those who did not use drugs during treatment. The regression equations for each of the three models explained less than 20 percent of the variance in days per month of alcohol use after treatment.

## ***Marijuana***

Appendix Table B-48 presents the regression analyses for the average number of days per month of reported marijuana use after the treatment episode. Age was found to be a significant explanatory variable for post-treatment marijuana use, and each additional year of age predicted a lower average of four-tenths of a day per month in reported use of marijuana after treatment. Each day per month of pretreatment marijuana use predicted an additional 0.3 days of post-treatment marijuana use per month. The number of days per month of alcohol, crack, cocaine, and heroin use before treatment were not associated with changes in the number of days per month of marijuana use after treatment. Males reported using marijuana 1.6 days per month more than females after treatment.

Model 2 added treatment variables. The length-of-stay variables were not significant. The use of drugs during the treatment episode was associated with an average of 3.1 more days per month of reported marijuana use after treatment, compared with those who reported not using drugs during treatment. The complete (Model 3) regression equation predicted 28 percent of the variance in days per month of marijuana use after treatment.

## **Crack**

Appendix Table B-49 contains regression coefficients predicting the average number of days per month of reported crack use after the treatment episode. The age variables were not significantly related to the target crack variable. A significant Model 1 (pretreatment) variable was the average number of days per month of crack use before treatment; each additional day of reported use before treatment was associated with a 36-percent increase in the average number of days per month of reported crack use after treatment. Pretreatment days per month of marijuana, cocaine, and heroin use were not related to reported post-treatment crack use. Black (non-Hispanic) clients used crack 1.38 days more per month after treatment compared with whites. There was a weak effect of 0.18 days per month more reported crack use after treatment for those who were under legal pressure to enter treatment.

In Model 2, the length-of-stay variables predicted lower crack use after treatment for longer stays, but none of these coefficients was statistically significant. Use of drugs during the treatment episode was associated with an average of 1.5 days per month more of reported crack use after treatment, compared with those who reported not using drugs during treatment. Model 3 predicted 29 percent of the variance in reported crack use after treatment.

## **Cocaine**

Appendix Table B-50 models the average number of days per month of reported use of cocaine after the treatment episode. Age was not related to the number of reported days per month of cocaine use after treatment; likewise, the number of pretreatment days per month of reported alcohol, marijuana, and crack use also were not related. Statistically significant Model 1 variables included the number of days per month of reported pretreatment use of cocaine and of heroin. Each additional day of reported cocaine use before treatment was associated with a 0.3-day increase in the average number of days per month of reported cocaine use after treatment, and each additional day of reported heroin use before treatment was associated with a 0.14-day increase in the average number of days per month of reported cocaine use after treatment. Sex and race/ethnicity were not statistically significantly related to days per month of reported cocaine use after treatment.

Model 2 added treatment variables, and the length-of-stay and drug-use variables showed statistically significant results. The shorter length-of-stay variables showed negative coefficients, but they were not statistically significant. However, clients who reported a treatment stay of six months or more also reported an average of 1.6 fewer days per month of cocaine use after treatment than did those with the shortest reported treatment stay. Finally, those who reported using drugs during the treatment episode reported an average of 1.6 more days per month of cocaine use after treatment than did those who reported not using drugs during treatment. Model 3 predicted 26 percent of the variance in reported cocaine use after treatment.

## *Heroin*

Appendix Table B-51 models the average number of days per month of heroin use after the treatment episode. Age was not related to this outcome variable. Each day of reported heroin use before treatment was associated with an increase of 0.8 days per month in reported heroin use after treatment. Pretreatment alcohol, marijuana, crack, and cocaine use were not related to the number of days per month of post-treatment heroin use. Neither sex nor race/ethnicity predicted the number of days per month of heroin use after treatment.

Model 2 length-of-stay variables did not predict the average number of reported days per month of heroin use after treatment. Clients who reported completion of treatment plans reported 1.2 fewer days per month of heroin use after treatment than did those who reported not completing treatment. Clients who reported using drugs during the treatment episode reported six-tenths of a day per month more of heroin use after treatment than those not using drugs during treatment.

The heroin OLS Model 3 predicts 46 percent of the variance in days per month of heroin use after treatment.

## *Summary*

The results of the OLS regressions reproduced many of the logistic model results, but they departed in ways that invite a cautious reminder about the ever-present potential for specification error in building statistical models. The main cure for this type of error is continued careful and intensive study of the data and comparison of results with other data sets as these become available. The power of drug use before and during treatment to predict drug use after treatment was confirmed by these analyses, as was the association of crack use with black clients and alcohol and marijuana use with males. The associations between length of stay in treatment and post-treatment drug use were much weaker in the OLS than in the logistic models, reaching significance for individual length-of-stay coefficients only for post-treatment alcohol and cocaine use. The firm association in the logistic regressions between later treatment episodes and post-treatment drug use was also not evident in the OLS models.

## Prediction of Criminal Activity After Treatment

### *Selling Drugs*

Appendix Table B-52 displays the results of logistic regression models that predict drug trafficking after treatment. Selling drugs before treatment was the major predictor, increasing the odds of post-treatment drug selling by about 10 to 1 in every model. Older clients were less likely-and male and black clients more likely-to sell drugs after treatment, and clients who had committed theft or larceny before treatment were 75 percent more likely to sell drugs after treatment. Of the treatment variables assessed in Model 2, only length of stay and whether the respondent had used drugs during treatment had effects on selling drugs after treatment: Odds

were one-third as likely for longer stays and three times, as likely for drug users during treatment. Clients with additional treatment episodes were 11 percent more likely to sell drugs than those without additional episodes. Model 1 accounted for 31 percent and Models 2 and 3 accounted for 35 percent of the variance in selling drugs after treatment.

### **Prostitution/Procurement**

The odds of engaging in prostitution or procurement of sex for money (see Appendix Table B-53) were much higher (30.27 in Model 3) after treatment if this activity had preceded treatment, and clients who were black or committed burglary (breaking and entering) were about three times as likely to engage in post-treatment prostitution or procurement.

Length of stay was an important variable; clients who stayed in treatment for six months or more were only one-sixth as likely to commit these offenses. Drug use during treatment was also predictive, doubling the odds. Those with additional episodes of treatment were slightly more likely to be involved in prostitution/procurement. Model 1 accounted for 33 percent of the variance, whereas Models 2 and 3 accounted for 40 and 41 percent, respectively.

### **Larceny/Theft**

There were no significant demographic predictors of post-treatment larceny and theft (see Appendix Table B-54). Only pretreatment larceny or theft (odds ratio about 7) or burglary (slightly more than 2) increased the odds, and lengths of stay in excess of six months decreased them (0.41). Drug use during treatment increased the odds (2.12), as did subsequent treatment or AA/NA/CA attendance (1.23 and 1.02, respectively). The respective models accounted for 23, 25, and 29 percent of the variance.

### **Breaking and Entering**

The final criminal activity modeled by logistic regression techniques was breaking and entering, or burglary (see Appendix Table B-55). Pretreatment commission of burglary and prostitution/procurement were strong predictors (8.58 and 2.66 in Model 3, respectively), but clients who were black or male were also more likely to commit burglary after treatment (2.20 and 2.72, respectively). In addition, subsequent treatment and AA/NA/CA attendance were also correlated at higher odds (1.27 and 1.02, respectively). Only medium-term length of stay was a significant predictor in Model 2, and this model accounted for only an additional one percent of variance over the 27 percent accounted for by Model 1.

### **Summary**

The patterns in the logistic models of post-treatment criminal activities closely followed the patterns seen for drug use after treatment. The models accounted for about one-third of the variance in criminal outcomes, and specific criminal behavior before treatment was the strongest

predictor of specific criminal behavior after treatment. Moreover, pretreatment prostitution/procurement and larceny further increased the odds of other kinds of post-treatment criminal activities. Even controlling for criminality before treatment, males were more likely than females to sell drugs and commit burglaries after treatment, while females were more likely to engage in prostitution/ procurement after treatment. Longer lengths of stay in drug treatment reduced the likelihood of each kind of criminal behavior, although the relationship was less robust for burglary; outpatient nonmethadone treatment also predicted lower larceny rates relative to inpatient treatment. Drug use during treatment increased the odds of post-treatment criminality for three out of the four crime types analyzed, and return to treatment was moderately associated with criminality during the same post-treatment period.

## MORTALITY DURING THE POST-TREATMENT PERIOD

In addition to the 1,799 SROS sample respondents interviewed five years after treatment, 277 clients-about nine percent of the sample-were found to have died during the post-treatment period. In order to gain some value from this information, this section examines:

- Death rates in the client population compared with the corresponding (age-sex-race-adjusted) total resident U.S. population, including comparisons of overall death rates and rates for each of four demographic groups (i.e., white males, white females, black males, and black females); and
- Characteristics of clients who were known to be deceased and those who were known to be alive at the time of the SROS interviewing field period in 1995-1996.

### Comparison of Deaths Among Clients in the SROS Sample and in the US. Population

Since death rates in the US. population are known to differ appreciably among groups sorted by age, sex, and race, it was necessary to control for these variables in order to compare usefully the mortality of treatment clients to that of the total resident population. One way to accomplish this was to use death rates that were specific for each age, sex, and race, which were readily available in annual Vital Statistics reports. The 1990 rates were used (in contrast to death rates averaged across all four years or from the midpoint year, 1993) because age-specific death rates have not changed significantly in the past few years,<sup>10</sup> and the decennial census in 1990 provided population denominators considered more accurate than the estimates of the population in noncensus years. The conclusions of the following analyses would not be affected by the small variations that would result from using adjusters from other years.

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<sup>10</sup> Garner P. Hudson, "Advance Report of Final Mortality Statistics, 1993. "

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Estimation of the expected number of deaths in the sample involved multiplying the five-year age-sex-race-specific death rates of the United States by the size of the initial SROS sample in each age-sex-race category at the beginning of the sample period, using the following steps:

- The 1990 age-sex-race-specific death rates per 100,000 were multiplied by five to reflect the observed interval of five post-treatment years.
- This proportion was multiplied by the sample size in each group, and the result was the expected number of deaths in each age-sex-race group. The resulting numbers of deaths for each age group and category were then summed to produce the number of each demographic subgroup that would be expected to die during the five-year period.
- This process was carried out separately for blacks and whites, and for males and females; the four totals sum to the total number of sample clients who would be expected to die during the period.

The age distribution of the SROS sample included very few cases younger than 15 years or older than 60 years, and the number of Native Alaskans, American Indians, and Asian or Pacific Islanders in the sample was small. Hispanics are included within their self-identified racial subgroup. This analysis therefore refers to whites and blacks 15 to 60 years of age at the time of discharge from the 1989-1990 index treatment episode, and it includes Hispanics in both the expected and observed death totals.”

Table 3-13 presents the comparison between expected and observed deaths in most of the client population. The number of deaths in the client population was 7.3 times higher than would be expected if the total population were matched to it in terms of age, sex, and race. Instead of the 31 expected deaths, the client group had 224 observed deaths.

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<sup>11</sup> This procedure excludes from the analysis 53 individuals who died. **They came from categories** having such a small number of cases that results are not meaningful. The categories were: under age 15 or over age 60 at discharge, and certain minorities.

**Table 3-13. Comparison of expected and observed deaths in the SROS client sample**

Population group*	Sample n	Annual Death Rate/100,000 Population**	Expected Deaths (5 years)	Observed Deaths (5 years)	Ratio of Observed to Expected Deaths
White males	1,112	377.6	13.3	108	8.1
White females	411	190.4	1.9	35	18.4
Black males	460	837.4	13.3	67	5.0
Black females	191	392.8	2.0	14	7.0
<b>Total</b>			<b>30.5</b>	<b>224</b>	<b>7.3</b>

\*Population groups include Hispanics within self-designated white or black subgroups..

\*\*Source of annual death rates: National Center for Health Statistics, *Vital Statistics of the United States*, 1991.

For subgroups of the SROS population:

- **White males discharged from treatment in the SROS sample had 108 observed deaths, rather than the expected 13 deaths, giving this population about eight times as many deaths as expected.**
- **White females discharged from treatment in the SROS sample had 35 deaths, rather than the expected two deaths, giving this population nearly 18 times as many deaths as expected.**
- **Black males discharged from treatment in the SROS sample had 67 deaths, rather than the expected 13 deaths, giving this population about five times as many deaths as expected.**
- **Black females discharged from treatment in the SROS sample had 14 deaths, rather than the expected two deaths, giving this population seven times as many deaths as expected.**

The high observed death rate in the client sample does not seem surprising in view of other information about the health status of the treatment group. For example, 33.5 percent of the weighted client population rated their health status as fair or poor in the five years before treatment; by way of comparison, *Current Estimates from the National Health Interview Survey* of 1990 reported that 9.5 percent of the total population reported itself to be in fair or poor health. Since the interviewed group did not include the part of the sample who had died, whose average health status before treatment could reasonably be

assumed to be worse than the surviving group's health status, it is not surprising to observe a death rate exceeding the ratio of 3.5 to 1 (for poor and fair health; i.e., 33.5/9.5) by a factor of two.

This analysis further indicates that observed deaths among white female clients exceeded their expected deaths by a much larger margin than the other client sex-race groups. This is partly determined by the low expected death rate among white females in the client population, 190 deaths per 100,000 lives, in comparison with white males at 378, black females at 393, and especially compared with the high expected mortality among black males at 837 per 100,000.

#### Comparison of Known Deceased and Living in SROS Sample

The 277 deceased clients in the SROS sample were weighted up to an estimated 93,000 individuals who died in the five years after discharge from the SROS episode. A comparison of continuous variables for the known dead and living is presented in Table 3-14.

**Table 3-14. Comparison of treatment features of clients who were deceased and living at followup**

<b>Treatment Feature</b>	<b>Deceased (sample n)</b>	<b>Living (sample n)</b>	<b>Total (sample n)</b>
Average months of treatment episode	2.9 (260)	3.8 (1,778)	3.7 (2,038)
Average age at discharge from treatment episode	41.3* (262)	30.3* (1,747)	31.6 (2,009)
Number of services during treatment	3.5 (248)	3.2 (1,698)	3.3 (1,946)
Number of lifetime treatment episodes	3.0 (188)	3.0 (937)	3.0 (1,125)

\* Difference statistically significant at the 0.05 level.

A comparison of the living and deceased clients yielded the following results:

- Those who died in the five years after treatment were about ten years older at discharge from treatment than those who survived.
- The index length-of-stay of living versus deceased clients appeared to be shorter, but the difference was not statistically significant.
- The average number of specific treatment services rendered to living versus deceased clients in the SROS episode was the same.
- The average number of treatment episodes received by living versus deceased clients before the index treatment episode was the same.

A logistic regression was run to see whether any of the known demographic or treatment characteristics could be used to predict mortality in the five years after clients left the SROS index episode. Unfortunately, many of the predictor variables used in the regression analyses reported earlier in this chapter were either not available for the deceased or resulted in such a large number of missing cases as to make the analysis impractical (and in some instances misleading). The results shown were based on a model chosen to maximize consistency with the other analyses in this report without sacrificing accuracy due to lost sample size through missing data. The multiple  $r^2$  was low at 0.11 or 11 percent of variance accounted for. Female respondents were one-half (0.50) as likely as males to have died—although, as shown above, this places them at much greater death rates than would be ~~expected~~— while older respondents were much more likely to die than younger clients. Finally, although other service measures such as length of stay and number of services did not discriminate between living and deceased clients, those clients who completed their treatment program were 30 percent less likely (odds ratio of 0.70) to die than those who did not complete treatment.

## APPENDIX A: DETAILED METHODOLOGY

This appendix expands on Chapter II and presents more detailed descriptions of the methods used to develop this report. The appendix is organized into the following sections:

- SROS Sample Design
- Fieldwork and Data Preparation
- Measurement Issues of SROS Questionnaire
- External Validity of Survey Responses
- Response Rate
- Weighting of Data
- Preparation of Unbiased Estimates of Target Population: SUDAAN
- Analytic Techniques Employed: Before/After Analysis and Regression

### SROS SAMPLE DESIGN

SROS was designed to measure changes in the behavior of a nationally representative sample of clients discharged from treatment, in order to enable policy makers and the public to assess more accurately the national effects of treatment programs. In constructing a national probability sample of treatment outcomes stratified by the major modalities of drug treatment, the Services Research Outcomes Study (SROS) provides the first nationally representative look at: (1) baseline on a 1990 cohort of patients against which to compare improvements in the national treatment system during the 1990s (i.e., block grant expansion, large-scale demonstration grants, and other efforts at treatment improvement); (2) a before-to-after treatment comparison to address the question “Does treatment work?”; (3) follow-up of clients at five years after discharge from the *SROS index* episode; and (4) an examination of repeated treatment both before and after the indexed episode.

Detailed descriptions of the history of the facility universe and facility and client samples are presented in Tables 2-1 and 2-2 in Chapter II. In April 1990, the National Institute on Drug Abuse (NIDA) listing of all known drug and alcohol treatment facilities, consisting of 10,649 facilities, served as the universe for the Drug Services Research Survey (DSRS). DSRS sampled 1,803 facilities for its DSRS Phase I survey of facilities; 1,183 facilities responded, comprising 138 hospital inpatient facilities, 185 residential facilities, 80 outpatient detoxification/maintenance facilities, 372 outpatient drug-free facilities, 9 1 alcohol-only facilities, and 317 facilities whose facility type was unknown. Since DSRS’ focus was on drug treatment, the alcohol-only facilities and those of unknown type were excluded from the DSRS Phase II facility sampling frame. DSRS II sampled 146 facilities from the DSRS I respondents and abstracted 2,222 client records from 120 facilities.

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Five years after DSRS, SROS recontacted the 120 DSRS facilities, and 99 of these facilities are part of SROS, including a few facilities that had closed or merged but whose records were available. Cooperation of the facilities in SROS was crucial, as the DSRS sampling list of discharged clients was retained by each facility. Only through facility cooperation was the project team able to contact clients in the sample and request their participation in SROS.

The five-year **followup** was sought for 1,706 of the original client sample plus a supplemental sample of 1,341 clients added in SROS, totaling 3,047 clients who had been discharged from 99 drug treatment facilities in the 12 months ending August 31, 1990. Clients had been selected from facilities whose predominant type was inpatient, residential, outpatient detoxification, and outpatient drug free. For the five-year followup, 2,489 clients (82 percent) in the sample were located in 1995 and 1996; the remaining 558 clients (18 percent) were not located before time and resources for fieldwork expired. Nine percent (277 clients) had died between discharge from drug treatment and time for SROS interview. Less than one percent (14 clients) were ineligible for the study after screening, and a total of 1,799 were interviewed.

## FIELDWORK AND DATA PREPARATION

This section describes how the National Opinion Research Center (NORC) organized and conducted SROS data collection activities. Stage 1 involved facility-level data collection and records abstraction with the cooperation of a nationwide sample of 120 drug treatment facilities. Stage 2 consisted of respondent interviews with a target sample of 3,000 clients who were discharged from treatment at those facilities during a **12-month** index period during 1989-1990. This appendix summarizes survey protocols and procedures used during both data collection stages; it also provides operational outcomes and results.

### **Stage 1: Facility-Level Data Collection**

During Stage 1 data collection, NORC attempted contact with the 120 facilities that contributed client-level abstraction data to DSRS, to request cooperation with the SROS followup. When located facilities were approached, SROS field staff requested that directors facilitate completion of four data collection tasks: ,

- Complete the Program Director Interview;
- Locate client sampling lists left at facilities by DSRS field staff;
- Reselect from client discharge lists in the index year, as needed, for the supplemental sample design or for replacement of missing DSRS client sampling lists; and
- Locate all selected client records for abstraction of fresh data.

### *Pretest of Facility-Level Data Collection at Eight Sites*

Before launching the national SROS facility-level data collection, NORC conducted a field test of all associated survey instruments and procedures. The test occurred in the spring of 1992 at eight facilities chosen from the DSRS facility sample — two from each treatment modality, clustered in an eastern and a midwestern metropolitan area. The pretest demonstrated the feasibility of **followup** contacts with the targeted facilities. Most Program directors remembered the DSRS study and agreed to participate in SROS. Site visits for data collection tasks were readily scheduled at seven of the eight facilities. One facility was lost because it was in the process of changing owners, and no responsible spokesperson could be identified in the brief course of the pretest fielding. The Program Director Interview was conducted at the seven other facilities. At six of the seven remaining facilities, the index year discharge lists earmarked by the DSRS sampling operation were recovered, and the sampling information was determined to be usable. When the link to the DSRS client sample could not be found, it appeared that reconstruction of the index year discharge lists for fresh sampling would be feasible.

Two instruments for client record abstraction were successfully pretested — one for drawing, identifying, and locating information from all selected client records, and one for duplicating DSRS client data with clients newly selected for the supplemental sample.

### *Preparing for Facility-Level Activities at All 120 Sites*

Following the pretest, final plans were made, interviewers were recruited, and training programs were prepared so that field operations could be launched promptly after approval by the Office of Management and Budget (OMB), which occurred in early 1994.

There were several criteria for recruitment of field staff: experience on drug outcome studies like the California Alcohol and Drug Treatment Assessment, and studies approaching disadvantaged populations, experience in abstraction from medical records, and proximity to facility clusters. Interviewer training focused on all protocols involved in implementing site visits to complete the client sampling, records abstraction, and conduct of the Program Director Interview. The three-day training for facility site visits gave the field staff practice with forms and procedures to structure client sampling in a variety of situations, ranging from effortless retrieval of a DSRS sampling list in facility files, through relisting index-year discharges and reconstructing the DSRS sample.

In addition, interviewers were trained on forms and procedures for selecting a supplementary sample once the DSRS client sample for a facility was identified and set aside. Practice with the Program Director Interview and with two abstraction instruments — one designed to obtain identifying and locating data for every selected client and one to replicate DSRS abstraction for freshly selected clients — was an important element in the training. Lectures, discussion, and

practice with mocked-up materials covered such issues as general steps in listing and drawing a sample, confidentiality guidelines, maintaining good working relationships with facility staff, understanding typical client records and facility record systems, and editing and quality control of completed instruments and sampling materials.

### *Structuring Facility-Level Contacts*

Initial telephone contacts with facilities to secure cooperation and arrange site visits were the responsibility of a staff of field managers. They monitored production and field costs of the interviewers who completed data collection tasks. The seven field managers, coordinated by a field project manager, reported weekly on cost and progress of the work to the SROS central office staff.

### *Facility-Level Field Activities*

The field management staff supervised the team of interviewers who made the site visits for the purposes of sampling and abstraction. Each field manager initiated preliminary contact with staff at the facilities which interviewers visited. At some facilities, the field manager was in prolonged telephone contact with the staff persons serving as informants for the Program Director Interview. (Completion of that instrument was often extended well beyond the time period in which other site visit tasks were completed.) The progress of the work at a site was subject to daily monitoring. Interviewers worked with computer-generated Facility Information Sheets giving sampling rules for each facility, and Client Face Sheets summarizing demographic data and admission/discharge data for each treatment episode in the DSRS database. They were instructed to telephone their field managers from the site as soon as they had located DSRS sampling materials or otherwise defined sample lists for the index year. When work proceeded smoothly, field managers compiled reports showing the following information:

- Discharge list count before DSRS sampling;
- Total clients identified in DSRS database;
- Guidelines for supplementary sample selection:
  - Discharge list count after subtraction of DSRS selected lines, and
  - Sampling interval used to select supplementary sample;
- Total locating abstraction instruments completed; and
- Total supplementary abstraction instruments completed.

The figures were entered and updated on a spreadsheet transmitted weekly to the project staff. When discharge lists at a facility appeared to exceed upper and lower **limits** furnished on the Facility Information Sheet, interviewers were instructed to telephone their field managers immediately. The managers would check for problems with the completeness or the accuracy of the listings. At sites that had no supplementary sample, discrepancies were matters for inquiry, provided that the DSRS sampling materials clearly identified the DSRS-selected clients. The field managers had an additional resource in a DSRS sampling report that listed every

selected case by line number of the discharge listing. At supplementary sample sites, any significant problems with anticipated limits of index-year discharges were immediately referred to the project sampling team before work proceeded. As appropriate, the sampling team would issue revised sample selection rules.

The material mailed to the project staff after a site visit included a set of forms documenting the sample selection and abstraction process, including the following:

- SROS Sampling Record, a list of the DSRS client sample by name and facility record number, with an SROS client ID number from the computer-generated Client Face Sheet summarizing DSRS client data. At facilities where DSRS sampling forms were recovered, this SROS form would duplicate the DSRS Sampling Worksheet except for the project-assigned client ID. Otherwise, the SROS Sampling Record was copied from earmarked discharges on a DSRS Listing Form or reflected a DSRS client sample reconstructed by means of data on the Client Face Sheets from a freshly created discharge listing.
- SROS Sampling Worksheet, a list of client names, discharge dates, facility record numbers, and SROS client ID numbers for a selected supplementary sample. Where the supplementary sample was large, an SROS Sampling Worksheet Continuation was attached.

This additional sampling form was left with facility staff where its use had been required, to be kept for six months in case of follow-up inquiry.

- SROS Listing Form, used to make fresh index year discharge lists at facilities where the DSRS Listing Form was not recovered and a facility-generated list was not available.

At the conclusion of Stage 1, a letter of thanks was mailed to facilities with a brief questionnaire on interviewer performance in completing site visit tasks. Most facilities responded, and the feedback on SROS interviewers was very positive. As a final quality control measure, the project office placed follow-up calls to those facilities whose case materials, as submitted, were missing critical items or contained ambiguous information. This final case reconciliation and cleanup corrected inconsistencies, omissions, and errors in client identifying data and ensured that SROS had a complete data record for every respondent reported as a completed abstraction from a site visit.

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### ***Results of Facility-Level Data Collection***

Facility data collection began in the spring of 1994 and continued into the fall of 1994. Many facilities agreed to early site visits; by mid-June 1994, more than 2,400 record abstractions were complete. Analysis of sampling materials and abstraction instruments from **final** site visits revealed unanticipated sample attrition due to loss or duplication of individual client records. Some individual records could not be located in facility files and some client selections were duplicates; that is, the same individual had been sampled for more than one treatment episode in the index year. To compensate for attrition of individuals, the project sampling department augmented the client sample by adding 200 supplementary cases for fresh selection at nine of the larger facilities. By early August 1994, site visits had yielded almost 2,800 completed abstractions.

Achieving the **final** goal of 3,000+ client abstraction cases within the given time frame depended on finding “lost” facilities and reassuring doubtful facilities. Tracking down the stored client files of programs that had gone out of business since 1990 took much field effort. Some facility directors needed reassurance that the confidentiality and privacy of their discharged clients would be honored before they permitted the abstraction of identifying information from their records. A few facilities stipulated that the SROS sample design be approved by their own institutional review processes before agreeing to site visits; this subordinated the data collection schedule to scheduled quarterly meetings of boards. Additional descriptions of SROS design and confidentiality protocols were developed for review by Institutional Review Boards (IRB) or state agencies. Reassurances about the confidentiality procedures and protocols built into the study by NORC included such items as:

- Rulings from the University of Chicago’s IRB and from legal counsel to the Department of Health and Human Services that provisions in the Code of Federal Regulations authorizing disclosure of records for research purposes apply to the SROS design;
- Safeguards to respondent privacy and confidentiality in all locating inquiries, such that the subject of the study and source of the sample are never described except to properly identified respondents in private settings;
- Training designed to enhance interviewers’ sensitivity to confidentiality and privacy issues;
- A Certificate of Confidentiality obtained from the Department of Health and Human Services, protecting SROS interviewers and other research staff from any efforts to compel them to release data collected in the interview or in any operations connected with the interview;
- Consent statements read to and signed by respondents who agree to participate in the SROS interview, informing them that their data will be released in statistical summaries

only and reminding them that they have the right to refuse the interview or to refuse response to specific items in the questionnaire; and

- NORC's standard procedures to maintain confidentiality of data, including:
  - Dissociation of respondent names from all data,
  - Removal of information with potential to identify individuals before release of data,
  - Restricted circulation of completed data collection instruments and forms to SROS project staff, and
  - Maintenance of all files in locked and secure places.

If client sample selection and record abstraction had yielded insufficient cases or had been distributed disproportionately over the treatment modalities, project staff were prepared to augment the facility sample by approaching programs from the backup sample interviewed by DSRS. This step proved unnecessary. At conclusion of Stage 1 data collection, SROS had completed record abstractions for a total client sample of 3,047 individuals discharged during the index year at 99 DSRS facilities: 22 hospital inpatient, 27 residential, 26 outpatient methadone, and 24 outpatient drug free. 1,706 client abstractions were linked to the DSRS database, a recovery rate of 77 percent of the 2,222 clients abstracted by DSRS. 1,341 abstractions were from clients freshly selected from index-year discharges at 32 of the larger facilities, making the SROS sample more proportionate to the national number of discharges from treatment.

## **Stage 2: The Client Survey**

Stage 2 of SROS consisted of field interviews with a target sample of 3,000 clients who had been discharged from designated drug treatment facilities. Before launching the Main Client Survey, NORC engaged in an extensive period of design and testing. The focus of these preliminary activities was to: (a) develop a coherent and analytically sound client questionnaire, which was done by means of cognitive testing, and (b) field-test protocols for locating, contacting, and interviewing the respondents, which was addressed by a Pilot Test with 90 clients sampled from six facilities.

Stage 2 operations are presented below in the following sections. The initial section gives a synopsis of NORC's approach to cognitive testing. The Pilot Test is highlighted next. The final section focuses on the Main Client Survey.

### *Cognitive Testing of Client Questionnaire*

The Client Questionnaire underwent cognitive testing with nine respondents discharged from drug treatments unrelated to the facility sample during the SROS index year. In administering the questionnaire, interviewers asked respondents to reflect on the questions and their answers. The results were studied to obtain insight into respondents' understanding of terms, their

strategies for recall, and their confidence in the accuracy of their answers. SROS staff tested respondents' abilities to anchor memories around a past treatment episode — that is, their ability to recall accurately events before, during, and following a sample treatment episode. The outcome of cognitive testing indicated that collecting five-year retrospective data anchored by a treatment episode was feasible. Respondents could recall their drug treatment in detail and discuss sample episodes and other events confidently, in chronologically correct and consistent ways.

### *Pilot Test*

The Pilot Test, which occurred during a six-week period in late spring 1994, was designed to answer the following questions:

- Can individuals be located for interview four to five years post-discharge from a sampled treatment episode by using the dated information abstracted from 1989-1990 facility records?
- How will clients react to their inclusion in the survey?
- Will those who respond to the Client Questionnaire be able to recall events related to the sampled treatment episode after five years?
- Will respondents be able to distinguish effectively between behavior and life events of 1990 and later, perhaps including additional treatment episodes?
- Will a sufficient percentage of respondents be willing to furnish a urine sample at the conclusion of the interview?

The client sample for the Pilot Test was selected from six DSRS facilities clustered for cost-effective field operations in Michigan/Indiana and Maryland/Delaware. The pilot facilities were representative of treatment modalities, with two inpatient, two outpatient methadone maintenance, one outpatient drug free, and one residential treatment center. Interviewers visited the pilot facilities and obtained the DSRS discharge listings for 1989-1990, on which a special pilot sample (separate from the DSRS client sample) had been earmarked during the SROS pretest. They then used the SROS locating instrument to abstract identifying data for field use. The 90 cases in the pilot sample were distributed so that the inpatient and methadone maintenance facilities contributed 30 cases each, and the drug-free and residential facilities, 15 cases each.

Pilot Test interviewers attended a three-day training in May 1994. The training included several practices with the Client Questionnaire and an associated calendar using mocked-up

client situations, augmented by lectures on questionnaire structure and content. Other lecture and discussion sessions covered confidentiality and locating protocols for approaching clients, informed consent forms and procedures, management of locating problems and use of special client locating resources, management of the interview with impaired respondents, ensuring interviewer well-being and safety in approaching a drug-using population, and materials and procedures for obtaining urine specimens.

The SROS Pilot Test was highly successful, establishing the feasibility of locating the respondents and securing cooperation and valid data from them. Fifty interviews were completed, with an additional case completed the week following close of the six-week field period. The total completions exceeded the overall target of 25 to 45 interviews set for the field work, and the number met or exceeded targets set for clients discharged from the individual treatment modalities. Eighteen of the 30 inpatient clients and 18 of the 30 methadone maintenance clients in the pilot sample gave interviews, while 7 of the 15 clients discharged from outpatient drug-free treatment and 8 of the 15 discharged from residential treatment were interviewed.

Methodological concerns about respondents' ability to recall significant treatment events and behavior over a five-year time span were allayed by the richness of the Pilot Test data, the infrequent missing items, and the coherence between data abstracted from facility records and the responses to the questionnaire. Thirty-six of the pilot respondents who completed interviews gave urine specimens, for a 71 percent success rate. Ten of the 15 who did not provide urine samples were in circumstances inappropriate for the request of a specimen (three were interviewed by telephone and seven were incarcerated). Only five of the pilot respondents refused the request for a urine sample.

Based on the Pilot Test, the OMB approved clearance for the full client survey.

### *Main Client Survey*

The Main Client Survey was scheduled for a nine-month period from June 1995 through March 1996. The interviewing staff for this effort included a number of field staff experienced from SROS Stage 1, augmented by interviewers with experience on other drug outcome studies.

### *Training Interviewers*

The three-day training for the Main Client Survey was closely modeled on the earlier training for the Pilot Test. Several practice runs through the instrument using mocked-up client data and working with associated calendars were augmented with lecture and discussion sessions on confidentiality protocols and procedures, on resources and techniques for locating discharged clients in the community, on approaching and identifying the client sample and gaining trust and cooperation, on working effectively with a disadvantaged drug-using population, and on

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procedures for obtaining and documenting urine specimens and mailing them to the NIDA-certified laboratory subcontracting to SROS.

### *Structuring Data Collection--Field Management Staff*

A staff of six field managers responsible for monitoring the data collection and reporting weekly production and cost to project staff was coordinated by a field project manager. Each field manager worked with 10 to 12 interviewers to locate and interview clients residing in a geographical region. In general, respondents were scattered in western and midwestern field assignments and more tightly clustered in the East and the South. The initial staffing assumption that most clients would be found in the same general area as the facility that discharged them was

not borne out by data collection results, and a great deal of locating work was required before field goals were met, due to many transfers of cases between field regions.

### *Locating Client Respondents*

Concerned for the quality of address data abstracted from five-year old client records, the project staff mounted a prefield location effort in May 1995 to verify and update the latest known addresses from facility records. Two credit bureau databases, rich in information about charge card users, were searched for address data of those for whom the SROS abstraction showed a social security number or a complete name and an address. Locating clerks reviewed the information files returned from the credit bureaus and clarified addresses as necessary with calls to directory assistance. The names and social security numbers of clients in Illinois, Michigan, and New York who were not located through credit bureau search were submitted to Departments of Motor Vehicles in those states to be checked against their databases. This prefield inquiry confirmed the original addresses of about 17 percent of clients and yielded new or updated address information for more than 60 percent. In addition, the inquiry found that 106 clients, or three percent of the sample, were deceased since their selected treatment episodes.

About 18 percent of the sample was classified as unlocatable at the conclusion of prefield client tracking. The project team mailed a letter that introduced the client sample to the study by a letter that described their inclusion in a "health study" sponsored by the U.S. public Health Service in envelopes marked **Address Correction Requested; Return to Sender**. The project staff **thus** received very early word about clients unknown at their given addresses, along with any forwarding addresses on file at local post offices. Where the letters were delivered, clients had some preparation for personal contact by SROS interviewers.

Early in the field period, the assumption that better than 75 percent of assigned clients lived at known addresses proved too optimistic. Many addresses updated by the credit bureau search were discovered to be obsolete at interviewer contact.

Field protocols for SROS imposed confidentiality safeguards on the most casual locating inquiries. The interviewers were trained to communicate the minimum in asking neighbors, relatives, professionals, or acquaintances the whereabouts of the respondents they sought. Field staff needed some explanations to attest their good reasons for inquiring. SROS interviewers were permitted to use the explanation given in the introductory letter to clients — they wished to reach respondents in connection with a health study conducted for the U.S. Public Health Service.

Interviewers were encouraged to distribute a business card with the project name and a toll-free telephone number to locate informants and other persons contacted in the community, requesting that the respondent or anyone who had knowledge of an address contact the project. The project staff expected that as interviewing continued, some general understanding of the ongoing study and its legitimacy would circulate in the clients' communities. The business card gave respondents easy telephone access to make appointments; it was expected that some of them would be responsive to the modest payment represented by the fee of \$15 once they were assured of the legitimacy of the research.

The business card was directed especially at the part of the client sample that lacked ordinary ties to the community — the group that would not leave post office forwarding addresses or that would not use credit cards. The best locating field method for reaching this group, once the interviewer had some general clues about an area where people knew of them or their families, was “hanging out” — or blending into the street or the neighborhood, looking harmless, waiting for someone who might respond to a casual inquiry about the whereabouts of a respondent.

#### *Managing Client Contact and Obtaining Respondent Cooperation*

When SROS interviewers had reason to believe they had located a respondent, a protocol guided their explanations of the survey and their requests for cooperation. First, interviewers needed to verify identity. The project guidelines specified that interviewers could begin an explanation if a person answering to the first and last name of an SROS respondent, matching in age, sex, and ethnicity (the demographic data on the client Face Sheet), was located at an address or telephone number associated with that person in the locating abstraction record. The explanation followed a set introductory script to be read in English or Spanish, as appropriate, only when privacy was secured. In the protocol, the study's sponsorship by the Substance Abuse and Mental Health Services Administration was specified for the first time, with reference to the U.S. Public Health Service guidelines that permitted gathering information about the client's treatment for substance abuse in the index year. The script went on to describe the research purposes and the confidentiality safeguards for maintaining data and concluded by presenting the SROS General Consent Form. Respondents were asked to sign the form to indicate their informed consent, their understanding that the data would be used for statistical analysis only, and that their confidentiality and privacy would be safeguarded, and that their participation was voluntary.

For persons located away from addresses/telephones in the abstracted database, or for persons who did not appear to match the demographic data in the Face Sheet, further verification was required before interviewers could read the Introductory Script. Requests for date of birth and for mother's maiden name that could be matched to Face Sheet data were the first filter. If the match remained ambiguous, the interviewer was told to request a hard copy ID to verify the person's first and last name. As a last resort, the interviewer might request the person's Social Security Number when the number was present in the Face Sheet data. If none of these steps produced satisfactory evidence that the person was the client named on the Face Sheet, the interviewer was instructed to break off explanation without proceeding further. Great tact and judgment were required from interviewers in managing this complex introduction without alarming or antagonizing individuals while maintaining their privacy against any possibility that confidential personal history be communicated to a stranger.

The great majority of those who heard the explanation of SROS sponsorship and purposes agreed to give an interview. Not quite nine percent of sampled clients were final refusals. Interviewers were instructed to make additional reassurances about confidentiality procedures and to stress the need for nationally representative drug outcome data when they encountered resistance. Very strong refusal conversion efforts were not appropriate for this population given their privacy rights.

#### *Conducting the Interview and Collecting Urine Specimens*

Having obtained the respondents' informed consent and given them a copy of the signed Consent Form, interviewers proceeded to administer the SROS questionnaire. A project calendar, often partly set up in advance of the interview, showed distinctively highlighted time frames for the sample treatment episode, and for the five years preceding and the five years following the index episode. The 12-month period immediately preceding the interview date was likewise distinctively highlighted on the calendar. The first set of questions checked demographic data and gathered fresh data about gang membership and current educational status. The Treatment History section of the questionnaire initiated use of the calendar to confirm or correct data about the sample treatment episode. Respondents were referred to the calendar as interviewers perfected and explained the color coding that identified Time Before, Time During, and Time After the sample episode, with additional color coding for Last Year. Respondents were given the calendar to hold during the course of the interview and were referred to the specific color-coded reference periods at appropriate points in the questionnaire. Once respondents were oriented, the interview protocol proceeded systematically to gather data for the following:

- Treatment experience in the sample episode;
- Treatment experiences, if any prior to the sample episode, with emphasis on the prior five year period;
- Treatment experience, if any, after the sample episode;

- Use of main drug or drugs (including alcohol) specified for treatment episodes in the five years before and the five years after the sample episode, with special questions about use in the last year and the last 30 days;
- Use of other drugs (including alcohol) not specified as main drugs in the same time frames;
- Use of needle injection for drugs in the same time frames and during the sample episode;
- Legal history, including arrests and incarcerations and specific illegal activities — ever, and in the same time frames and during the sample episode;
- Marital status and living arrangements — ever, and in the same time frames;
- Health history, including mental health history, physical illness, use of health care services, sexual behavior, and victimization by physical attack or attack with a weapon — ever, and in the same time frames;
- Employment history — ever, and in the same time frames;
- Income sources in the last year; and
- Locating information for followup.

Respondents agreeing to furnish urine samples signed another consent form indicating that their cooperation was voluntary and they understood the test results would be held confidential and used for research purposes only. Then interviewers requested that the respondent furnish a urine specimen, providing respondents with a kit that the respondent used in privacy, returning the closed specimen bottle to the interviewers. After a visual check of the sample, interviewers inserted a documentation slip with client ID and interview date and sealed the kit for immediate mailing to the NIDA-certified laboratory that subcontracted to SROS. More than three-quarters of respondents completing the interview cooperated with the request to furnish a urine specimen.

### *Identifying Deceased Clients and Verifying Death*

A total of 277 clients in the SROS sample died between discharge from the sample treatment episode and conclusion of client interviews. Eventually all reported deaths were validated against the National Death Index (NDI). Abstraction from facility records had turned up evidence of the death of 29 clients post-discharge, and credit bureau address checks before Stage 2 fielding brought news of 106 additional deaths. The balance of the deceased were identified or confirmed in the course of contacting and locating sampled clients to complete the Main Interview or through computer matches with the NDI of individuals not located by interviewers.

Field staff documented reported client deaths with a form specifying clearly the source of the information: (1) a relative, with name, address, telephone number, and precise relationship specified; (2) a death certificate obtained from the Vital Statistics Bureau; (3) an obituary published in the local press, copy attached; (4) credit bureau information obtained in the course of a request for address update; (5) SROS facility records.

### *Results of Data Collection*

At conclusion of the nine-month field period, 68 percent of client cases were completed. This figure consisted of the approximately 59 percent of eligible clients who had given interviews and nine percent who had been documented as deceased. The greater number of noninterview cases were classified as final unlocatables; approximately 18 percent of the client sample had that final status, while almost 9 percent were final refusals, with very modest numbers classified as final unavailables (just more than one percent), final refusals by prison (one percent), and other final nonresponse (less than one percent). The course of the field work followed a pattern typical of samples where the major burden of the field work is slow and involves painstaking location inquiries. It took one month to complete 15 percent of assigned cases, and six more weeks to double that to 30 percent. It then took about two months to complete each 15-percent increment. Production patterns of this sort reflect the field time that must be invested to nurse each case to the point of interview — field time spent tracking lost respondents or patiently developing the trust of the hesitant ones.

### *Special Issues from the Client Survey*

Concern for respondent confidentiality was a prominent part of the Client Survey field protocols, as the description of procedures for client identification makes clear. Project staff felt special concern about confidential management of the Locating Abstraction Record. Because of its field function, it necessarily carried much data identifying the client and it clearly tied individuals to named facilities where they received drug and/or alcohol treatment. This document was the major resource for interviewers in the course of field-tracking, but taking it into the field where it might be lost or accidentally exposed to view — even the view of respondents — was totally unacceptable. Field protocol accordingly asked that interviewers keep the document securely filed away with their project supplies at home. Interviewers transferred the details they needed to shape inquiry in the community, in cryptic notes if necessary, to a Record of Calls that identified the client by ID number only. The relatively modest client refusal rate suggests that the very cumbersomeness of SROS confidentiality procedures, with prescribed readings of scripts and multiple signed consent forms, encouraged respondents.

The completed work of Stage 2 interviewers was validated using NORC's standard procedures. Ten percent of each interviewer's completed caseload was randomly designated before data entry for a validation telephone call to the respondent from project staff. The validators explained that they were calling in relation to a recently completed health study and confirmed that the SROS interview had been conducted with the sample respondent when and where represented. The validation script had other questions about the elapsed time of the interview and a few data items, like highest educational level, asked to confirm questionnaire content. The calls concluded by asking respondents for any comments they had about the interviewer. If a respondent were to deny cooperating with the interview or if

there were other serious discrepancies between validation responses and interviewer report, the entire completed caseload of the interviewer would be subjected to validation callback. Any cases determined invalid would be set aside from data entry and refiled for completion by other interviewers. However, the SROS validation procedures were completed without uncovering any evidence of misrepresented data.

### **Systems, Data Processing, File Preparation**

For both Stage 1 and Stage 2 data collections, interviewers returned their completed documents and forms, including transmittals and edit checklists, to NORC's receipt control center in Chicago. Clerks there reviewed each abstraction instrument, questionnaire, and associated document for completeness and registered receipt of the case ID using NORC's Survey Management System (SMS).

#### *Software Systems Overview*

The SMS is an integrated software system that tracks all events related to a particular case. SROS required an SMS link between identification numbers at the facility level and client-level

**IDs.** Receipt of every document related to a case was registered by the SMS, which also tracked by case ID post-field operations like validation, urine test results, and data entry.

A computer-assisted data entry program (CADE) was used to capture and check the data in completed abstraction instruments, Program Director Interviews, and main Client Survey questionnaires. The CADE system was programmed to check for acceptable variables, inter-item consistency, critical item entry, and accurate numerical calculations. CADE entries were verified by randomly rekeying 10 percent of each data entry operator's cases and automatically comparing for consistency. Data entry supervisors rekeyed the initial set of cases looking for problem items and common errors and passed the information back to the operators. The CADE system generated both case-specific and aggregate error reports. After data entry of all SROS material was complete, the entire database was subjected to a post-capture editing program that ensured that questionnaire skips were followed correctly, ranges were observed, and all sample cases were represented in the data set. Frequencies and other descriptive statistics were used to review the data and ensure the quality of the final files prepared for analysis.

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### ***NORC Central Office Security and Confidentiality Procedures***

NORC maintains a secure facility for data preparation and hard copy instrument storage. The entrance is monitored by a secretary who buzzes in and registers visitors; only the employees of the data preparations center can enter at will. Locked filing cabinets are provided for storage of all hard copy forms and instruments. Data preparation personnel are subject to the same confidentiality protocols and give the same confidentiality pledges as other project staff. While keypunching abstraction instruments and questionnaires, operators stored only the case materials on which they were immediately working at their computer terminals. A login code and a password were required to access the SROS CADE program in the computers. Documents of cases awaiting processing and cases that had completed processing were locked away in the data preparation facility's library.

### ***File Preparation***

Files were prepared for delivery to NORC's analysis team, for delivery to SAMHSA, and for public use. Analytic files included a client data file with client questionnaire information for all completed cases, with facility names removed for separate delivery. Abstraction data from the SROS abstraction file was appended for all completed and deceased cases, with weights, provider IDs, and modality stratum plus abstraction data for the remaining cases.

### **MEASUREMENT ISSUES OF SROS QUESTIONNAIRE**

This section lists types of measurement issues and describes how they were handled by the SROS project team.

#### **Recall Decay**

"Recall decay" refers to reductions in the reporting of behaviors due to the client's difficulty in remembering events. Generally, clients display greater reductions in the reporting of remote events, characteristics, and behaviors (i.e., those more distant in time from the date of reporting). The SROS data collection procedures were expressly designed to counter potential biases due to recall decay. SROS staff sought to minimize these sources of inaccuracy: (1) by measuring highly salient behaviors/characteristics (i.e., ones likely to be remembered), (2) by focusing on and comparing recent time periods, and (3) by asking clients to answer quantitative questions using ranges that recognize the limitations of human memory and computational abilities. For example, when clients were asked how many days per month they used drugs, they were asked to select the most appropriate answer out of the following set of intervals (the interviewers read the intervals out loud, and displayed a written "show card" as a visual aid):

1. One day
2. 2-5 days

3. 6-10 days
4. 11-20 days
5. 21-31 days
6. Everyday

Using the midpoint of each range, these answers may be used to estimate the average days of drug use for groups or subgroups. When these data are used to make comparisons between groups above a minimal size threshold (e.g., 50 or more per group), the findings have considerable statistical precision.

As recall decay is likely to be greater for events that occurred longer ago, the interviewees would be likely to remember less substance abuse and criminal behavior in the period before the SROS episode than actually occurred. Given the before/after or pretest/post-test design of SROS, recall decay would tend to show increased, not decreased, effectiveness of treatment.

### **Telescoping**

This term refers to the allocation of events, characteristics, or behaviors to an earlier or later time period than the one in which they actually occurred. SROS sought to minimize telescoping by anchoring the respondent in the SROS treatment episode with the assistance of a color-coded calendar. The interviewer used substantial effort to place the interviewee within the SROS treatment episode, as well as to place that episode within the context of the events in the interviewee's life. Then interviewees were asked about long periods of time (i.e., five year periods). As such, SROS staff designed the interview to focus clients' attention and anchor time repeatedly on the reference period of each question and to associate the beginning and end dates of reference periods with clearly defined and usually memorable events, such as the beginning and end of the SROS treatment episode.

### **Reversion to Baseline Behavior Patterns**

Previous studies of treatment show that the period immediately prior to admission generally tends to be higher in drug and alcohol use and associated criminal behaviors than earlier or later periods of the same client's adult life; these high levels of substance use and associated problems are among the factors that induce clients to enter treatment. Therefore, lower levels of criminal activity after treatment can to some extent be described as a reversion to a baseline behavior pattern rather an effect of treatment as such.

Studies that use short baseline and post-treatment periods, such as the day or week before admission or after discharge, are especially vulnerable to these reversion effects. However, SROS uses a five year period; the longer reference period smooths out less typical behavior that takes place immediately prior to admission.

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## **Memory Limitations**

Too many response alternatives, particularly if they are not logically sequenced, may **cause** a respondent to forget the response alternative when the time to answer the question has arrived. To ease that issue, SROS employed, to the extent possible, show cards that present the alternatives in a logical manner. In addition, interviewers read the alternatives to the respondents, decreasing the burden on memory.

## **Underreporting of Sensitive Behaviors**

A reluctance of persons to reveal socially undesirable traits may lead to underreported events, characteristics, or behaviors. SROS attempted to minimize underreporting by carefully selecting and training interviewers in nonjudgmental but probing interviewing techniques, by carefully explaining and repeatedly emphasizing to clients the confidentiality and purposes of the data collection, by framing questions in ways that have previously been shown to elicit reporting of sensitive behavior most readily, and by relying most heavily on analysis of the types of items least subject to underreporting bias.

Finally, respondents did acknowledge a substantial amount of illegal behavior. External validity checks are described below.

## **EXTERNAL VALIDITY OF SURVEY RESPONSES**

An examination of the relationship between self-report on arrests and recorded arrest history, as measured by state records of arrests, is presented in NTIES (Gerstein *et al.*, 1997). Comparison of self-reports and official arrest records indicated that self-reports and arrest records were highly but not perfectly concordant (80 percent). Underreporting of arrest records was most frequent among individuals interviewed in prison or jail and among males under 25 years of age.

The overall validity of various kinds of self-report data has been of general concern to survey researchers. Errors in self-report have been noted in studies of various types of behaviors, including voting (Abelson, Loftus, and Greenwald, 1992) and the receipt of health care (Loftus, Smith, Klinger, and Fielder, 1992). Variations have been explained by the social desirability bias as well as by autobiographical memory processes.

Various researchers have demonstrated that distortion of responses related to social desirability may vary across groups (Callahan, 1968; Weiss, 1968). More recent work reinforces the importance of the context and characteristics of the group of respondents. For example, in a study of persons using a walk-in clinic for immediate medical care, 72 percent of persons with cocaine-positive urine denied recent cocaine use (McNagny and Parker, 1992). Alternatively, Lundy, Gottheil, Weinstein, Sterling, and Serota (1995) reported that those who did not complete substance abuse treatment had significantly higher rates of

underreporting of drug use than did those who completed treatment. Wish *et al.* have also suggested that the validity of client self-reports may differ by drug (1997).

SROS has compared respondent's self-reports of drug use with a more objective measure: urinalysis. Although both hair analysis and sweat analysis technologies hold promise for the future, to date, urinalysis has been most typically used to determine the accuracy of self-report. Urinalysis, when performed properly in quality-controlled laboratories (a NIDA-certified laboratory was used in SROS), provides an objective criterion to which self-report of drug use can be compared. It should be noted that the EMIT (Enzyme-Multiplied Immunoassay Technique) test used for the SROS urinalysis has some tendency toward false positive, not false negative, reports. As a result, the direction of error in this external validity study is toward overestimating drug use and underestimating the accuracy of respondents' self reports of drug use in the population studied.

The ability to detect substances in urine is limited by the length of time it takes the body to clear drug metabolites. This time periods are short for alcohol, whose "dwell time" in the body is short, while heroin and cocaine metabolites remain longer (i.e., three days). Thus, urinalysis underestimates alcohol use.

SROS conducted follow-up interviews with 1,799 respondents and collected urine samples at the end of the interview for 1,364. That number constitutes 76 percent of the sample interviewed, which included respondents who were in jails/prisons whose management did not permit them to provide urine for analysis.

Table A-1 displays the results of urinalyses. The external validity check indicated that the self-reports of drug use by the SROS sample were predominantly confirmed by urinalysis. Agreement between self-report and urinalysis ranges from 89.7 percent to 98.5 percent for illicit drugs in the past week and from 86.2 percent to 99.0 percent in the past 24 hours. The major exception is alcohol, where concordance is 64.1 percent for the past week and 76.8 percent for the past 24 hours. As expected, self-report of alcohol use is far higher than by urinalysis.

**Table A.1 - Comparison between self report on drug use and urinalysis in SROS**

Results of Comparison	Time Period	<b>Amphet-amine</b>	Cocaine/ Crack	Opiates Including Heroin	Alcohol	Methadone
Agreement: Self Report and Urine	past week	98.5%	89.7%	93.8%	64.1%	97.8%
	past 24 hours	<b>99.0%</b>	<b>86.2%</b>	<b>92.8%</b>	<b>76.8%</b>	<b>97.6%</b>
Urine Positive; Negative Self Report	past week	<b>0.6%</b>	<b>9.1%</b>	<b>5.0%</b>	1.4%	1.3%
	past 24 hours	0.8%	13.8%	6.7%	1.9%	1.7%
Urine Negative; Positive Self Report	past week	<b>0.9%</b>	1.2%	1.2%	34.5%	0.9%
	past 24 hours	<b>0.2%</b>	<b>0.0%</b>	<b>0.5%</b>	<b>21.3%</b>	<b>0.7%</b>

It is important to note that underreporting of drug use occurs more for cocaine/crack and heroin than for other drugs tested. Also, the level of that underreporting is higher for the 24-hour period than for the past week, probably due to the greater accuracy of urinalysis for the shorter time period.

## **RESPONSE RATE**

Of the **3,047** clients in the SROS sample, 2,489 (82 percent) were located during the nine month SROS field period five years after discharge from the index treatment episode; 558 (18 percent) were not located before resources and time for fieldwork expired. Less than one percent (14 clients) were ineligible for the study, 277 (nine percent) had died between discharge from treatment and the field period, and 1,799 individuals were interviewed.

There is a difference between simple response rates and cumulative response rates. The overall response rate of the SROS survey is 65 percent when those who died before the field period are excluded from both the numerator and denominator of the completion rate. The response rate for subgroups of the sample are as follows: 63 percent for males, 70 percent for females, 65 percent for white non-Hispanics, 66 percent for black non-Hispanics, and 54 percent for Hispanics.

The overall SROS response rate was 68 percent when those who died before the field period are measured as completions. The response rate for subgroups of the sample are as follows: 67 percent for males, 72 percent for females, 68 percent for white non-Hispanics, 69 percent for black non-Hispanics, and 59 percent for Hispanics.

When SROS is viewed as part of a longitudinal study, following after DSRS Phase I, DSRS Phase II, the recapture of DSRS facilities for SROS, and the completion of cases for SROS, the cumulative response rate would be the product of each of the individual response rates, which is 38 percent as shown on Table 2.1.

## WEIGHTING OF DATA

### Overview

The purpose of weighting survey data is to adjust for differences between the composition of the sample and the composition of the population of interest. These differences arise from two sources. The first is sources related to the sampling design (e.g., differential sampling rates for various types of facilities and, possibly, differential sampling rates by various respondent characteristics). Second, these differences also arise because of differences in cooperation rates (e.g., not every facility or respondent will agree to participate in the survey, and members of some groups may be more likely to cooperate than members of other groups.) Differences between the composition of the sample and the universe may also arise because of various forms of undercoverage (undersampling, disproportionate non-response rates, etc.). Weights are used to compensate for all of these differences between the sample and the population. The sampling plan for SROS was developed to achieve these goals; this plan is described below.

### Facility Weights

Facility-level weights are needed to estimate characteristics of the population of facilities. These weights are essentially the products of two factors: (1) the reciprocal of the facility selection probability, and (2) an adjustment factor for nonparticipation.

The probability of selecting a facility is:

$$\pi_j = n \frac{X_j}{X_+}$$

where:

$\pi_j$  is the probability of selecting facility  $j$ ;  
 $n$  is the number of facilities;  
 $X_j$  is the size of facility  $j$ ; and  
 $X_+$  is the sum of the sizes across facilities.

The facility's base weight is the inverse of its probability of selection:

$$W_j = \frac{1}{\pi_j} = \frac{X_+}{nX_j}$$

After the facility base weights have been computed, they can be adjusted for facility-level nonparticipation. The nonresponse-adjusted weight,  $W_j^*$ , is the base weight,  $W_j$ , multiplied by the inverse of the weighted response rate for a given adjustment cell  $a$ :

$$W_j^* = \left( \frac{\hat{N}_a^{ES}}{\hat{N}_a^{PS}} \right) W_j$$

where

$\hat{N}_a^{ES}$  is the sum of the base weights of the eligible selected facilities in adjustment cell  $a$ , and  
 $\hat{N}_a^{PS}$  is the sum of base weights of participating facilities within adjustment cell  $a$ .

Adjustment cells for facilities are defined according to the original sampling strata.

### Respondent Weights

Respondent weights are computed using the same basic procedure used for calculating facility-level weights. First, a base weight is developed. The base weight for Respondent  $k$  within Facility  $j$  is derived from the final facility weight,  $W_j^*$ , and reflects the within-facility selection probability

$$W_{jk} = W_j^* \left( \frac{N_{jy}}{bO_{g(k)}} \right)$$

where:

$N_{jy}$  is the total number of eligible respondents in Facility  $j$ .

$b$  is equal to the desired number of respondent selections per facility (It is a constant to be determined as a function of the desired total sample size, the degree of oversampling

that is required, and the expected overall participation rates of facilities and respondents).

$O_{g(k)}$  is a selection rate adjustment factor associated with the oversampling rate for the group,  $g(k)$ , to which the respondent belongs. If no oversampling is required, then  $O_{g(k)} = 1$ .

Next, the initial respondent weights are adjusted for nonresponse. Again, the initial respondent weights are multiplied by the inverse of the weighted response rate within an adjustment cell.

$$W_{jk}^* = \left( \frac{\hat{M}_a^{EST}}{\hat{M}_a^{PST}} \right) W_{jk}$$

where:

$\hat{M}_a^{EST}$  is the sum of the weights of eligible selected respondents within adjustment cell  $a$ , and  $\hat{M}_a^{PST}$  is the sum of weights of participating respondents within adjustment cell  $a$ .

### Undercoverage and Post-Stratification

Bias in an estimated proportion or mean due to undercoverage of facilities on the frame depends on two factors. The first is the proportion of the population that was excluded from the frame,  $p$ . The second is the difference between the parameter for the facilities on the frame and those who were omitted on the frame. That is :

$$Bias = p (\theta_{nc} - \theta_c) ,$$

where:

$\theta_{nc}$  is the parameter (mean or proportion) characterizing the omitted group of facilities, and  $\theta_c$  is the corresponding parameter characterizing the included group of facilities.

Using this information, the nonresponse adjusted weights can be post-stratified to the control totals by stratum.

### Modifications to the Weighting Plan

The estimates in this report were calculated using weights developed by NORC based on specifications approved by the Office of Applied Studies on April 3, 1996, and revised on May 17, 1996. The purpose of these weights was to allow the sample responses to be used

to draw inferences about the population of drug users from which they were drawn. The May 17, 1996, revisions to the weighting plan were necessitated by three exceptions which needed to be made to the original specifications.

The first of these exceptions was simply that due to the nature of the data set (including both questionnaire responses and abstracts of archival records) and the different analyses to be performed, three weights were calculated. These differed based on the way the deceased were classified. More specific information on these weights and how they were used in this report is presented below.

The second exception was made necessary by the fact that it was not possible to determine the number of eligible clients in sample facilities that did not cooperate in DSRS Phase II. Because these data were not available, the assumption was made that, within each of the four strata, the weighted cooperation rate of sample facilities in DSRS Phase II would be equal to the unweighted cooperation rate. That is, it was assumed that within each stratum, the percentage of sample facilities that cooperated in DSRS Phase II was equal to the percentage of sample clients who were cooperating in DSRS Phase II facilities.

The third exception involved the post-stratification of the weights within strata using the original stratum totals of eligible clients on the DSRS sampling frame. That is, within a stratum, the number of eligible clients was computed as the sum of the reciprocals of the overall client selection probabilities for sample facilities in that stratum. The decision to post-stratify in this way was made due to the inability to adjust the weights precisely for the effect of facility noncooperation, as described above.

The three weights referred to in the discussion of the first exception above were as follows. "WT1" treats the deceased as respondents. This weight was used for analyses of the abstracted records because in this case, data are available for both living and dead respondents, and comparisons involving both groups were to be computed. "WT2" treats the dead as nonrespondents, and "WT3" treats them as ineligible. The latter was chosen for the analysis of the questionnaire data in this report. This seemed intuitively the more logical disposition for the sample members coded as deceased because they had died before the administration of the questionnaire. However, it should be noted that because this weight was used for the analyses, the population to which the results in this report refer is the population of drug users in treatment in the SROS timeframe who survived at least until the administration of the questionnaire.

#### **PREPARATION OF UNBIASED ESTIMATES OF TARGET POPULATION: SUDAAN**

The estimates and analyses in this report were calculated using the Survey Data Analysis software package (SUDAAN). SUDAAN (Shah, Barnwell, Hunt, and LaVange, 1993) is a data analysis system that adjusts the standard errors for a set of data collected using complex

sampling designs. This correction employs a Taylor Series algorithm to correct for the bias introduced by stratified, clustered sampling designs such as that employed in the SROS study. Under this type of probability sampling, the statistics one calculates are often more variable than those based on data from a simple random sample of the same size. Conventional statistical packages such as SAS and SPSS assume simple random sampling and may yield misleading statistical estimates when the data come from a more complex sampling design.

## ANALYTIC TECHNIQUES EMPLOYED: BEFORE/AFTER ANALYSIS AND REGRESSION

### Before/After Comparisons

The SROS study compares events in the five years preceding admission (“Before Treatment”) with the five years after discharge (“After Treatment”). The study describes and quantifies the changes between the periods for all clients and shows how the changes vary for the entire population and among subgroups of SROS clients. These subgroups are divided according to pretreatment characteristics, such as age, sex, race/ethnicity, and earlier treatment exposure; and aspects of the SROS treatment episode, such as the type of treatment, its duration, and whether the client completed or did not complete the treatment protocol. Comparisons are made between rates of occurrence on dimensions such as drug use, criminal activity, employment, living arrangements, and physical health,

The effects or outcomes of treatment are evaluated using two methods. The first is commonly known as a “before/after” or “pretest/post-test” design, and the second is regression analysis. The before/after design compares behaviors or other characteristics in a panel of the same research subjects, measured identically or comparably before and after the SROS sample treatment episode. The before/after design has some strengths over methods that compare two different samples of individuals to estimate the effects of an intervention, using a group never treated compared with a group after a round of treatment. In the before/after design, each subject serves as his/her own statistical control, keeping spurious or coincidental relationships from entering into the results. Specifically, behaviors or characteristics that tend to be permanent (e.g., gender, **race/ethnicity**) or slow to change (age, lifetime employment history, educational level) during the intervention exert a constant influence during both the before and after periods and may therefore be eliminated as competing explanations for a treatment’s effects. In addition, clients with similar types of premorbid behaviors or characteristics can be grouped, and treatment effects contingent on these factors can be examined by comparing subgroups.

All of the before/after changes reported here are net changes in a group statistic — for example, the percentage reduction in the proportion of all clients who used cocaine five or more times in the five years before the SROS sample treatment episode versus five years after treatment, or the percentage that committed burglary in the five years before admission

to SROS compared with the five years after discharge from the SROS treatment episode. This analysis uses group change because for every behavior or characteristic measured as an outcome variable, there were individuals who changed in either direction, not only in the overall SROS client group but in every major subgroup of that population.

The “chronic relapsing disorder” view of drug treatment would expect little difference for the five-year “before/after” SROS differences. This lack of difference would be attributed to the regularly predicted relapse period, as the long outcome period used by SROS would show no treatment effect if relapse were a regularly occurring issue for a large proportion of the population discharged from drug treatment.

The SROS before/after analyses tested relapse behavior in two ways. First, the behavior (primarily drug use) was examined of those discharged from treatment along the basic dimension of use/no use of drugs. Any relapse during the five year period would result in findings that drug treatment is not effective, as the period of hazard is five or more years. Another more subtle test

of effectiveness is achieved by comparing the number of days per average month that individuals use drugs. Both measures are employed in this study.

### **Regression Techniques**

While the before/after design focused on the entire sample and on subgroup level, regression analysis focused on the individual level. This section describes two predictive regression models for predicting outcomes associated with drug treatment.

It should be noted that regression analysis used in a study of this kind is a correlational technique. No claim is made for a direct causal relationship among the variables used in this analysis. Rather, the analysis seeks to explain covariation among the variables, that is, to assess whether certain behaviors or characteristics tend to coincide with the presence of a particular outcome to a greater or lesser degree than do others.

Also, the variables used in these regression analyses were not intended to be exhaustive of the data set nor of other potentially meaningful relationships that could be assessed from this rich data resource. The variables used in this regression analysis reflect the study’s interest in a model, explaining post-SROS treatment behavior through three (pre-treatment, treatment, and post-treatment) cumulative models.

Two types of regression analyses were employed. For continuous outcome variables (e.g., number of days per month used heroin), ordinary least-squares regression models were used. For dichotomous (binary) outcome variables (e.g., used heroin after discharge from SROS treatment episode), logistic regression models were used.

### *Continuous Variables*

The principal model in the analyses of continuous variables is called the “conditional change” model:

$$Y_{AFTER} = \alpha + \gamma Y_{BEFORE} + \sum \beta_i X_i + \sum \beta_{ii} X_{ii} + \sum \beta_k X_k + e,$$

where  $Y_{AFTER}$  denotes the value of a continuous outcome variable measured for the after-SROS treatment period;  $Y_{BEFORE}$  denotes the value of the same outcome variable measured for the same individual for the before-SROS treatment period, the  $X_i$ s are other explanatory variables, Greek letters represent regression coefficients, and “e” is a random error assumed to have a mean of zero, have a constant variance, and be uncorrelated with the explanatory variables.

The distinguishing characteristic of the conditional change model is that the inclusion of the regression coefficient  $\gamma$  explicitly allows for causal dependence of an individual’s outcome after treatment on the individual’s status before treatment. This is a major strength of the conditional change model. For example, it makes sense to think that whether or not an individual used a particular drug during the before-treatment reference period affects the likelihood that one will use the same drug during the after-treatment reference period. Similarly, given the importance of previous work experience in obtaining and keeping a job, an individual’s employment status before treatment seems likely to affect employment status after treatment.

### *Dichotomous Variables*

For dichotomous variables, **logit** analysis was employed. To illustrate the model, let D2 denote the after-treatment measurement of the dichotomous outcome (e.g., whether or not the respondent reporting using heroin after treatment). Then  $D2=0$  if no (did not use heroin after treatment) and  $D2 = 1$  if yes (did use heroin after treatment). Let D 1 denote the before-treatment period of the same dichotomous outcome. In other words,  $D 1 =0$  if did not use heroin before treatment and  $D1 = 1$  if did use heroin before treatment. Let X and Z denote the other explanatory variables, which may be either dichotomous or continuous. (NOTE: two explanatory variables are used simply for illustrative purposes; additional explanatory variables would not change the form of the model.) Then the “unified model” for dichotomous outcomes is simply:

$$\text{logit}(D2) = b_0 + b_1 \cdot D1 + b_2 \cdot X + b_3 \cdot Z$$

## APPENDIX B: DETAILED TABLES

**Table B-1. Percentage who used drugs and alcohol during the five years before and after treatment**  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Drug	Percentage using 5 or more times							Percentage Difference <sup>a</sup>	N
	Before	(n)	After	(n)	Difference <sup>a</sup>	Standard Error	(n)		
Alcohol	90.7	1,794	77.8	1,790	-13.1 *	1.6	1,787	-14	960,561
Any illicit drug	75.4	1,799	59.3	1,799	-16.1 *	1.5	1,799	-21	967,012
Marijuana	56.5	1,789	41.0	1,774	-16.0 *	1.6	1,774	-28	952,103
Cocaine	42.9	1,788	23.4	1,799	-19.5 *	2.0	1,785	-45	958,818
Crack	29.0	1,791	24.3	1,786	-4.8 *	1.6	1,784	-17	957,890
Heroin	13.8	1,791	12.0	1,788	-1.9 *	0.7	1,787	-14	959,101
Inhalants	4.3	1,787	2.0	1,782	-2.3 *	0.7	1,782	-53	958,560
PCP	4.5	1,790	1.8	1,782	-2.7 *	0.5	1,782	-60	957,052
Hallucinogens	13.1	1,788	5.7	1,778	-7.4 *	0.9	1,778	-56	955,836
Illegal methadone	2.9	1,789	2.2	1,789	-0.6	0.4	1,789	n.s.	961,428
Narcotics	8.8	1,786	6.1	1,786	-2.7 *	0.6	1,786	-31	960,152
Methamphetamines	14.3	1,789	8.1	1,781	-6.2 *	1.2	1,780	-43	958,332
Downers	14.7	1,790	7.6	1,782	-7.1 *	0.8	1,782	-48	958,638
Other	6.5	1,755	-3.2	1,755	3.4 *	0.5	1,755	-	944,695

Note: Percentages are weighted to reflect a population of approximately 967,009 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the “before” or “after” question were not used to calculate the difference or p-value of the paired t-test.

**Table B-2. Percentage in inpatient treatment who used drugs and alcohol during the five years before and after treatment**  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Drug	Percentage using 5 or more times						Percentage Difference <sup>a</sup>	N	
	Before	(n)	After	(n)	Difference <sup>a</sup>	Standard Error (n)			
Alcohol	91.8	697	78.7	699	-13.4 *	1.7	696	-15	355,665
Any illicit drug	77.7	700	58.4	700	-19.2 *	1.9	700	-25	357,954
Marijuana	54.8	696	36.0	690	-19.0 *	1.5	690	-35	353,161
Cocaine	45.2	695	23.8	697	-21.3 *	2.5	694	-47	353,296
Crack	36.5	698	31.2	696	-5.2 *	2.2	695	-14	355,523
Heroin	14.5	697	12.6	695	-1.9	1.1	695	n.s.	354,549
Inhalants	4.6	697	1.6	6%	-3.0 *	0.7	6%	-65	355,321
PCP	4.1	696	1.4	693	-2.8 *	0.7	693	-68	353,731
Hallucinogens	10.9	697	3.9	695	-7.0 *	1.2	695	-64	355,858
Illegal methadone	3.4	6%	2.2	6%	-1.2	0.8	6%	n.s.	355,493
Narcotics	9.4	695	6.0	695	-3.4 *	1.0	695	-36	354,982
Methamphetamines	14.0	697	7.1	6%	-6.9 *	2.0	6%	-49	356,308

See footnotes at end of table

**Table B-2. Percentage in inpatient treatment who used drugs and alcohol during the five years before and after treatment**  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Drug	Percentage using 5 or more times						Standard Error	Percentage <sup>a</sup> Difference	N
	Before	(n)	After	(n)	Difference <sup>a</sup>	(n)			
Downers	14.8	697	7.9	694	-7.0 *	1.0	694	-47	355,199
Other	8.0	680	3.5	680	-4.5 *	0.7	680	-56	348,064

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990 who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the "before" or "after" question were not used to calculate the difference or p-value of the paired t-test.

**Table B-3. Percentage in residential treatment who used drugs and alcohol during the five years before and after treatment**  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-19903]

Drug	Percentage using 5 or more times							Percentage Difference <sup>a</sup>	N
	Before	(n)	After	(n)	Difference <sup>a</sup>	Standard Error	(n)		
Alcohol	92.1	326	81.3	325	-10.8 *	2.3	325	-12	173,627
Any illicit drug	88.8	326	68.6	326	-20.2 *	2.5	326	-23	173,811
Marijuana	67.9	323	47.1	320	-21.6 *	3.1	320	-32	170,713
Cocaine	53.4	324	24.3	324	-29.2 *	3.9	323	-55	171,999
Crack	48.5	324	33.8	322	-15.3 *	4.4	321	-32	170,542
Heroin	9.2	323	9.0	324	-0.2	1.4	323	n.s.	172,006
Inhalants	7.3	324	3.1	322	-3.9	2.1	322	n.s.	170,794
PCP	5.4	324	1.6	321	-3.9 *	1.6	321	-72	170,588
Hallucinogens	19.2	322	6.5	320	-12.9 *	2.9	320	-67	169,317
Illegal methadone	2.2	323	1.9	323	-0.3	1.2	323	n.s.	171,957
Narcotics	12.3	321	9.1	321	-3.2	1.7	321	n.s.	171,300
Methamphetamines	23.1	323	14.9	321	-8.4 *	3.1	320	-36	170,164

See footnotes at end of table

**Table B-3. Percentage in residential treatment who used drugs and alcohol during the five years before and after treatment**  
 [SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Drug	Percentage using 5 or more times							Percentage Difference <sup>a</sup>	N
	Before	(n)	After	(n)	Difference <sup>a</sup>	Standard Error	(n)		
Downers	19.9	323	12.5	321	-7.6 *	1.4	321	-38	171,335
Other	7.4	321	5.3	321	-2.1	1.1	321	n.s.	170,909

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ .

n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the “before” or “after” question were not used to calculate the difference or p-value of the paired t-test.

**Table B-4. Percentage in outpatient methadone treatment who used drugs and alcohol during the five years before and after treatment**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Drug	Percentage using 5 or more times							Percentage Difference <sup>a</sup>	N
	Before	(n)	After	(n)	Difference <sup>a</sup>	Standard Error	(n)		
Alcohol	78.0	217	63.8	216	-14.6 *	3.4	216	-19	47,630
Any illicit drug	95.2	217	86.1	217	-9.1 *	1.8	217	-10	47,871
Marijuana	58.5	216	39.3	215	-19.4 *	3.2	215	-33	47,558
Cocaine	61.2	217	49.3	216	-12.0 *	4.4	216	-20	47,711
Crack	24.2	215	23.7	215	-0.5	5.9	215	n.s.	47,248
Heroin	82.1	216	60.1	216	-22.1 *	5.1	216	-27	47,820
Inhalants	1.6	215	1.0	213	-0.7	0.5	213	n.s.	47,180
PCP	3.4	216	0.7	215	-2.6 *	1.0	215	-76	47,662
Hallucinogens	12.4	215	3.8	214	-8.6 *	2.9	214	-69	47,507
Illegal methadone	15.4	216	10.9	216	-4.5 *	2.2	216	-29	47,820
Narcotics	17.0	216	12.4	216	-4.6 *	2.0	216	-27	47,713
Methamphetamines	11.1	215	3.1	214	-8.1 *	2.3	214	-73	47,421
Downers	28.8	216	14.7	214	-14.3 *	3.0	214	-50	46,924
Other	9.6	212	5.4	212	4.3	2.2	212	n.s.	47,000

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the “before” or “after” question were not used to calculate the difference or p-value of the paired t-test.

**Table B-5. Percentage in outpatient nonmethadone treatment who used drugs and alcohol during the five years before and after treatment**  
**[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Drug	Percentage using 5 or more times							Percentage Difference <sup>a</sup>	N
	Before	(n)	After	(n)	Difference <sup>a</sup>	Standard Error	(n)		
Alcohol	90.5	554	77.1	550	-13.5 *	3.2	550	-15	383,639
Any illicit drug	64.9	556	52.6	556	-12.3 *	2.6	556	-19	387,375
Marijuana	52.8	554	43.2	549	-10.2 *	2.6	549	-19	380,671
Cocaine	33.9	552	19.5	553	-14.4 *	3.0	552	-42	385,813
Crack	14.0	554	13.7	553	-0.3	2.2	553	n.s.	384,577
Heroin	6.7	555	6.7	553	-0.1	1.3	553	n.s.	384,726
Inhalants	3.0	551	1.9	551	-1.1	1.2	551	n.s.	385,266
PCP	4.5	554	2.4	553	-2.1 *	1.0	553	-47	385,072
Hallucinogens	12.5	554	7.4	549	-5.2 *	1.6	549	-42	383,155
Illegal methadone	1.1	554	1.2	554	0.1	0.6	554	n.s.	386,157
Narcotics	5.7	554	4.2	554	-1.5	2.0	554	n.s.	386,157
Methamphetamines	10.9	554	6.6	550	-4.3 *	2.3	550	-39	384,439
Downers	10.4	554	4.2	553	-6.3 *	3.1	553	-61	385,180
Other	4.4	542	1.6	542	-2.8 *	2.2	542	-64	378,721

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the “before” or “after” question were not used to calculate the difference or p-value of the paired t-test.

**Table B-6. Number of days per month used specific drugs in five years before and after treatment, among respondents who used the drug during the five years before treatment**  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Drug	Number of days used						Standard Error	Percentage <sup>a</sup> Difference	N
	Before	(n)	After	(n)	Difference <sup>a</sup>	(n)			
Alcohol	16.8	1,374	10.7	1,296	-5.5 *	0.5	1,296	-33	748,089
Marijuana	14.6	875	7.1	840	-7.1 *	0.5	840	-49	471,431
Cocaine	12.1	725	4.7	701	-7.2 *	0.5	701	-60	377,410
Crack	16.2	445	8.6	428	-7.6 *	0.8	428	-47	245,086
Heroin	21.2	312	13.4	298	-7.6 *	0.9	298	-36	120,217
Inhalants	7.7	84	1.8	84	-6.0 *	1.3	84	-78	36,510
PCP	8.8	77	2.5	77	-6.2 *	1.3	77	-70	40,236
Hallucinogens	4.5	232	1.7	229	-2.8 *	0.7	229	-62	121,655
Illegal methadone	8.3	74	3.2	74	-5.1 *	1.5	74	-61	26,738
Narcotics	10.5	163	4.4	159	-5.8 *	0.9	159	-55	77,093
Methamphetamines	12.0	249	3.7	242	-8.0 *	1.1	242	-67	128,597
Downers	10.1	276	5.0	272	-5.2 *	0.7	272	-51	130,167
<b>Other</b>	<b>15.0</b>	<b>105</b>	<b>4.7</b>	<b>103</b>	<b>-0.4 *</b>	<b>1.5</b>	<b>103</b>	<b>69</b>	<b>56,449</b>

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the “before” or “after” question were not used to calculate the difference or p-value of the paired t-test.

**Table B-7. Number of days per month used specific drugs in five years before and after treatment, among respondents in inpatient treatment who used the drug during the five years before treatment [SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Drug	Number of days used						Standard error	Percentage Difference <sup>a</sup>	N
	Before	(n)	After	(n)	Difference <sup>a</sup>	(n)			
Alcohol	18.2	546	11.6	509	-6.1 *	508	0.8	-34	263,618
Marijuana	14.6	319	5.7	308	-8.5 *	308	0.7	-58	160,952
Cocaine	13.7	268	5.3	261	-8.1 *	261	0.6	-59	141,104
Crack	16.5	193	10.0	188	-6.6 *	188	0.7	-40	108,069
Heroin	22.3	87	13.8	83	-8.4 *	83	1.1	-38	44,825
Inhalants	12.2	35	2.5	35	-9.7 *	35	2.5	-80	13,719
PCP	10.2	24	3.2	24	-6.9 *	24	1.1	-68	13,301
Hallucinogens	4.8	76	1.9	76	-2.9 *	76	1.0	-60	37,230
Illegal methadone	8.9	22	2.5	22	-6.5 *	22	1.9	-73	11,969
Narcotics	8.4	52	3.9	52	-4.5 *	52	1.0	-54	29,032
Methamphetamines	13.3	90	3.5	87	-9.5 *	87	1.0	-71	43,472
Downers	11.7	94	5.1	92	-6.8 *	92	1.2	-58	49,512
Other	13.3	49	4.5	48	8.6 *	48	1.7	65	24,528

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the “before” or “after” question were not used to calculate the difference or p-value of the paired t-test.

**Table B-8. Number of days per month used specific drugs in five years before and after treatment, among respondents in residential treatment who used the drug during the five years before treatment [SROS sampled 3,947 clients discharged from drug treatment in 1989-1990]**

Drug	Number of days used							Percentage D i f f e r e n c e	
	Before	(n)	After	(n)	Difference <sup>a</sup>	Standard Error	(n)		
Alcohol	18.2	246	12.3	228	-5.5 *	1.1	228	-30	120,698
Marijuana	15.8	186	8.1	179	-7.3 *	1.3	179	-46	96,774
Cocaine	9.8	153	3.1	148	-6.3 *	1.1	148	-64	83,049
Crack	18.7	129	7.3	121	-11.0 *	1.5	121	-59	69,289
Heroin	17.7	30	12.2	28	-5.2 *	2.0	28	-29	13,795
Inhalants	5.6	22	1.3	22	-4.3 *	1.0	22	-77	10,297
PCP	9.3	20	0.2	20	-9.1 *	4.0	20	-98	9,238
Hallucinogens	4.8	64	1.2	62	-3.6 *	1.1	62	-75	31,181
Illegal methadone	3.2	6	3.5	6	0.3	2.9	6	n.a.	3,847
Narcotics	10.1	36	4.1	35	-5.5 *	1.9	35	-54	18,777
Methamphetamines	10.8	64	3.4	62	-6.9 *	1.4	62	-64	36,498
Downers	6.7	64	4.3	63	-2.5 *	0.8	63	-37	32,108
<b>Other</b>	<b>14.7</b>	<b>21</b>	<b>8.2</b>	<b>20</b>	<b>7.2 *</b>	<b>2.2</b>	<b>20</b>	<b>-49</b>	<b>10,765</b>

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at p < .05. n.s. Difference not significant at p < .05.

<sup>a</sup> Cases missing a response for either the "before" or "after" question were not used to calculate the difference or p-value of the paired t-test.

n.a. Significant percentage difference is not reported due to extremely small sample size of less than 20 cases.

**Table B-9. Number of days per month used specific drugs in five years before and after treatment, among respondents in outpatient methadone treatment who used the drug during the five years before treatment**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Drug	Number of days used						Standard error	Percentage Difference <sup>a</sup>	N
	Before	(n)	After	(n)	Difference <sup>a</sup>	(n)			
Alcohol	14.9	141	10.5	139	-4.3 *	1.8	139	-29	32,673
Marijuana	13.2	102	5.5	98	-7.2 *	1.3	98	-55	24,471
Cocaine	13.8	116	8.2	108	-5.7 *	1.2	108	-41	24,122
Crack	11.9	45	7.3	41	-4.6 *	1.1	41	-39	10,326
Heroin	24.4	156	14.8	148	-9.4 *	1.2	148	-39	33,791
Inhalants	11.7	3	4.8	3	-6.9	6.4	- 3	n.a.	775
PCP	7.9	9	0.8	9	-7.1 *	3.2	9	n.a.	1,567
Hallucinogens	3.0	23	0.6	23	-2.3 *	0.6	23	-77	5,897
Illegal methadone	8.7	37	4.4	37	-4.3 *	1.9	37	-49	6,960
Narcotics	12.9	37	4.0	36	-9.0 *	2.2	36	-70	7,695
Methamphetamines	11.2	25	1.8	25	-9.4 *	3.1	25	-84	5,312
Downers	9.7	57	3.5	56	-6.2 *	1.0	56	-64	12,882
Other	20.4	13	12.6	13	-7.8 *	1.1	13	n.a.	3,726

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the “before” or “after” question were not used to calculate the difference or p-value of the paired t-test.

n.a. Significant percentage difference is not reported due to extremely small sample size of less than 20 cases.

**Table B-10. Number of days per month used specific drugs in five years before and after treatment, among respondents in outpatient nonmethadone treatment who used the drug during the five years before treatment**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Drug	Number of days used					Standard Error (n)	Percentage Difference <sup>a</sup>	N		
	Before	(n)	After	(n)	Difference <sup>a</sup>					
Alcohol	15.0	441	9.3	420	-5.2 *	9.3	420	-35	285,078	
Marijuana	14.1	268	8.0	255	-5.7 *	1.1	255	-40	16,800	
Cocaine	11.6	188	4.3	184	-7.2 *	1.0	184	-62	118,051	
Crack	13.0	78	7.7	78	-5.3 *	1.8	78	-41	48,232	
Heroin	16.1	39	11.1	39	-5.0	2.6	39	n.s.	23,448	
Inhalants	4.2	24	1.1	24	-3.1 *	1.4	24	-74	11,719	
PCP	7.4	24	3.5	24	-3.9	2.1	24	n.s.	16,130	
Hallucinogens	4.2	69	2.1	68	-2.1	1.4	68	n.s.	45,360	
Illegal methadone	10.9	9	3.3	9	-7.6	7.0	9	n.a.	3,962	
Narcotics	13.0	38	5.4	36	-6.6 *	2.2	36	-51	19,708	
Methamphetamines	11.9	70	4.3	68	-7.0 *	2.6	68	-59	39,905	
Downers	11.3	61	6.2	61	-5.1	2.2	61	n.s.	34,307	
<b>Other</b>	<b>16.6</b>	<b>22</b>	<b>0.8</b>	<b>22</b>	<b>-15.8</b>	<b>*</b>	<b>3.1</b>	<b>22</b>	<b>95</b>	<b>16,027</b>

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the “before” or “after” question were not used to calculate the difference or p-value of the paired t-test. n.a. Significant percentage difference is not reported due to extremely small sample size of less than 20 cases.

**Table B-11. Number of days per month used specific drugs in five years before and after treatment, among respondents who used the drug during the five years before and after treatment**  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Drug	Number of days used						Percentage Difference <sup>a</sup>	N	
	Before	(n)	After	(n)	Difference <sup>a</sup>	Standard Error (n)			
Alcohol	15.7	1,123	13.3	1,045	-2.4 *	0.4	1,045	-15	537,084
Marijuana	15.2	560	10.9	525	-4.3 *	0.6	525	-28	292,921
Cocaine	13.7	342	10.8	318	-2.9 *	0.7	318	-21	158,608
Crack	16.7	260	15.0	243	-1.8 *	0.8	243	-11	136,078
Heroin	23.1	212	21.3	198	-1.8	0.9	198	n.s.	72,740
Inhalants	7.2	20	7.6	20	0.4	3.4	20	n.s.	8,492
PCP	15.8	18	11.1	18	-4.6	2.8	18	n.a.	9,208
Hallucinogens	5.5	65	5.9	62	0.5	1.3	62	n.s.	35,400
Illegal methadone	5.5	32	8.2	32	2.6 *	1.2	32	47	10,616
Narcotics	11.3	81	9.0	77	-2.2	1.2	77	n.s.	36,492
Methamphetamines	11.7	91	9.5	84	-2.2	1.4	84	n.s.	48,510
Downers	12.0	130	10.7	126	-1.3	1.2	126	n.s.	60,553
Other	15.9	33	14.7	31	1.2	1.2	31	n.s.	17,624

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the “before” or “after” question were not used to calculate the difference or p-value of the paired t-test. n.a. Significant percentage difference is not reported due to extremely small sample size of less than 20 cases.

**Table B-12. Number of days per month used specific drugs in five years before and after treatment, among respondents in inpatient treatment who used the drug before and after treatment**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Drug	Number of days used						Percentage Difference <sup>a</sup>	N	
	Before	(n)	After	(n)	Difference <sup>a</sup>	Standard Error (n)			
Alcohol	17.9	449	14.1	412	-3.0 *	0.7	412	-17	215,981
Marijuana	16.3	193	9.6	182	-6.2 *	0.8	182	-38	96,405
Cocaine	15.3	117	12.1	110	-2.4 *	0.9	110	-16	61,633
Crack	16.4	128	15.3	123	-1.4	0.8	123	n.s.	70,975
Heroin	24.8	56	21.9	52	-3.1 *	1.0	52	-13	28,262
Inhalants	15.9	5	15.8	5	-0.1	13.0	5	n.a.	2,195
PCP	18.9	6	13.2	6	-5.7	5.0	6	n.a.	3,263
Hallucinogens	8.5	17	8.0	17	-0.5	2.6	17	n.a.	8,832
Illegal methadone	5.9	8	6.4	8	0.5	0.5	8	n.a.	4,606
Narcotics	9.9	22	8.4	22	-1.5	1.2	22	n.s.	13,593
Methamphetamines	12.9	31	10.3	28	-1.9	1.6	28	n.s.	14,896
Downers	13.9	42	12.2	40	-2.2	2.1	40	n.s.	20,777
Other	16.0	16	13.5	15	-2.0	2.4	15	n.a.	8,213

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at p < .05. n.s. Difference not significant at p < .05.

<sup>a</sup> Cases missing a response for either the “before” or “after” question were not used to calculate the difference or p-value of the paired t-test.

n.a. Significant percentage difference is not reported due to extremely small sample size of less than 20 cases.

**Table B-13. Number of days per month used specific drugs in five years before and after treatment, among respondents in residential treatment who used the drug before and after treatment**  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Drug	Number of days used					Standard Error	(n)	Percentage Difference <sup>a</sup>	N
	Before	(n)	After	(n)	Difference <sup>a</sup>				
Alcohol	18.2	213	14.5	195	-3.2 *	1.0	195	-18	102,640
Marijuana	17.3	123	12.9	116	-4.0 *	1.5	116	-23	60,765
Cocaine	12.4	67	8.0	62	-3.6 *	1.7	62	-29	32,387
Crack	20.5	62	16.8	54	-3.3 *	1.5	54	-16	30,148
Heroin	20.1	17	21.1	15	1.3 *	0.6	15	n.a.	8,000
Inhalants	4.2	7	4.6	7	0.4	0.4	7	n.a.	2,918
PCP	17.2	3	1.2	3	-16.0 *	7.6	3	n.a.	1,328
Hallucinogens	5.3	17	5.7	15	0.4	2.5	15	n.a.	6,618
Illegal methadone	8.0	1	26.0	1	18.0	0.0	1	n.a.	521
Narcotics	10.5	19	7.9	18	-1.7	2.0	18	n.a.	9,845
Methamphetamines	11.6	27	7.2	25	-3.5	1.9	25	n.s.	17,491
Downers	8.0	33	7.7	32	-0.4	0.7	32	n.s.	17,798
Other	17.5	8	18.7	7	0.9	1.7	3	n.a.	4,705

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the "before" or "after" question were not used to calculate the difference or p-value of the paired t-test.

n.a. Significant percentage difference is not reported due to extremely small sample size of less than 20 cases.

**Table B-14. Number of days per month used specific drugs in five years before and after treatment, among respondents in outpatient methadone treatment who used the drug before and after treatment [SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Drug	Number of days used						Standard Error	Percentage Difference <sup>a</sup>	N
	Before	(n)	After	(n)	Difference <sup>a</sup>	(n)			
Alcohol	15.5	105	13.6	103	-1.7	1.9	103	n.s.	25,143
Marijuana	15.7	56	9.3	52	-5.7 *	2.0	52	-36	14,645
Cocaine	15.6	78	11.9	70	-4.0 *	1.7	70	-26	16,596
Crack	15.3	25	13.8	21	-1.7	1.4	21	n.s.	5,456
Heroin	26.2	115	21.9	107	-4.0 *	1.0	107	-15	22,863
Inhalants	8.0	1	8.0	1	0.0	0.0	1	n.a.	465
PCP	3.5	2	4.2	2	0.7	0.9	2	n.a.	311
Hallucinogens	3.5	5	2.4	5	-1.1	1.0	5	n.a.	1,562
Illegal methadone	6.3	18	9.4	18	3.1	2.1	18	n.a.	3,281
Narcotics	13.6	21	6.9	20	-7.0 *	3.1	20	-51	4,488
Methamphetamines	23.6	6	9.5	6	-14.0 *	4.5	6	n.a.	977
Downers	11.2	27	7.8	26	-3.4	1.9	26	n.s.	5,745
<b>Other</b>	<b>24.0</b>	<b>5</b>	<b>24.0</b>	<b>5</b>	<b>0.0</b>	<b>0.0</b>	<b>5</b>	<b>n.a.</b>	<b>1,960</b>

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at p < .05. n.s. Difference not significant at p < .05.

<sup>a</sup> Cases missing a response for either the “before” or “after” question were not used to calculate the difference or p-value of the paired t-test.

n.a. Significant percentage difference is not reported due to extremely small sample size of less than 20 cases.

**Table B-15. Number of days per month used specific drugs in five years before and after treatment, among respondents in outpatient nonmethadone treatment who used the drug before and after treatment**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Drug	Number of days used						Percentage <sup>a</sup> Difference	N	
	Before	(n)	After	(n)	Difference <sup>a</sup>	Standard Error			
Alcohol	14.2	356	11.9	335	-1.6 *	0.7	335	-11	223,320
Marijuana	14.3	188	11.1	175	-2.7 *	0.8	175	-19	121,107
Cocaine	13.5	80	10.7	76	-2.8	1.6	76	n.s.	47,992
Crack	13.7	45	12.6	45	-1.1	1.3	45	n.s.	29,499
Heroin	16.2	24	19.1	24	2.9	1.9	24	n.s.	13,615
Inhalants	3.7	7	4.5	7	0.8	1.0	7	n.a.	2,915
PCP	13.8	7	13.1	7	-0.7	2.4	7	n.a.	4,306
Hallucinogens	4.2	26	5.3	25	1.1	2.0	25	n.s.	18,334
Illegal methadone	3.1	5	5.9	5	2.7	1.7	5	n.a.	2,208
Narcotics	15.7	19	12.5	17	-1.5	3.9	17	n.a.	8,566
Methamphetamines	13.1	27	11.4	25	-0.2	3.0	25	n.s.	15,146
Downers	13.3	28	13.1	28	-0.2	3.6	28	n.s.	16,233
Other	4.9	4	4.9	4	0.0	0.0	4	n.a.	2,746

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the “before” or “after” question were not used to calculate the difference or p-value of the paired t-test.

n.a. Significant percentage difference is not reported due to extremely small sample size of less than 20 cases.

Table B-1 6. Percentage who used alcohol during the five years before and after treatment  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage using alcohol 5 or more times					Standard Error	(n)	Percentage Difference'	N
		Before	(n)	After	(n)	Difference'				
<b>TOTAL SAMPLE</b>	<b>3,047</b>									
<b>Total Interviewed</b>	<b>1,799</b>	<b>90.7</b>	<b>1,794</b>	<b>77.8</b>	<b>1,790</b>	<b>-13.1 *</b>	<b>1.6</b>	<b>1787</b>	<b>-14</b>	<b>960,561</b>
<b>Sex</b>										
Male	1,251	93.7	1,247	80.4	1,243	-13.5 *	1.9	1,241	-14	685,381
Female	548	83.0	547	71.4	547	-12.0 *	2.5	546	-14	275,180
<b>Race/Ethnicity</b>										
White (non-Hispanic)	1,101	91.8	1,100	78.9	1,097	-13.2 *	1.6	1,096	-14	578,018
Black (non-Hispanic)	499	88.4	49s	79.4	49s	-9.1 *	2.2	493	-10	270,645
Hispanic	137	90.5	137	66.2	136	-24.6 *	5.7	136	-27	79,289
<b>Age at Time of Discharge</b>										
Less than 18	156	80.2	155	92.0	153	10.8 *	2.8	153	13	76,377
18 -29	674	90.9	673	79.1	671	-12.1 *	1.9	670	-13	378,769
30 - 39	660	92.5	657	78.1	657	-14.5 *	1.9	MS	-16	344,275
40 +	309	90.9	309	67.3	309	-23.6 *	2.9	309	-26	161,141
<b>Education</b>										
1 to 9 years	306	91.7	304	77.6	304	-14.3 *	4.2	303	-16	172,361
10 to 11 years	487	90.5	486	77.8	483	-13.0 *	2.2	482	-14	265,930
12 years or GED	517	93.3	516	81.4	515	-12.2 *	1.9	515	-13	269,842
College/grad school	486	87.6	485	74.3	485	-13.3 •	2.6	484	-15	249,788

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Table B-16. Percentage who used alcohol during the five years before and after treatment  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage using alcohol 5 or more times							Percentage Difference'	N
		Before	(n)	After	(n)	Difference'	Standard Error	(n)		
<b>Self-Reported Treatment Type</b>										
Inpatient	700	91.8	697	78.7	699	-WA *	1.7	6 %	-15	355,665
Residential	326	92.1	326	81.3	325	-10.8 *	2.3	325	-12	173,627
Outpatient methadone	217	78.0	217	63.8	216	-14.6 *	3.4	216	-19	47,630
Outpatient nonmethadone	556	90.5	554	77.1	550	-13.5 *	3.2	550	-15	383,639
<b>Main Drug at Time of Intake<sup>b</sup></b>										
Alcohol	1,117	97.5	1,115	82.4	1,114	-15.1 •	2.1	1,112	-15	617,920
Marijuana	443	93.6	441	81.4	441	-12.2 *	2.4	440	-13	247,956
Cocaine	443	91.1	432	78.3	430	-13.3 *	2.0	430	-15	221,756
Crack	382	90.3	379	78.3	380	-12.1 *	1.8	378	-13	210,812
Heroin	315	80.8	315	71.0	314	-10.0 *	2.3	314	-12	109,496
<b>Self-Reported Reasons for Entering Treatment<sup>b</sup></b>										
Pressure from criminal justice system	522	92.4	521	81.0	520	-11.7 *	3.6	519	-13	309,388
Health problems	437	92.7	436	75.3	437	-17.5 *	2.0	436	-19	223,898
Relationship problems	837	92.0	835	77.4	833	-14.8 *	2.2	831	-16	438,974
Pressure from employer	132	95.9	132	79.4	131	-16.5 *	3.4	131	-17	65,448
Financial problems	501	94.7	499	78.1	499	-16.6 *	2.1	497	-18	253,295
<b>Length of stay</b>										
Less than 1 week	299	91.9	2 %	83.9	297	-8.6 *	1.9	2 %	-9	177,405
1 week - less than 1 month	473	90.2	472	79.0	471	-11.3 *	1.9	470	-13	237,393
1 month - less than 6 months	661	90.4	660	78.1	657	-12.6 *	2.7	657	-14	355,565
6 months or more	345	90.1	345	67.7	344	-22.3 *	3.6	344	-25	173,379

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Table B-16. Percentage who used alcohol during the five years before and after treatment  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage using alcohol 5 or more times							Percentage Difference'	N
		Before	(n)	After	(n)	Difference'	Standard Error	(n)		
<b>Completion of Treatment</b>										
Treatment completed	1,190	92.8	1,187	76.3	1,184	-16.6 *	1.8	1,182	-18	650,378
Treatment not completed	507	86.5	506	80.7	506	-5.9 *	2.0	505	-7	257,320
<b>Client Satisfaction with Treatment Episode</b>										
Very helpful	759	91.2	758	69.9	754	-21.5 *	2.8	754	-24	411,243
Somewhat/not helpful	977	90.8	974	83.8	975	-7.0 *	1.5	972	-8	515,211
<b>Number of Other Treatment Episodes in Lifetime</b>										
0	531	90.0	530	72.0	528	-18.3 *	3.3	527	-20	313,339
1-2	708	89.9	707	80.9	705	-9.2 *	1.5	705	-10	366,036
3 or more	525	92.7	522	80.7	522	-12.1 *	1.5	520	-13	259,685
<b>Number of Treatment Episodes Before SROS Episode</b>										
0	984	90.1	982	77.9	978	-12.5 *	2.3	977	-14	551,922
1-2	553	91.5	551	79.2	552	-12.5 *	1.7	550	-14	275,614
3 or more	244	91.5	243	74.7	242	-16.8 *	2.4	242	-18	121,732
<b>Number of Treatment Episodes After SROS Episode</b>										
0	839	90.3	837	71.3	834	-19.2 *	2.2	833	-21	483,632
1 or more	943	91.2	940	84.6	939	-6.8 *	1.5	937	-7	467,6%

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the "before" or "after" question were not used to calculate the difference or p-value of the paired t-test.

<sup>b</sup> Respondents could be classified in more than one or none of the categories.

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**Table B-17. Percentage who used any illicit drug during the five years before and after treatment  
ISROS sampled 3,047 clients discharged from drug treatment in 1989-19901**

Characteristics	n	Percentage using any illicit drug 5 or more times					Standard Error	Percentage Difference"	N	
		Before	(n)	After	(n)	Difference*				
<b>TOTAL SAMPLE</b>	<b>3,047</b>									
<b>Total Interviewed</b>	<b>1,799</b>	<b>75.4</b>	<b>1,799</b>	<b>59.3</b>	<b>1,799</b>	<b>-16.1 *</b>	<b>1.5</b>	<b>1,799</b>	<b>-21</b>	<b>967,012</b>
<b>Sex</b>										
<b>Male</b>	<b>1,251</b>	<b>73.4</b>	<b>1,251</b>	<b>60.6</b>	<b>1,251</b>	<b>-12.8 *</b>	<b>1.5</b>	<b>1,251</b>	<b>-17</b>	<b>690,409</b>
<b>Female</b>	<b>548</b>	<b>80.4</b>	<b>548</b>	<b>56.0</b>	<b>548</b>	<b>-24.3 *</b>	<b>2.4</b>	<b>548</b>	<b>-30</b>	<b>276,602</b>
<b>Race/Ethnicity</b>										
<b>White (non-Hispanic)</b>	<b>1,101</b>	<b>76.3</b>	<b>1,101</b>	<b>59.5</b>	<b>1,101</b>	<b>-16.8 *</b>	<b>2.0</b>	<b>1,101</b>	<b>-22</b>	<b>580,081</b>
<b>Black (non-Hispanic)</b>	<b>499</b>	<b>81.5</b>	<b>499</b>	<b>63.2</b>	<b>499</b>	<b>-18.4 *</b>	<b>2.5</b>	<b>499</b>	<b>-23</b>	<b>274,062</b>
<b>Hispanic</b>	<b>137</b>	<b>49.5</b>	<b>137</b>	<b>40.5</b>	<b>137</b>	<b>-9.0 *</b>	<b>2.7</b>	<b>137</b>	<b>-18</b>	<b>79,530</b>
<b>Age at Time of Discharge</b>										
<b>Less than 18</b>	<b>156</b>	<b>71.1</b>	<b>156</b>	<b>73.9</b>	<b>156</b>	<b>2.9</b>	<b>4.6</b>	<b>156</b>	<b>n.s.</b>	<b>77,605</b>
<b>18-29</b>	<b>674</b>	<b>85.9</b>	<b>674</b>	<b>68.2</b>	<b>674</b>	<b>-17.7 *</b>	<b>1.9</b>	<b>674</b>	<b>-21</b>	<b>381,351</b>
<b>30 - 39</b>	<b>660</b>	<b>81.2</b>	<b>660</b>	<b>60.2</b>	<b>660</b>	<b>-20.9 *</b>	<b>2.4</b>	<b>660</b>	<b>-26</b>	<b>346,915</b>
<b>40 +</b>	<b>309</b>	<b>40.4</b>	<b>309</b>	<b>29.2</b>	<b>309</b>	<b>-11.2 *</b>	<b>1.9</b>	<b>309</b>	<b>-28</b>	<b>161,141</b>
<b>Education</b>										
<b>1 to 9 years</b>	<b>306</b>	<b>64.7</b>	<b>306</b>	<b>52.3</b>	<b>306</b>	<b>-12.3 *</b>	<b>2.8</b>	<b>306</b>	<b>-19</b>	<b>173,263</b>
<b>10 to 11 years</b>	<b>487</b>	<b>83.0</b>	<b>487</b>	<b>66.7</b>	<b>487</b>	<b>-16.3 *</b>	<b>3.2</b>	<b>487</b>	<b>-20</b>	<b>268,639</b>
<b>12 years or GED</b>	<b>517</b>	<b>75.2</b>	<b>517</b>	<b>60.0</b>	<b>517</b>	<b>-15.2 *</b>	<b>2.4</b>	<b>517</b>	<b>-20</b>	<b>271,705</b>
<b>College/grad school</b>	<b>486</b>	<b>75.0</b>	<b>486</b>	<b>55.2</b>	<b>486</b>	<b>-19.8 *</b>	<b>3.1</b>	<b>486</b>	<b>-26</b>	<b>250,764</b>

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**Table B-17. Percentage who used any illicit drug during the five years before and after treatment  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Characteristics	n	Percentage using any illicit drug 5 or more times						Standard Error (n)	Percentage Difference"	N
		Before (n)	After (n)	Difference"						
<b>Self-Reported Treatment Type</b>										
Inpatient	700	77.7	700	58.4	708	-19.2 *	1.9	700	-25	357,954
Residential	326	88.8	326	68.6	326	-20.2 *	2.5	326	-23	173,811
Outpatient methadone	217	95.0	217	86.1	217	-9.1 *	1.8	217	-10	47,871
Outpatient nonmethadone	556	64.9	556	52.6	556	-12.3 *	2.6	556	-19	387,375
<b>Main Drug at Time of Intake<sup>b</sup></b>										
Alcohol	1,117	67.4	1,117	53.1	1,117	-14.3 *	1.9	1,117	-21	620,447
Marijuana	443	96.9	443	81.6	443	-15.3 *	2.3	443	-16	248,801
Cocaine	443	98.3	443	77.0	443	-21.3 *	2.8	443	-22	223,167
Crack	382	99.2	382	75.4	382	-23.8 *	2.1	382	-24	212,232
Heroin	315	98.4	315	87.2	315	-11.2 *	2.6	315	-11	109,737
<b>Self-Reported Reasons for Entering Treatment<sup>b</sup></b>										
Pressure from criminal justice system	522	73.0	522	62.0	522	-11.0 *	2.6	522	-15	310,717
Health problems	437	74.7	437	58.0	437	-16.7 *	2.7	437	-22	224,308
Relationship problems	837	80.9	837	65.0	837	-15.9 *	1.7	837	-20	442,636
Pressure from employer	132	79.4	132	59.9	132	-19.6 *	4.2	132	-25	65,959
Financial problems	501	85.9	501	70.0	501	-15.9 *	1.8	501	-19	255,805
<b>Length of Stay</b>										
Less than 1 week	299	77.8	299	62.4	299	-15.5 *	2.3	299	-20	180,093
1 week - less than 1 month	473	80.2	473	60.7	473	-19.5 *	2.2	473	-24	238,656
1 month - less than 6 months	661	73.3	661	61.0	661	-12.3 *	2.8	661	-17	357,879
6 months or more	345	69.7	345	49.2	345	-20.5 *	2.9	345	-29	173,563

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**Table B-17. Percentage who used any illicit drug during the five years before and after treatment  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Characteristics	n	Percentage using any illicit drug 5 or more times						Standard Error	Percentage Difference <sup>b</sup>	N
		Before	(n)	After	(n)	Difference <sup>a</sup>	(n)			
<b>Completion of Treatment</b>										
Treatment completed	1,190	73.8	1,190	55.6	1,190	-18.2 *	2.0	1,190	-25	654,323
Treatment not completed	507	83.8	507	71.5	507	-12.3 *	2.4	507	-15	257,962
<b>Client Satisfaction with Treatment Episode</b>										
Very helpful	759	73.2	759	52.6	759	-20.6 *	2.1	759	-28	413,126
Somewhat/not helpful	977	78.7	977	65.9	977	-12.8 *	1.6	977	-16	517,915
<b>Number of Other Treatment Episodes in Lifetime</b>										
0	531	61.9	531	42.3	531	-19.5 *	2.9	531	-32	316,289
1-2	708	80.3	708	65.3	708	-15.1 *	1.8	708	-19	368,042
3 or more	525	87.9	525	73.6	525	-14.4 *	2.0	525	-16	261,179
<b>Number of Treatment Episodes Before SROS Episode</b>										
0	984	71.0	984	56.0	984	-15.0 *	2.1	984	-21	556,878
1-2	553	82.2	553	63.4	553	-18.7 *	2.1	553	-23	276,831
3 or more	244	85.4	244	68.3	244	-17.0 *	3.4	244	-20	122,008
<b>Number of Treatment Episodes After SROS Episode</b>										
0	839	66.0	839	45.3	839	-20.7 *	2.4	839	-31	486,859
1 or more	943	85.9	943	74.3	943	-11.6 *	1.5	943	-14	470,919

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment Between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the "before" or "after" question were not used to calculate the difference or p-value of the paired t-test.

<sup>b</sup> Respondents could be classified in more than one or none of the categories.

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**Table B-18. Percentage who used marijuana during the five years before and after treatment**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-19903

Characteristics	n	Percentage using marijuana 5 or more times					Standard Error	Percentage Difference'	N	
		Before	(n)	After	(n)	Difference'				
<b>TOTAL SAMPLE</b>	<b>3,047</b>									
Total Interviewed	1,799	56.5	1,789	41.0	1,774	-16.0 *	1.6	1774	-28	952,103
<b>Sex</b>										
Male	1,251	58.3	1,245	44.6	1,233	-14.3 *	1.6	1,233	-25	678,503
Female	548	52.2	544	32.1	541	-20.3 *	2.5	541	-39	273,600
<b>Race/Ethnicity</b>										
White (non-I&panic)	1,101	60.0	1,098	44.1	1,090	-16.1 *	1.9	1,090	-27	575,168
Black (non-Hispanic)	499	53.7	492	37.2	485	-17.8 *	2.2	485	-33	264,795
Hispanic	137	37.6	137	24.3	137	-13.2 *	3.1	137	-35	79,530
<b>Age at Time of Discharge</b>										
Less than 18	156	67.8	156	69.5	156	1.7	4.6	156	n.s.	77,605
18 - 29	674	66.3	672	51.6	667	-15.0 *	2.2	667	-23	377,636
30 - 39	660	57.1	656	35.1	649	-22.7 *	2.5	649	4 0	341,290
40 +	309	26.4	305	14.3	302	-12.7 *	2.1	302	-48	155,571
<b>Education</b>										
1 to 9 years	306	48.4	304	36.6	301	-12.5 *	3.1	301	-26	169,899
10 to 11 years	487	60.6	485	44.9	479	-16.6 *	2.4	479	-27	264,029
12 years or GED	517	58.5	514	45.0	512	-13.6 *	2.5	512	-23	267,865
College/grad school	486	55.5	483	35.3	479	-20.5 *	2.7	479	-37	247,669

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Table B-18. Percentage who used marijuana during the five years before and after treatment

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage using marijuana 5 or more times						Standard Error (n)	Percentage Difference*	N
		Before	(n)	After	(n)	Difference*				
<b>Self-Reported Treatment Type</b>										
Inpatient	700	54.8	6 %	36.0	690	-19.0 *	1.5	690	-35	353,161
Residential	326	67.9	323	47.1	320	-21.6 *	3.1	320	-32	170,713
Outpatient methadone	217	58.5	216	39.3	215	-19.4 *	3.2	215	-33	47,558
Outpatient nonmethadone	556	52.8	554	43.2	549	-10.2 *	2.6	549	-19	380,671
<b>Main Drug at Time of Intake<sup>b</sup></b>										
Alcohol	1,117	54.1	1,110	40.1	1,099	-14.5 *	1.9	1,099	-27	610,531
Marijuana	443	95.7	441	78.1	441	-17.7 *	2.2	441	-18	248,497
Cocaine	443	71.2	429	50.7	428	-20.7 *	2.8	428	-29	221,256
Crack	382	70.3	378	45.9	375	-25.0 *	2.7	375	-36	208,461
Heroin	315	58.9	312	38.0	310	-21.5 *	2.6	310	-37	107,088
<b>Self-Reported Reasons for Entering Treatment<sup>b</sup></b>										
Pressure from criminal justice system	522	61.1	519	49.1	516	-12.5 *	2.8	516	-20	306,403
Health problems	437	56.1	434	37.8	431	-18.4 *	3.0	431	-33	222,156
Relationship problems	837	60.0	834	44.3	827	-16.3 *	1.6	827	-27	437,207
Pressure from employer	132	51.1	132	39.8	132	-11.3 *	3.8	132	-22	65,959
Financial problems	501	67.7	497	46.7	495	-21.2 *	2.1	495	3 1	252,217
<b>Length of stay</b>										
Less than 1 week	299	54.3	2 %	38.0	295	-16.1 *	2.2	295	-30	177,819
1 week - less than 1 month	473	57.8	472	36.9	466	-21.8 *	2.5	466	-38	234,422
1 month - less than 6 months	661	57.1	657	47.6	652	-10.0 *	2.7	652	-18	352,643
6 months or more	345	53.6	343	34.6	340	-19.7 *	3.5	340	-37	170,399

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Table R-18. Percentage who used marijuana during the five years before and after treatment

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage using marijuana 5 or more times							Percentage Difference'	N
		Before	(n)	After	(n)	Difference'	Standard Error	(n)		
<b>Completion of Treatment</b>										
Treatment completed	1,190	54.5	1,185	38.2	1,174	-16.9 *	1.8	1,174	3 1	644,497
Treatment not completed	507	64.2	503	50.4	500	-14.1 *	2.2	500	-22	253,986
<b>Client Satisfaction with Treatment Episode</b>										
very helpful	759	52.9	753	33.0	744	-20.6 *	2.2	744	-39	404,392
Somewhat/not helpful	977	60.4	974	48.2	968	-12.6 *	1.8	968	-21	512,652
<b>Number of Other Treatment Episodes in Lifetime</b>										
0	531	48.8	528	34.5	521	-15.1 *	2.8	521	3 1	309,405
1-2	708	59.6	706	45.0	701	-15.1 *	2.0	701	-25	363,710
3 or more	525	63.5	522	45.0	519	-18.6 *	2.1	519	-29	258,878
<b>Number of Treatment Episodes Before SROS Episode</b>										
0	984	54.1	977	40.8	967	-13.9 *	2.2	967	-26	545,856
1-2	553	61.4	552	43.4	549	-18.3 *	2.1	549	-30	274,586
3 or more	244	60.0	242	38.9	240	-21.2 *	2.8	240	-35	120,367
<b>Number of Treatment Episodes After SROS Episode</b>										
0	839	52.1	836	35.2	827	-17.6 *	2.1	827	-34	478,489
1 or more	943	61.8	936	47.7	930	-14.4 *	1.8	930	-23	464,381

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the "before" or "after" question were not used to calculate the difference or p-value of the paired t-test.

<sup>b</sup> Respondents could be classified in more than one or none of the categories.

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**Table B-19. Percentage who used cocaine during the five years before and after treatment  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Characteristics	n	Percentage using cocaine 5 or more times							Percentage Difference'	N
		Before	(n)	After	(n)	Difference'	Standard Error	(n)		
<b>TOTAL SAMPLE</b>	<b>3,047</b>									
Total Interviewed	1,799	42.9	1,788	23.4	1,790	-19.5 *	2.0	1,785	-45	958,818
<b>Sex</b>										
Male	1,251	42.2	1,244	23.8	1,246	-18.4 *	2.2	1,242	-44	684,821
Female	548	44.7	544	22.4	544	-22.3 *	2.6	543	-50	273,998
<b>Race/Ethnicity</b>										
White (non-Hispanic)	1,101	45.5	1,096	23.9	1,097	-21.6 *	2.7	1,095	-47	576,695
Black (non-Hispanic)	499	41.2	495	23.0	495	-18.2 *	2.9	493	-44	271,053
Hispanic	137	30.5	136	21.6	137	-9.4 *	3.6	136	-31	79,065
<b>Age at Time of Discharge</b>										
Less than 18	156	20.2	155	28.8	156	8.5	5.1	155	U.S.	77,439
18 - 29	674	49.1	671	25.8	672	-23.3 *	3.2	671	-47	379,065
30 - 39	660	48.9	656	25.0	655	-24.0 *	2.4	653	-49	343,156
40 +	309	26.2	306	12.0	307	-14.4 *	2.7	306	-55	159,158
<b>Education</b>										
1 to 9 years	306	37.2	302	25.5	303	-11.8 *	3.6	302	-32	171,868
10 to 11 years	487	47.0	485	23.7	485	-23.2 *	3.0	484	-49	267,176
12 years or GED	517	42.1	515	23.9	515	-18.4 *	2.7	514	-44	269,680
College/grad school	486	43.5	483	21.5	484	-22.0 *	3.6	482	-51	247,454

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Table B-19. Percentage who used cocaine during the five years before and after treatment  
 [SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage using cocaine 5 or more times							Percentage Difference'	N
		Before	(n)	After	(n)	Difference'	Standard Error	(n)		
<b>Self-Reported Treatment Type</b>										
Inpatient	700	45.2	6%	23.8	697	-21.3 *	2.5	694	4 7	353,296
Residential	326	53.4	324	24.3	324	-29.2 *	3.9	323	-55	171,999
Outpatient methadone	217	61.2	217	49.3	217	-12.0 *	4.4	216	-20	47,711
Outpatient nonmethadone	556	33.9	552	19.5	553	-14.4 *	3.0	552	4 2	385,813
<b>Main Drug at Time of Intake<sup>b</sup></b>										
Alcohol	1,117	37.9	1,112	19.6	1,114	-18.4 *	2.4	1,111	4 9	617,219
Marijuana	443	48.5	443	27.4	442	-21.2 *	3.8	442	-44	248,641
Cocaine	443	92.8	428	54.2	430	-38.5 *	3.4	426	4 1	219,797
Crack	382	54.8	377	22.7	379	-31.9 *	4.0	377	-58	209,263
Heroin	315	71.1	313	47.3	313	-23.4 *	2.9	312	-33	108,102
<b>Self-Reported Reasons for Entering Treatment<sup>b</sup></b>										
Pressure from criminal justice system	522	42.8	520	26.2	520	-16.6 *	3.8	520	-39	308,878
Health problems	437	43.7	435	20.9	436	-22.9 *	2.3	435	-52	223,675
Relationship problems	837	46.1	832	24.7	834	-21.5 *	2.6	831	4 7	439,938
Pressure from employer	132	48.2	132	23.2	132	-25.0 *	5.4	132	-52	65,959
Financial problems	501	53.8	497	27.5	498	-26.4 *	2.1	497	4 9	253,944
<b>Length of Stay</b>										
Less than 1 week	299	47.0	2%	26.6	2%	-20.7 *	3.1	295	-44	178,052
1 week - less than 1 month	473	48.0	470	22.8	470	-25.2 *	2.9	468	-53	236,009
1 month - less than 6 months	661	39.3	657	25.0	659	-14.3 *	3.0	657	-36	355,161
6 months or more	345	37.3	344	15.5	344	-21.8 *	2.9	344	-58	172,776

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**Table B-19. Percentage who used cocaine during the five years before and after treatment  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Characteristics	n	Percentage using cocaine 5 or more times					Standard Error	Percentage Difference <sup>b</sup>	N	
		Before	(n)	After	(n)	Difference <sup>a</sup>				
<b>Completion of Treatment</b>										
Treatment completed	1,190	42.6	1,182	20.8	1,185	-21.7 *	2.4	1,181	-51	647,728
Treatment not completed	507	46.7	504	30.6	503	-16.2 *	2.6	502	-35	256,365
<b>Client Satisfaction with Treatment Episode</b>										
Very helpful	759	41.3	753	17.2	754	-24.0 *	2.5	753	-58	409,359
Somewhat/not helpful	977	44.8	972	28.4	973	-16.5 *	2.5	969	-37	513,489
<b>Number of Other Treatment Episodes in Lifetime</b>										
0	531	33.4	527	14.7	527	-18.9 *	3.2	526	-57	313,672
1-2	708	43.4	706	25.0	706	-18.5 *	2.5	704	-43	365,791
3 or more	525	55.1	421	32.5	423	-22.4 *	2.2	421	-41	258,642
<b>Number of Treatment Episodes Before SROS Episode</b>										
0	984	40.0	978	20.9	977	-19.2 *	2.8	976	-48	552,501
1-2	553	44.3	551	24.7	552	-19.6 *	2.3	550	-44	275,087
3 or more	244	57.2	241	34.1	243	-22.5 *	2.5	241	-39	119,936
<b>Number of Treatment Episodes After SROS Episode</b>										
0	839	35.0	833	14.8	834	-20.2 *	2.9	831	-58	482,366
1 or more	943	51.5	938	32.5	939	-19.0 *	2.0	937	-37	467,220

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990 who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the "before" or "after" question were not used to calculate the difference or p-value of the paired t-test.

<sup>b</sup> Respondents could be classified in more than one or none of the categories.

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Table B-20 Percentage who used crack during the five years before and after treatment  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990)

Characteristics	n	Percentage using crack 5 or more times							Percentage Difference*	N
		Before	(n)	After	(n)	Difference*	Standard Error	(n)		
<b>TOTAL SAMPLE</b>	<b>3,047</b>									
Total Interviewed	1,799	<b>29.0</b>	1,791	24.3	1,786	<b>-4.8 *</b>	1.6	1784	-17	957,890
<b>Sex</b>										
Male	1,251	27.5	<b>1,248</b>	24.1	1,243	-3.5 *	1.7	1,243	-13	685,167
Female	548	32.9	543	24.8	543	-8.0 *	2.8	541	-24	272,723
<b>Race/Ethnicity</b>										
White (non-Hispanic)	1,101	20.4	<b>1,099</b>	18.5	1,093	-1.9	1.5	1,093	n.s.	575,142
Black (non-Hispanic)	499	52.9	493	40.6	494	-12.3 *	3.7	492	-23	270,609
Hispanic	137	13.7	137	13.4	137	-0.3	3.1	137	n.s.	79,530
<b>Age at Time of Discharge</b>										
Less than 18	156	5.1	156	15.4	156	<b>10.3 *</b>	3.6	156	202	77,605
18-29	674	35.2	671	28.2	<b>668</b>	-7.0 *	2.1	<b>668</b>	-20	378,275
30-39	660	34.2	657	27.5	655	-6.9 *	2.8	653	-20	342,387
40 +	309	15.0	307	12.5	307	-2.4	2.0	307	n.s.	159,623
<b>Education</b>										
1 to 9 years	306	21.6	306	22.7	304	1.0	2.7	304	n.s.	172,603
10 to 11 years	487	33.6	484	28.2	484	-5.7 *	2.9	483	-17	266,668
12 years or GED	517	26.0	515	22.3	514	-3.6	2.4	514	n.s.	269,137
College/grad school	486	32.9	483	23.7	481	-9.3 *	2.8	<b>480</b>	-28	<b>246,840</b>

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**Table B-20 Percentage who used crack during the five years before and after treatment**

**[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

<b>Residential</b>	<b>326</b>	<b>48.5</b>	<b>324</b>	<b>33.8</b>	<b>322</b>	<b>-15.3 *</b>	<b>4.4</b>	<b>321</b>	<b>-32</b>	<b>170,542</b>
<b>Outpatient methadone</b>	<b>217</b>	<b>24.2</b>	<b>215</b>	<b>23.7</b>	<b>215</b>	<b>-0.5</b>	<b>5.9</b>	<b>215</b>	<b>n.s.</b>	<b>47,248</b>
<b>Outpatient nonmethadone</b>	<b>556</b>	<b>14.0</b>	<b>554</b>	<b>13.7</b>	<b>553</b>	<b>-0.3</b>	<b>2.2</b>	<b>553</b>	<b>n.s.</b>	<b>384,577</b>
<b>Main Drug at Time of Intake<sup>b</sup></b>										
<b>Alcohol</b>	<b>1,117</b>	<b>22.7</b>	<b>1,112</b>	<b>21.1</b>	<b>1,110</b>	<b>-1.8</b>	<b>1.7</b>	<b>1,108</b>	<b>n.s.</b>	<b>614,420</b>
<b>Marijuana</b>	<b>443</b>	<b>23.6</b>	<b>443</b>	<b>21.3</b>	<b>440</b>	<b>-2.4</b>	<b>3.0</b>	<b>440</b>	<b>n.s.</b>	<b>247,306</b>
<b>Cocaine</b>	<b>443</b>	<b>43.2</b>	<b>431</b>	<b>35.2</b>	<b>430</b>	<b>-7.9 *</b>	<b>3.4</b>	<b>429</b>	<b>-18</b>	<b>220,786</b>
<b>Crack</b>	<b>382</b>	<b>90.6</b>	<b>380</b>	<b>64.1</b>	<b>381</b>	<b>-26.4 *</b>	<b>3.3</b>	<b>379</b>	<b>-29</b>	<b>210,659</b>
<b>Heroin</b>	<b>315</b>	<b>33.7</b>	<b>313</b>	<b>26.6</b>	<b>313</b>	<b>-7.1</b>	<b>4.1</b>	<b>313</b>	<b>n.s.</b>	<b>109,114</b>
<b>Self-Reported Reasons for Entering Treatment<sup>b</sup></b>										
<b>Pressure from criminal justice system</b>	<b>522</b>	<b>22.3</b>	<b>520</b>	<b>21.1</b>	<b>518</b>	<b>-1.4</b>	<b>2.7</b>	<b>518</b>	<b>n.s.</b>	<b>307,446</b>
<b>Health problems</b>	<b>437</b>	<b>28.4</b>	<b>436</b>	<b>21.2</b>	<b>435</b>	<b>-7.0 *</b>	<b>2.8</b>	<b>435</b>	<b>-25</b>	<b>223,230</b>
<b>Relationship problems</b>	<b>837</b>	<b>35.2</b>	<b>834</b>	<b>29.4</b>	<b>833</b>	<b>-5.9 *</b>	<b>2.1</b>	<b>832</b>	<b>-17</b>	<b>439,592</b>
<b>Pressure from employer</b>	<b>132</b>	<b>28.4</b>	<b>132</b>	<b>25.5</b>	<b>132</b>	<b>-2.8</b>	<b>3.4</b>	<b>132</b>	<b>n.s.</b>	<b>65,959</b>
<b>Financial problems</b>	<b>501</b>	<b>39.7</b>	<b>499</b>	<b>33.5</b>	<b>500</b>	<b>-6.3 *</b>	<b>1.9</b>	<b>499</b>	<b>-16</b>	<b>254,241</b>
<b>Length of Stay</b>										
<b>Less than 1 week</b>	<b>299</b>	<b>36.5</b>	<b>297</b>	<b>32.2</b>	<b>297</b>	<b>-4.1</b>	<b>2.7</b>	<b>297</b>	<b>n.s.</b>	<b>178,252</b>
<b>1 week - less than 1 month</b>	<b>473</b>	<b>39.1</b>	<b>470</b>	<b>27.8</b>	<b>469</b>	<b>-11.7 *</b>	<b>2.9</b>	<b>467</b>	<b>-30</b>	<b>234,876</b>
<b>1 month - less than 6 months</b>	<b>661</b>	<b>25.0</b>	<b>660</b>	<b>23.4</b>	<b>658</b>	<b>-1.4</b>	<b>2.5</b>	<b>658</b>	<b>n.s.</b>	<b>356,159</b>
<b>6 months or more</b>	<b>345</b>	<b>16.9</b>	<b>343</b>	<b>12.8</b>	<b>342</b>	<b>-4.2</b>	<b>2.8</b>	<b>342</b>	<b>n.s.</b>	<b>171,782</b>

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**Table B-20 Percentage who used crack during the five years before and after treatment**

**[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Treatment not completed	507	34.2	507	28.6	506	-5.4 *	2.3	506	-16	257,358
<b>Client Satisfaction with Treatment Episode</b>										
Very helpful	759	31.5	756	25.5	755	-5.9 *	2.8	755	-19	411,065
Somewhat/not helpful	977	27.8	973	23.6	969	-4.2 *	1.8	967	-15	511,765
<b>Number of Other Treatment Episodes in Lifetime</b>										
0	531	20.0	529	12.6	528	-7.4 *	2.4	528	-37	314,281
1-2	708	29.7	706	26.4	704	-3.4	2.3	704	n.s.	365,791
3 or more	525	40.2	522	36.5	521	-3.8	2.6	519	n.s.	257,708
<b>Number of Treatment Episodes Before SROS Episode</b>										
0	984	26.5	979	22.7	978	-3.8	2.0	978	n.s.	553,014
1-2	553	31.2	551	25.5	547	-5.8 *	2.3	546	-19	273,097
3 or more	244	37.6	243	30.0	243	-7.7 *	3.6	242	-20	120,576
<b>Number of Treatment Episodes After SROS Episode</b>										
0	839	22.6	836	14.6	834	-8.0 *	2.2	833	-35	483,356
1 or more	943	36.2	938	34.7	935	-1.5	2.0	934	n.s.	465,302

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Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and

**Table B-21. Percentage who used heroin during the five years before and after treatment**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage using heroin 5 or more times						Percentage <sup>a</sup> Difference	N	
		Before	(n)	After	(n)	Difference <sup>a</sup>	Standard Error			(n)
<b>TOTAL SAMPLE</b>	<b>3,047</b>									
<b>Total Interviewed</b>	<b>1,799</b>	<b>13.8</b>	<b>1,791</b>	<b>12.0</b>	<b>1,788</b>	<b>-1.9 *</b>	<b>0.7</b>	<b>1787</b>	<b>-14</b>	<b>959,101</b>
<b>Sex</b>										
<b>Male</b>	<b>1,251</b>	<b>12.9</b>	<b>1,244</b>	<b>11.7</b>	<b>1,242</b>	<b>-1.3</b>	<b>0.9</b>	<b>1,241</b>	<b>n.s.</b>	<b>684,063</b>
<b>Female</b>	<b>548</b>	<b>15.9</b>	<b>547</b>	<b>12.6</b>	<b>546</b>	<b>-3.3 *</b>	<b>1.3</b>	<b>546</b>	<b>-21</b>	<b>275,039</b>
<b>Race/Ethnicity</b>										
<b>White (non-Hispanic)</b>	<b>1,101</b>	<b>12.2</b>	<b>1,097</b>	<b>10.4</b>	<b>1,096</b>	<b>-1.8</b>	<b>0.9</b>	<b>1,096</b>	<b>n.s.</b>	<b>577,497</b>
<b>Black (non-Hispanic)</b>	<b>499</b>	<b>18.4</b>	<b>4 %</b>	<b>15.1</b>	<b>496</b>	<b>-3.4 *</b>	<b>1.1</b>	<b>495</b>	<b>-18</b>	<b>271,310</b>
<b>Hispanic</b>	<b>137</b>	<b>10.7</b>	<b>137</b>	<b>14.0</b>	<b>137</b>	<b>3.3</b>	<b>2.2</b>	<b>137</b>	<b>n.s.</b>	<b>79,065</b>
<b>Age at Time of Discharge</b>										
<b>Less than 18</b>	<b>156</b>	<b>1.6</b>	<b>156</b>	<b>6.5</b>	<b>156</b>	<b>4.9</b>	<b>2.7</b>	<b>156</b>	<b>n.s.</b>	<b>77,605</b>
<b>18 - 29</b>	<b>674</b>	<b>11.2</b>	<b>671</b>	<b>10.2</b>	<b>671</b>	<b>-1.0</b>	<b>1.0</b>	<b>671</b>	<b>n.s.</b>	<b>379,909</b>
<b>30 - 39</b>	<b>660</b>	<b>20.6</b>	<b>658</b>	<b>16.6</b>	<b>656</b>	<b>-4.0 *</b>	<b>1.5</b>	<b>656</b>	<b>-19</b>	<b>344,112</b>
<b>40 +</b>	<b>309</b>	<b>11.1</b>	<b>306</b>	<b>8.5</b>	<b>305</b>	<b>-2.7 *</b>	<b>0.9</b>	<b>304</b>	<b>-24</b>	<b>157,476</b>
<b>Education</b>										
<b>1 to 9 years</b>	<b>306</b>	<b>11.9</b>	<b>302</b>	<b>11.9</b>	<b>301</b>	<b>0.0</b>	<b>1.7</b>	<b>301</b>	<b>n.s.</b>	<b>170,167</b>
<b>10 to 11 years</b>	<b>487</b>	<b>15.7</b>	<b>487</b>	<b>12.7</b>	<b>487</b>	<b>-3.0</b>	<b>1.7</b>	<b>487</b>	<b>n.s.</b>	<b>268,639</b>
<b>12 years or GED</b>	<b>517</b>	<b>12.3</b>	<b>515</b>	<b>11.0</b>	<b>512</b>	<b>-1.4</b>	<b>1.4</b>	<b>512</b>	<b>n.s.</b>	<b>268,274</b>
<b>College/grad school</b>	<b>486</b>	<b>14.5</b>	<b>484</b>	<b>12.4</b>	<b>485</b>	<b>-2.1</b>	<b>1.4</b>	<b>484</b>	<b>n.s.</b>	<b>249,380</b>

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**Table B-21. Percentage who used heroin during the five years before and after treatment**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage using heroin 5 or more times							Percentage Difference <sup>a</sup>	N
		Before (n)	After (n)	Difference <sup>a</sup>	Standard Error (n)					
<b>Self-Reported Treatment Type</b>										
Inpatient	700	14.5	697	12.6	695	-1.9	1.2	695	n.s.	354,549
Residential	326	9.2	323	9.0	324	-0.2	1.4	324	n.s.	172,006
Outpatient methadone	217	82.1	216	60.1	216	-22.1 *	3.4	216	-27	47,820
Outpatient nonmethadone	556	6.7	555	6.7	553	-0.1	3.2	553	n.s.	384,726
<b>Main Drug at Time of Intake<sup>b</sup></b>										
Alcohol	1,117	9.1	1,112	7.1	1,109	-2.0 *	0.8	1,108	-22	613,657
Marijuana	443	7.9	443	7.7	442	-0.2	1.1	442	n.s.	248,025
Cocaine	443	23.0	433	22.1	431	-1.0	2.1	431	n.s.	222,191
Crack	382	13.1	378	9.3	379	-3.8 *	1.5	378	-29	209,962
Heroin	315	92.6	315	74.7	315	-17.9 *	3.5	315	-19	109,737
<b>Self-Reported Reasons for Entering Treatment</b>										
Pressure from criminal justice system	522	11.4	520	11.5	520	0.2	1.2	520	n.s.	308,878
Health problems	437	17.4	435	16.1	434	-1.4	1.8	434	n.s.	222,319
Relationship problems	837	14.8	834	13.1	832	-1.8	0.8	831	n.s.	438,462
Pressure from employer	132	12.4	132	11.8	131	-0.7	3.1	131	n.s.	65,183
Financial problems	501	20.9	500	19.4	499	-1.5	1.6	499	n.s.	254,288
<b>Length of Stay</b>										
Less than 1 week	299	16.5	295	14.7	294	-1.8	1.3	294	n.s.	177,044
1 week - less than 1 month	473	16.7	472	13.9	473	-2.7	1.4	472	n.s.	238,059
1 month - less than 6 months	661	9.7	660	9.5	658	-0.3	1.1	658	n.s.	355,539
6 months or more	345	15.6	343	12.3	342	-3.4 *	1.7	342	-22	171,639

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**Table B-21. Percentage who used heroin during the five years before and after treatment**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage using heroin 5 or more times							N	
		Before (n)	After (n)	Difference <sup>a</sup>	Standard Error	Percentage Difference <sup>a</sup>				
<b>Completion of Treatment</b>										
Treatment completed	1,190	13.2	1,185	10.3	1,182	-3.0 *	0.9	1,181	-23	647,979
Treatment not completed	507	16.8	505	17.7	505	0.9	1.4	505	n.s.	256,447
<b>Client Satisfaction with Treatment Episode</b>										
Very helpful	759	12.2	754	9.6	753	-2.7 *	1.2	753	-22	408,221
Somewhat/not helpful	977	15.7	975	14.6	973	-1.1	1.2	972	n.s.	514,961
<b>Number of Other Treatment Episodes in Lifetime</b>										
0	531	4.8	529	2.8	528	-2.0 *	0.9	528	-42	313,547
1-2	708	11.9	705	12.1	703	0.2	0.2	702	n.s.	364,730
3 or more	525	27.7	524	23.2	524	-4.5 *	0.1	524	-16	260,714
<b>Number of Treatment Episodes Before SROS Episode</b>										
0	984	8.3	978	7.2	977	-1.1	0.9	976	n.s.	550,865
1-2	553	16.8	552	13.9	550	-3.0 *	1.5	550	-18	275,538
3 or more	244	33.2	244	30.1	244	-3.1	2.1	244	n.s.	122,008
<b>Number of Treatment Episodes After SROS Episode</b>										
0	839	6.5	837	5.0	836	-1.5	0.9	836	n.s.	484,117
1 or more	943	21.3	937	19.1	935	-2.3 *	0.9	934	-11	465,751

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the “before” or “after” question were not used to calculate the difference or p-value of the paired t-test.

<sup>b</sup> Respondents could be classified in more than one or none of the categories.

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**Table B-22. Percentage in inpatient treatment who used any illicit drug during the five years before and after treatment  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Characteristics	n	Percentage using any illicit drug 5 or more times							Percentage Difference*	N
		Before	(n)	After	(n)	Difference"	Standard Error	(n)		
<b>TOTAL SAMPLE</b>	<b>1,799</b>	<b>75.4</b>	<b>1,799</b>	<b>59.3</b>	<b>1,799</b>	<b>-16.1 *</b>	<b>1.5</b>	<b>1,799</b>	<b>-21</b>	<b>976,012</b>
<b>Total Inpatient</b>	<b>700</b>	<b>77.7</b>	<b>700</b>	<b>58.4</b>	<b>700</b>	<b>-19.2 *</b>	<b>1.9</b>	<b>700</b>	<b>-25</b>	<b>357,954</b>
<b>Sex</b>										
<b>Male</b>	<b>497</b>	<b>74.9</b>	<b>497</b>	<b>60.8</b>	<b>497</b>	<b>-14.1 *</b>	<b>1.9</b>	<b>497</b>	<b>-19</b>	<b>257,250</b>
<b>Female</b>	<b>203</b>	<b>84.8</b>	<b>203</b>	<b>52.4</b>	<b>203</b>	<b>-32.5 *</b>	<b>3.3</b>	<b>203</b>	<b>-38</b>	<b>100,704</b>
<b>Race/Ethnicity</b>										
<b>White (non-Hispanic)</b>	<b>414</b>	<b>73.0</b>	<b>414</b>	<b>50.6</b>	<b>414</b>	<b>-22.4 *</b>	<b>3.1</b>	<b>414</b>	<b>-31</b>	<b>201,090</b>
<b>Black (non-Hispanic)</b>	<b>220</b>	<b>84.8</b>	<b>220</b>	<b>67.0</b>	<b>220</b>	<b>-17.8 *</b>	<b>3.7</b>	<b>220</b>	<b>-21</b>	<b>126,654</b>
<b>Hispanic</b>	<b>45</b>	<b>74.1</b>	<b>45</b>	<b>69.4</b>	<b>45</b>	<b>-4.7</b>	<b>5.4</b>	<b>45</b>	<b>n.s.</b>	<b>19,394</b>
<b>Age at Time of Discharge</b>										
<b>Less than 18</b>	<b>47</b>	<b>87.7</b>	<b>47</b>	<b>64.0</b>	<b>47</b>	<b>-23.7 *</b>	<b>9.8</b>	<b>47</b>	<b>-27</b>	<b>15,262</b>
<b>18 - 29</b>	<b>242</b>	<b>91.3</b>	<b>242</b>	<b>71.3</b>	<b>242</b>	<b>-19.9 *</b>	<b>2.9</b>	<b>242</b>	<b>-22</b>	<b>134,589</b>
<b>30-39</b>	<b>263</b>	<b>84.4</b>	<b>263</b>	<b>63.4</b>	<b>263</b>	<b>-21.0 *</b>	<b>3.7</b>	<b>263</b>	<b>-25</b>	<b>133,050</b>
<b>40 +</b>	<b>148</b>	<b>39.3</b>	<b>148</b>	<b>25.4</b>	<b>148</b>	<b>-14.0 *</b>	<b>3.6</b>	<b>148</b>	<b>-36</b>	<b>75,053</b>
<b>Education</b>										
<b>1 to 9 years</b>	<b>124</b>	<b>72.0</b>	<b>124</b>	<b>61.3</b>	<b>124</b>	<b>-10.7 *</b>	<b>4.5</b>	<b>124</b>	<b>-15</b>	<b>67,210</b>
<b>10 to 11 years</b>	<b>191</b>	<b>83.3</b>	<b>191</b>	<b>64.6</b>	<b>191</b>	<b>-18.7 *</b>	<b>3.0</b>	<b>191</b>	<b>-22</b>	<b>101,836</b>
<b>12 years or GED</b>	<b>195</b>	<b>75.6</b>	<b>195</b>	<b>54.4</b>	<b>195</b>	<b>-21.1 *</b>	<b>3.3</b>	<b>195</b>	<b>-28</b>	<b>97,331</b>
<b>College/grad school</b>	<b>189</b>	<b>77.7</b>	<b>189</b>	<b>53.5</b>	<b>189</b>	<b>-24.2 *</b>	<b>4.3</b>	<b>189</b>	<b>31</b>	<b>91,070</b>

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**Table B-22. Percentage in inpatient treatment who used any illicit drug during the five years before and after treatment [SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Characteristics	n	Percentage using any illicit drug 5 or more times							Percentage Difference <sup>''</sup>	N
		Before	(n)	After	(n)	Difference <sup>'</sup>	Standard Error	(n)		
<b>Main Drug at Time of Intake<sup>b</sup></b>										
Alcohol	473	67.1	473	48.1	473	-19.0 *	2.3	473	-28	231,258
Marijuana	133	97.9	133	79.5	133	-18.3 *	3.8	133	-19	63,612
Cocaine	175	99.0	175	75.4	175	-23.5 *	5.7	175	-24	93,971
Crack	187	99.0	187	78.7	187	-20.4 *	3.3	187	-21	104,326
Heroin	78	98.2	78	87.0	78	-11.2 *	5.0	78	-11	43,867
<b>Self-Reported Reasons for Entering Treatment<sup>b</sup></b>										
Pressure from criminal justice system	136	81.6	136	74.0	136	-7.7 *	3.3	136	-9	69,867
Health problems	206	75.8	206	22.5	206	-20.6 *	3.7	206	-27	103,336
Relationship problems	350	82.1	350	63.6	350	-18.5 *	2.7	350	-23	180,318
Pressure from employer	58	85.0	58	58.6	58	-26.4 *	7.0	58	-31	25,730
Financial problems	218	88.0	218	72.8	218	-15.2 *	2.8	218	-17	115,496
<b>Length of Stay</b>										
Less than 1 week	223	77.6	223	65.4	223	-12.2 *	2.2	223	-16	131,648
1 week - less than 1 month	288	80.3	288	55.9	288	-24.4 *	3.1	288	-30	140,726
1 month - less than 6 months	150	76.4	150	52.9	150	-23.5 *	4.7	150	-31	69,404
6 months or more	34	58.4	34	45.9	34	-12.5	6.7	34	n.s.	13,779
<b>Completion of Treatment</b>										
Treatment completed	528	75.8	528	56.2	528	-19.6 *	2.6	528	-26	272,886
Treatment not completed	152	87.7	152	68.9	152	-18.8 *	4.2	152	-21	76,745

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**Table B-22. Percentage in inpatient treatment who used any illicit drug during the five years before and after treatment [SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Characteristics	n	Percentage using any illicit drug 5 or more times					Standard Error	Percentage Difference"	N	
		Before	(n)	After	(n)	Difference"				
<b>Client Satisfaction with Treatment Episode</b>										
Very helpful	339	75.3	339	52.8	339	-22.5 *	3.0	339	-30	178,667
Somewhat/not helpful	351	80.3	351	64.6	351	-15.7 *	2.5	351	-20	174,094
<b>Number of Other Treatment Episodes in Lifetime</b>										
0	188	72.3	188	44.3	188	-28.1 *	3.8	188	-39	88,985
1-2	272	78.8	272	59.2	272	-19.6 *	2.8	272	-25	139,982
3 or more	222	83.7	222	70.9	222	-12.8 *	3.1	222	-15	118,086
<b>Number of Treatment Episodes Before SROS Episode</b>										
0	373	78.7	373	57.9	373	-20.7 *	3.0	373	-26	198,069
1-2	202	77.3	202	59.1	202	-18.2 *	2.8	202	-24	101,145
3 or more	116	81.1	116	63.0	116	-18.1 *	6.0	116	-22	61,101
<b>Number of Treatment Episodes After SROS Episode</b>										
0	302	66.8	302	41.0	302	-25.8 *	2.9	302	-39	149,163
1 or more	391	86.2	391	91.4	391	-14.8 *	1.8	391	-17	205,246

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the "before" or "after" question were not used to calculate the difference or p-value of the paired t-test.

<sup>b</sup> Respondents could be classified in more than one or none of the categories.

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**Table B-23. Percentage in residential treatment who used any illicit drug during the five years before and after treatment**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage using any illicit drug 5 or more times					Standard Error	Percentage Difference <sup>a</sup>	N	
		Before	(n)	After	(n)	Difference <sup>a</sup>				
<b>TOTAL SAMPLE</b>	<b>1,799</b>	<b>75.4</b>	<b>1,799</b>	<b>59.3</b>	<b>1,799</b>	<b>-16.1 *</b>	<b>1.5</b>	<b>1,799</b>	<b>-21</b>	<b>976,012</b>
<b>Total Residential</b>	<b>326</b>	<b>88.8</b>	<b>326</b>	<b>68.6</b>	<b>326</b>	<b>-20.2 *</b>	<b>2.5</b>	<b>326</b>	<b>-23</b>	<b>173,811</b>
<b>Sex</b>										
<b>Male</b>	<b>252</b>	<b>87.5</b>	<b>252</b>	<b>69.0</b>	<b>252</b>	<b>-18.5 *</b>	<b>2.8</b>	<b>252</b>	<b>-21</b>	<b>136,070</b>
<b>Female</b>	<b>74</b>	<b>93.2</b>	<b>74</b>	<b>67.1</b>	<b>74</b>	<b>-26.1 *</b>	<b>5.3</b>	<b>74</b>	<b>-28</b>	<b>37,742</b>
<b>Race/Ethnicity</b>										
<b>White (non-Hispanic)</b>	<b>197</b>	<b>85.7</b>	<b>197</b>	<b>70.9</b>	<b>197</b>	<b>-14.8 *</b>	<b>3.4</b>	<b>197</b>	<b>-17</b>	<b>103,414</b>
<b>Black (non-Hispanic)</b>	<b>102</b>	<b>94.7</b>	<b>102</b>	<b>64.3</b>	<b>102</b>	<b>-30.4 *</b>	<b>5.2</b>	<b>102</b>	<b>-32</b>	<b>57,968</b>
<b>Hispanic</b>	<b>13</b>	<b>90.6</b>	<b>13</b>	<b>62.1</b>	<b>13</b>	<b>-28.5 *</b>	<b>1.3</b>	<b>13</b>	<b>n.a.</b>	<b>4,953</b>
<b>Age at Tie of Discharge</b>										
<b>Less than 18</b>	<b>28</b>	<b>81.8</b>	<b>28</b>	<b>89.3</b>	<b>28</b>	<b>7.5</b>	<b>7.6</b>	<b>28</b>	<b>n.s.</b>	<b>8,723</b>
<b>18-29</b>	<b>147</b>	<b>95.8</b>	<b>147</b>	<b>75.5</b>	<b>147</b>	<b>-20.3 *</b>	<b>3.3</b>	<b>147</b>	<b>-21</b>	<b>85,987</b>
<b>30-39</b>	<b>116</b>	<b>88.7</b>	<b>116</b>	<b>60.0</b>	<b>116</b>	<b>-28.7 *</b>	<b>3.9</b>	<b>116</b>	<b>-32</b>	<b>63,217</b>
<b>40 +</b>	<b>35</b>	<b>54.9</b>	<b>35</b>	<b>54.2</b>	<b>35</b>	<b>-0.8</b>	<b>0.8</b>	<b>35</b>	<b>n.s.</b>	<b>15,889</b>
<b>Education</b>										
<b>1 to 9 years</b>	<b>46</b>	<b>75.8</b>	<b>46</b>	<b>64.6</b>	<b>46</b>	<b>-11.3</b>	<b>6.9</b>	<b>46</b>	<b>n.s.</b>	<b>24,589</b>
<b>10 to 11 years</b>	<b>102</b>	<b>92.8</b>	<b>102</b>	<b>69.9</b>	<b>102</b>	<b>-22.9 *</b>	<b>5.7</b>	<b>102</b>	<b>-25</b>	<b>53,421</b>
<b>12 years or GED</b>	<b>95</b>	<b>88.1</b>	<b>95</b>	<b>72.5</b>	<b>95</b>	<b>-15.6 *</b>	<b>4.5</b>	<b>95</b>	<b>-18</b>	<b>48,608</b>
<b>College/grad school</b>	<b>83</b>	<b>91.6</b>	<b>83</b>	<b>65.1</b>	<b>83</b>	<b>-26.5 *</b>	<b>4.6</b>	<b>83</b>	<b>-29</b>	<b>47,193</b>

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**Table B-23. Percentage in residential treatment who used any illicit drug during the five years before and after treatment**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage using any illicit drug 5 or more times					Standard Error	Percentage Difference <sup>a</sup>	N	
		Before (n)	After (n)	Difference <sup>a</sup>	(n)					
<b>Main Drug at Time of Intake<sup>b</sup></b>										
Alcohol	200	85.6	200	67.3	200	-18.3 *	3.3	200	-21	107,02
Marijuana	105	95.1	105	81.0	105	-14.1 *	3.8	105	-15	54,202
Cocaine	79	99.2	79	77.5	79	-21.8 *	5.7	79	-22	44,108
Crack	120	99.8	120	68.7	120	-31.1 *	3.4	120	-31	67,642
Heroin	27	100.0	27	83.0	27	-17.0	10.2	27	n.s.	11,087
<b>Self-Reported Reasons for Entering Treatment</b>										
Pressure from criminal justice system	108	92.3	108	76.3	108	-15.9 *	3.7	108	-17	51,554
Health problems	75	86.5	75	67.7	75	-18.8 *	6.8	75	-22	37,323
Relationship problems	155	93.2	155	78.9	155	-14.3 *	3.8	155	-15	87,291
Pressure from employer	25	95.8	25	77.6	25	-18.2 *	8.3	25	-19	14,536
Financial problems	80	97.7	80	86.7	80	-10.9 *	2.8	80	-11	40,502
<b>Length of Stay</b>										
Less than 1 week	46	80.5	46	62.3	46	-18.2 *	5.1	46	-23	30,420
1 week - less than 1 month	92	86.4	92	67.3	92	-19.2 *	3.9	92	-22	58,696
1 month - less than 6 months	137	95.6	137	74.9	137	-20.8 *	3.4	137	-22	62,830
6 months or more	48	85.1	48	58.1	48	-27.0 *	10.5	48	-32	19,505
<b>Completion of Treatment</b>										
Treatment completed	201	88.3	201	65.2	201	-23.1 *	3.3	201	-26	105,660
Treatment not completed	112	92.9	112	76.2	112	-16.7 *	5.5	112	-18	59,295

See footnotes at end of table.

**Table B-23. Percentage in residential treatment who used any illicit drug during the five years before and after treatment**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage using any illicit drug 5 or more times							Percentage Difference <sup>a</sup>	N
		Before	(n)	After	(n)	Difference <sup>a</sup>	Standard Error	(n)		
<b>Client Satisfaction with Treatment Episode</b>										
Very helpful		90.6	152	64.5	152	-26.0 *	4.5	152	-29	79,256
Somewhat/not helpful		89.5	165	74.4	165	-15.1 *	3.2	165	-17	88,857
<b>Number of Other Treatment Episodes in Lifetime</b>										
0	83	83.8	83	55.1	83	-28.8 *	7.6	83	-34	47,629
1-2	129	91.4	129	71.0	129	-20.4 *	4.1	129	-21	65,995
3 or more	105	94.2	105	79.7	105	-14.5 *	4.3	105	-15	54,581
<b>Number of Treatment Episodes Before SROS Episode</b>										
0		86.7	165	66.5	165	-20.2 *	3.9	165	-23	90,964
1-2		89.7	108	68.4	108	-21.3 *	4.6	108	-24	54,733
3 or more		96.4	50	77.6	50	-18.8 *	6.6	50	-20	26,628
<b>Number of Treatment Episodes After SROS Episode</b>										
0		87.4	143	55.5	143	-31.9 *	5.2	143	-36	79,143
1 or more		90.9	178	80.8	178	-10.1 *	2.6	178	-11	91,758

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and

August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the “before” or “after” question were not used to calculate the difference or p-value of the paired t-test.

<sup>b</sup> Respondents could be classified in more than one or none of the categories.

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**Table B-24. Percentage in outpatient methadone treatment who used any illicit drug during the five years before and after treatment**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage using any illicit drug 5 or more times							Percentage <sup>a</sup> Difference	N
		Before	(n)	After	(n)	Difference <sup>a</sup>	Standard Error	(n)		
<b>TOTAL SAMPLE</b>	<b>1,799</b>	<b>75.4</b>	<b>1,799</b>	<b>59.3</b>	<b>1,799</b>	<b>-16.1 *</b>	<b>1.5</b>	<b>1,799</b>	<b>-21</b>	<b>976,012</b>
<b>Total Outpatient Methadone</b>	<b>217</b>	<b>95.2</b>	<b>217</b>	<b>86.1</b>	<b>217</b>	<b>-9.1 *</b>	<b>1.8</b>	<b>217</b>	<b>-10</b>	<b>47,871</b>
<b>Sex</b>										
Male	121	94.0	121	86.3	121	-7.6 *	2.4	121	-8	26,400
Female	96	96.7	96	85.9	96	-10.8 *	2.7	96	-11	21,471
<b>Race/Ethnicity</b>										
White (non-Hispanic)	108	93.4	108	78.9	108	-14.6 *	2.5	108	-16	22,402
Black (non-Hispanic)	79	96.5	79	94.8	79	-1.7	0.9	79	n.s.	18,827
Hispanic	24	96.9	24	90.9	24	-6.0	4.4	24	n.s.	5,490
<b>Age at Time of Discharge</b>										
Less than 18	1	100.0	1	100.0	1	0.0	0.0	1	n.a.	990
18 - 29	71	95.8	71	80.0	71	-15.8 *	4.7	71	-16	12,634
30 - 39	101	95.5	101	89.9	101	-5.6 *	2.2	101	-6	23,951
40 +	44	93.2	44	83.5	44	-9.8 *	4.3	44	-11	10,296
<b>Education</b>										
1 to 9 years	33	97.1	33	77.6	33	-19.5 *	9.1	33	-20	5,911
10 to 11 years	58	98.6	58	88.2	58	-10.4 *	3.4	58	-11	14,015
12 years or GED	62	93.3	62	87.0	62	-6.3	3.8	62	n.s.	13,186
College/grad school	64	92.9	64	86.8	64	-6.1	3.3	64	n.s.	14,758

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**Table B-24. Percentage in outpatient methadone treatment who used any illicit drug during the five years before and after treatment**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage using any illicit drug 5 or more times							Percentage Difference <sup>a</sup>	N
		Before	(n)	After	(n)	Difference <sup>a</sup>	Standard Error	(n)		
<b>Main Drug at Time of Intake<sup>b</sup></b>										
Alcohol	55	93.8	55	88.1	55	-5.7 *	2.4	55	-6	14,588
Marijuana	22	96.5	22	88.3	22	-8.3	5.9	22	n.s.	4,928
Cocaine	72	98.2	72	91.9	72	-6.2 *	3.0	72	-6	17,245
Crack	15	100.0	15	89.6	15	-10.4	8.2	15	n.s.	4,054
Heroin	178	97.4	178	88.9	178	-8.4 *	2.0	178	-9	37,915
<b>Self-Reported Reasons for Entering Treatment</b>										
Pressure from criminal justice system	28	91.0	28	88.8	28	-2.3	3.7	28	n.s.	7,932
Health problems	50	97.2	50	89.7	50	-7.5	3.9	50	n.s.	12,159
Relationship problems	106	97.1	106	92.2	106	-4.9 *	2.0	106	-5	22,498
Pressure from employer	13	100.0	13	100.0	13	0.0	0.0	13	n.s.	2,343
Financial problems	86	97.1	86	88.5	86	-8.7 *	3.1	86	-9	17,002
<b>Length of Stay</b>										
Less than 1 week	11	88.8	11	88.8	11	0.0	0.0	11	n.s.	3,145
1 week - less than 1 month	53	92.4	53	93.7	53	1.3	2.2	53	n.s.	11,344
1 month - less than 6 months	67	98.8	67	90.0	67	-8.8 *	3.2	67	-9	15,712
6 months or more	85	94.5	85	75.8	85	-18.7 *	4.2	85	-20	16,552
<b>Completion of Treatment</b>										
Treatment completed	95	96.8	95	85.9	95	-10.9 *	2.7	95	-11	22,157
Treatment not completed	99	96.9	99	91.0	99	-5.9 *	2.3	99	-6	21,649

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**Table B-24. Percentage in outpatient methadone treatment who used any illicit drug during the five years before and after treatment**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage using any illicit drug 5 or more times							N	
		Before	(n)	After	(n)	Difference <sup>a</sup>	Standard Error	(n)		Percentage <sup>a</sup> Difference
<b>Client Satisfaction with Treatment Episode</b>										
Very helpful	63	98.6	63	85.5	63	-13.1 *	4.6	63	-13	13,532
Somewhat/not helpful	138	95.1	138	89.1	138	-6.0 *	1.7	138	-6	31,837
<b>Number of Other Treatment Episodes in Lifetime</b>										
0	31	91.3	31	79.2	31	-12.1 *	6.0	31	-13	8,565
1-2	89	95.2	89	89.6	89	-5.6	2.9	89	n.s.	17,797
3 or more	94	99.2	94	88.2	94	-11.0 *	2.6	94	-11	20,920
<b>Number of Treatment Episodes Before SROS Episode</b>										
0	91	93.2	91	85.4	91	-7.8 *	2.6	91	-8	21,126
1-2	83	97.9	83	89.3	83	-8.6 *	3.9	83	-9	15,486
3 or more	41	100.0	41	87.3	41	-12.7 *	4.8	41	-13	10,720
<b>Number of Treatment Episodes After SROS Episode</b>										
0	59	93.9	59	80.9	59	-12.9 *	4.5	59	-14	14,716
1 or more	155	97.4	155	89.8	155	-7.5 *	2.0	155	8	32,456

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the “before” or “after” question were not used to calculate the difference or p-value of the paired t-test.

<sup>b</sup> Respondents could be classified in more than one or none of the categories.

n.a. Significant percentage difference is not reported due to extremely small sample size of less than 20 cases.

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**Table B-25. Percentage in outpatient nonmethadone treatment who used any illicit drug during the five years before and after treatment**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage using any illicit drug 5 or more times						Standard Error (n)	Percentage Difference <sup>a</sup>	N
		Before	(n)	After	(n)	Difference <sup>a</sup>				
<b>TOTAL SAMPLE</b>	<b>1,799</b>	<b>75.4</b>	<b>1,799</b>	<b>59.3</b>	<b>1,799</b>	<b>-16.1 *</b>	<b>1.5</b>	<b>1,799</b>	<b>-21</b>	<b>976,012</b>
<b>Total Outpatient Nonmethadone</b>	<b>556</b>	<b>64.9</b>	<b>556</b>	<b>52.6</b>	<b>556</b>	<b>-12.3 *</b>	<b>2.6</b>	<b>556</b>	<b>-19</b>	<b>387,375</b>
<b>Sex</b>										
Male	381	63.0	381	53.7	381	-9.3 *	2.5	381	-15	270,690
Female	175	69.3	175	50.1	175	-19.2 *	4.6	175	-28	116,686
<b>Race/Ethnicity</b>										
White (non-Hispanic)	382	73.5	382	60.1	382	-13.4 *	3.7	382	-18	253,904
Black (non-Hispanic)	98	61.0	98	47.0	98	-14.0 *	2.8	98	-23	70,613
Hispanic	55	30.5	55	21.5	55	-9.1 *	3.3	55	-30	4,962
<b>Age at Time of Discharge</b>										
Less than 18	80	63.9	80	73.8	80	9.9 *	4.5	80	15	52,631
18 - 29	214	74.4	214	60.1	214	-14.4 *	3.4	214	-19	148,141
30 - 39	180	71.3	180	51.4	180	-19.9 *	4.4	180	-28	126,701
40 +	82	28.9	82	18.2	82	-10.7 *	3.4	82	-37	59,903
<b>Education</b>										
1 to 9 years	103	52.0	103	38.4	103	-13.6 *	4.3	103	-26	75,553
10 to 11 years	136	75.2	136	64.1	136	-11.1 *	5.6	136	-15	99,366
12 years or GED	165	67.3	165	56.4	165	-10.9 *	3.9	165	-16	112,580
College/grad school	150	61.8	150	47.3	150	-14.5 *	4.7	143	-23	97,742

See footnotes at end of table.

**Table B-25. Percentage in outpatient nonmethadone treatment who used any illicit drug during the five years before and after treatment**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage using any illicit drug 5 or more times					Standard Error	Percentage <sup>a</sup> Difference	N	
		Before	(n)	After	(n)	Difference <sup>a</sup>				
<b>Main Drug at Time of Intake<sup>b</sup></b>										
Alcohol	389	58.9	389	49.8	389	-9.1 *	3.0	389	-15	267,578
Marijuana	183	97.1	183	82.6	183	-14.5 *	3.5	183	-15	126,059
Cocaine	107	96.9	107	75.1	107	-21.8 *	4.6	107	-22	67,863
Crack	60	98.3	60	77.0	60	-21.3 *	6.6	60	-22	36,209
Heroin	32	100.0	32	86.6	32	-13.4 *	6.6	32	-13	16,867
<b>Self-Reported Reasons for Entering Treatment</b>										
Pressure from criminal justice system	250	63.5	250	52.2	250	-11.3 *	4.1	250	-18	181,365
Health problems	106	63.0	106	51.5	106	-11.6 *	4.9	106	-18	71,482
Relationship problems	226	90.2	226	54.7	226	-15.4 *	3.5	226	-17	152,529
Pressure from employer	36	61.1	36	46.2	36	-14.9	8.0	36	n.s.	23,350
Financial problems	117	74.8	117	54.1	117	-20.7 *	4.2	117	-28	82,805
<b>Length of Stay</b>										
Less than 1 week	19	72.5	19	30.6	19	-41.8 *	10.3	19	-58	14,881
1 week - less than 1 month	40	62.0	40	57.9	40	-4.1	5.0	40	n.s.	27,892
1 month - less than 6 months	307	63.7	307	57.3	307	-6.4	3.9	307	n.s.	209,932
6 months or more	178	65.2	178	44.5	178	-20.6 *	3.4	178	-32	123,726
<b>Completion of Treatment</b>										
Treatment completed	366	63.5	366	48.3	366	-15.3 *	3.5	366	-24	253,621
Treatment not completed	144	72.7	144	66.6	144	-6.1 *	3.5	144	-8	100,273

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**Table B-25. Percentage in outpatient nonmethadone treatment who used any illicit drug during the five years before and after treatment**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage using any illicit drug 5 or more times							Percentage Difference <sup>a</sup>	N
		Before	(n)	After	(n)	Difference <sup>a</sup>	Standard Error	(n)		
<b>Client Satisfaction with Treatment Episode</b>										
Very helpful	205	58.5	205	42.6	205	-15.9 *	4.1	205	-27	141,670
Somewhat/not helpful	323	70.7	323	60.2	323	-10.5 *	2.9	323	-15	223,127
<b>Number of Other Treatment Episodes in Lifetime</b>										
0	229	48.8	229	35.9	229	-12.9 *	3.8	229	-26	171,110
1-2	218	74.9	218	65.6	218	-9.3 *	2.9	218	-12	144,269
3 or more	104	86.8	104	68.8	104	-18.0 *	3.2	104	-21	67,589
<b>Number of Treatment Episodes Before SROS Episode</b>										
0	355	57.8	355	48.4	355	-9.4 *	3.1	355	-16	254,719
1-2	160	80.6	160	61.2	160	-19.4 *	3.9	160	-24	105,467
3 or more	37	77.2	37	62.9	37	-14.4	8.6	37	n.s.	23,559
<b>Number of Treatment Episodes After SROS Episode</b>										
0	335	56.8	335	42.5	335	-14.4 *	3.3	335	-25	243,837
1 or more	219	79.8	219	70.9	219	8.9	3.4	219	n.s.	141,460

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the “before” or “after” question were not used to calculate the difference or p-value of the paired t-test.

<sup>b</sup> Respondents could be classified in more than one or none of the categories.

**Table B-26. Percentage who reported any criminal activity during the five years before and after treatment**  
**[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Criminal Activity	Percentage reporting criminal activity							Percentage Difference <sup>a</sup>	N
	Before	(n)	After	(n)	Difference <sup>a</sup>	Standard Error	(n)		
Vehicle theft	9.0	1,790	4.0	1,789	-5.0 *	0.9	1,789	-56	962,296
Driving while intoxicated (DWI)	60.5	1,794	43.3	1,786	-17.1 *	2.8	1,786	-28	962,391
Driving under the influence (DUI)	54.1	1,793	40.4	1,785	-13.6 *	1.8	1,784	-25	961,093
Public disorder	28.1	1,792	19.6	1,785	-8.5 *	1.2	1,785	-30	961,052
Sell drugs	34.7	1,786	24.2	1,787	-10.5 *	1.4	1,786	-30	962,389
Prostitution/procurement	12.8	1,790	9.5	1,790	-3.2 *	0.9	1,790	-25	963,696
Fraud/forgery	13.7	1,792	10.3	1,792	-3.5 *	1.0	1,792	-26	963,348
Theft/larceny	27.3	1,791	17.2	1,788	-10.0 *	1.5	1,787	-37	960,815
Breaking and entering	13.6	1,792	8.4	1,793	-5.2 *	1.2	1,792	-38	964,140
Armed robbery	3.4	1,794	3.4	1,793	0.0	0.6	1,793	n.s.	963,674
Arson	1.5	1,794	0.6	1,793	-0.9	0.3	1,793	n.s.	964,585
Threaten/attack	12.4	1,792	9.4	1,791	-2.9 *	1.0	1,791	-23	962,441
Use force for sex	0.7	1,792	0.6	1,791	-0.1	0.3	1,791	n.s.	965,569
Homicide	0.4	1,792	0.1	1,792	-0.3	0.2	1,792	n.s.	963,618
Violate parole	16.6	1,788	20.9	1,784	4.3 *	1.4	1,784	26	960,137
Arrested	65.7	1,781	54.4	1,782	-11.3 *	2.6	1,750	-17	942,237

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**Table B-26. Percentage who reported any criminal activity during the five years before and after treatment  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Criminal Activity	Percentage reporting criminal activity							Percentage Difference <sup>a</sup>	N
	Before	(n)	After	(n)	Difference <sup>a</sup>	Standard Error	(n)		
Spent time in jail, prison, detention, or probation or parole+	42.8	1,792	56.8	1,533	7.3 *	1.8	1,528	17	813,503
Supported self mainly through criminal activity	27.2	1,782	17.6	1,782	9.5 *	1.1	1,776	35	955,980

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the “before” or “after” question were not used to calculate the difference or p-value of the paired t-test.

<sup>+</sup> There were a large number of cases missing for this variable during the five years after the SROS episode because of item non-response on the five questions that were combined to create this variable.

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Table B-27. Percentage in inpatient treatment who reported criminal activity during the five years before and after treatment  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Criminal Activity	Percentage reporting criminal activity						Percentage Difference'	N	
	Before	(n)	After	(n)	Difference'	Standard Error			In)
Vehicle theft	9.2	695	4.3	694	-4.9 *	1.2	694	-53	356,292
Driving while intoxicated (DWI)	58.8	6%	41.9	692	-16.7 *	3.0	692	-28	356,445
Driving under the influence (DUI)	56.8	6%	41.2	693	-15.5 *	2.1	693	-27	355,935
Public disorder	28.2	695	21.2	694	-6.8 *	2.0	694	-24	356,043
Sell drugs	34.7	693	23.3	694	-11.5 *	1.7	693	-33	355,052
Prostitution/procurement	14.8	695	12.1	695	-2.7	1.7	695	n.s.	355,704
Fraud/forgery	16.4	696	11.3	696	-5.1 *	1.8	6%	-31	356,445
Theft/larceny	29.3	696	19.7	694	-9.4 *	2.4	694	-32	355,193
Breaking and entering	14.4	6%	8.8	696	-5.6 *	1.7	6%	-39	356,445
Armed robbery	4.1	697	3.8	697	-0.3	1.0	697	n.s.	356,686
Arson	1.1	696	0.5	696	-0.6	0.5	6%	n.s.	355,945
Threaten/attack	13.4	6%	10.2	696	-3.2 *	1.2	6%	-24	355,945
Use force for sex	0.8	695	1.1	695	0.3	0.5	695	n.s.	355,533
Homicide	0.3	694	0.3	694	0.1	0.1	694	n.s.	354,718
Violated parole	18.4	694	20.1	692	1.6	1.8	692	n.s.	355,700
Arrested	63.1	695	56.3	685	-6.7 *	2.6	682	-11	349,486

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**Table B-27. Percentage in inpatient treatment who reported criminal activity during the five years before and after treatment [SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Criminal Activity	Percentage reporting criminal activity							Percentage Difference <sup>a</sup>	N
	Before	(n)	After	(ll)	Difference <sup>c</sup>	Standard Error	(n)		
Spent thne in jag. prison, detention, probation, or parole+	43.4	6 %	58.6	582	9.1 *	2.4	580	21	392,967
supported self mainly through criminal activity	31.4	692	21.0	693	-10.1 *	1.8	6 %	-32	353,208

Note: Percentages are weighbtd to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and A# 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at p < .05. n.s. Diierouce not significant at p < .05.

<sup>a</sup> Cases missing a response for either the “before” or “after” question were not used to calculate the difference or p-value of the paired t-test.

<sup>+</sup> There were a large number of cases missing for this variable during the five years after the SROS episode because of item non-response on the five questions that were combined to create this variable.

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Table B-28. Percentage in residential treatment who reported criminal activity during the five years before and after treatment

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Criminal Activity	Percentage reporting criminal activity							Percentage Difference"	N
	Before	(n)	After	(n)	Difference"	Standard Error	(n)		
Vehicle theft	11.2	326	5.7	326	-5.5 *	2.2	326	-49	173,811
Driving while intoxicated (DWI)	67.6	326	50.3	323	-17.7 *	2.8	323	-26	172,475
Driving under the influence (DUI)	60.3	326	49.4	325	-11.1 *	3.1	325	-18	173,214
Public disorder	34.2	326	24.2	324	-9.9 *	2.7	324	-29	172,749
Sell drugs	45.2	325	26.6	325	-18.6 *	2.7	325	-41	172,985
Prostitution/procurement	18.7	324	13.3	324	-5.4	3.1	324	n.s.	173,087
Fraud/forgery	20.1	326	13.5	326	-6.6 *	2.6	326	-33	173,811
Theft/larceny	34.7	326	22.4	326	-12.3 *	3.1	326	3 5	173,811
Breaking and entering	18.7	324	11.3	325	-7.4 *	3.0	324	-40	172,608
Armed robbery	4.9	325	5.3	325	0.4	1.6	325	n.s.	172,985
Arson	1.0	326	0.6	326	-1.3	1.2	326	n.s.	173,811
Threaten/attack	16.6	325	11.1	325	-5.5 *	2.4	325	-33	172,985
Use force for sex	1.0	325	0.2	325	-0.8	0.8	325	n.s.	173,207
Homicide	0.6	326	0.0	323	-0.6	0.4	326	n.s.	173,811
Violated parole	21.1	325	33.5	325	12.4 *	2.5	325	59	172,693
Arrested	74.8	320	67.9	318	-7.2 *	3.5	315	-10	166,432

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**Table B-28. Percentage in residential treatment who reported criminal activity during the five years before and after treatment**

**[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Criminal Activity	Percentage reporting criminal activity							Percentage Difference"	N
	Before	(n)	After	(n)	Difference"	Standard Error	(n)		
Spent time in jail, prison, detention, probation, or parole+	53.8	323	68.4	292	8.1 *	3.9	289	1 5	150,438
Supported self mainly through criminal activity	31.6	323	16.3	325	-15.2 *	3.7	323	-48	171,995

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the "before" or "after" question were not used to calculate the difference or p-value of the paired t-test.

<sup>+</sup> There were a large number of cases missing for this variable during the five years after the SROS episode because of item non-response on the five questions that were combined to create this variable.

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**Table B-29. Percentage in methadone maintenance treatment who reported criminal activity during the five years before and after treatment**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Criminal Activity	Percentage reporting criminal activity							Percentage Difference <sup>a</sup>	N
	Before	(n)	After	(n)	Difference <sup>a</sup>	Standard Error	(n)		
Vehicle theft	7.5	216	4.8	216	-2.7	1.4	216	n.s.	47,713
Driving while intoxicated (DWI)	46.9	216	29.0	216	-17.8 *	3.6	216	-38	47,713
Driving under the influence (DUI)	50.9	215	34.4	214	-15.9 *	3.8	213	-31	47,092
Public disorder	22.8	216	18.4	215	-4.4 *	1.8	215	-19	47,553
Sell drugs	47.3	214	31.0	214	-16.3 *	5.2	214	-34	47,064
prostitution/procurement	22.4	215	18.3	215	-4.1	2.4	215	n.s.	47,530
Fraud/forgery	26.3	216	14.0	216	-12.4 *	5.2	216	-47	47,713
Theft/larceny	38.3	215	28.1	214	-9.9 *	3.8	213	-26	47,343
Breaking and entering	19.1	216	10.8	216	-8.2 *	3.9	216	-43	47,713
Armed robbery	3.9	216	2.3	216	-1.5	1.4	216	n.s.	47,713
Arson	1.3	216	0.0	216	-1.3	0.8	216	n.s.	47,713
Threaten/attack	8.7	216	5.9	216	-2.8	3.5	216	n.s.	47,713
Use force for sex	0.5	216	0.0	215	0.0	0.0	215	n.s.	47,453
Homicide	0.8	216	0.0	216	-0.8	0.5	216	n.s.	47,713
Violated parole	22.6	214	21.4	213	-0.8	4.2	213	n.s.	47,133
Arrested	67.9	214	60.8	213	-7.1	4.5	210	n.s.	46,631

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**Table B-29. Percentage in methadone maintenance treatment who reported criminal activity during the five years before and after treatment**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Criminal Activity	Percentage reporting criminal activity							Percentage Difference <sup>a</sup>	N
	Before	(n)	After	(n)	Difference <sup>a</sup>	Standard Error	(n)		
Spent time in jail, prison, detention, probation, or parole+	45.3	217	59.0	198	9.9	6.0	198	n.s.	44,143
Supported self mainly through criminal activity	60.7	213	40.3	212	-20.2 *	4.3	212	-33	46,449

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the “before” or “after” question were not used to calculate the difference or p-value of the paired t-test.

<sup>b</sup> Respondents could be classified in more than one or none of the categories.

<sup>+</sup> There were a large number of cases missing for this variable during the five years after the SROS episode because of item non-response on the five questions that were combined to create this variable.

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**Table B-30. Percentage in outpatient nonmethadone treatment who reported criminal activity during the five years before and after treatment**

**[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Criminal Activity	Percentage reporting criminal activity							Percentage Difference"	N
	Before	(n)	After	(n)	Difference"	Standard Error	(n)		
Vehicle theft	8.0	553	2.9	553	-5.1 *	1.6	553	-64	384,987
Driving while intoxicated (DWI)	60.5	556	43.3	555	-17.2 *	6.1	555	-28	387,191
Driving under the influence (DUD)	49.3	556	36.3	553	-12.8 *	3.6	553	-26	386,229
Public disorder	26.0	555	16.2	552	-9.9 *	2.3	552	-38	385,172
Sell drugs	28.4	554	23.1	554	-5.3 *	2.6	554	-19	387,287
Prostitution/procurement	7.1	556	4.4	556	-2.7 *	1.0	556	-38	387,375
Fraud/forgery	6.8	554	7.4	554	0.6	1.4	554	n.s.	385,379
Theft/larceny	20.8	554	11.5	554	-9.3 *	2.8	554	-45	385,379
Breaking and entering	9.9	556	6.5	556	-3.4	1.9	556	n.s.	387,375
Armed robbery	1.9	556	2.2	555	0.3	0.7	555	n.s.	386,290
Arson	1.6	556	0.7	555	-0.8	0.5	555	n.s.	387,116
Threaten/attack	10.0	555	8.3	554	-1.4	1.9	554	n.s.	385,797
Use force for sex	0.5	556	0.5	556	-0.1	0.3	556	n.s.	387,375
Homicide	0.5	556	0.0	556	-0.5	0.3	556	n.s.	387,375
Violated parole	12.2	555	15.9	554	3.7	2.0	554	n.s.	385,589
Arrested	63.8	552	46.0	546	-17.8 *	5.4	543	-28	379,688

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**Table B-30. Percentage in outpatient nonmethadone treatment who reported criminal activity during the five years before and after treatment**

**[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Criminal Activity	Percentage reporting criminal activity					Standard Error	Percentage Difference <sup>a</sup>	N	
	Before	(n)	After	(n)	Difference <sup>a</sup>				
Spent time in jail, prison, detention, probation, or parole <sup>†</sup>	37.1	556	49.3	461	4.8	3.4	461	n.s.	316,855
Supported self mainly through criminal activity	17.4	554	12.2	552	-5.0 *	1.8	551	-29	384,328

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the "before" or "after" question were not used to calculate the difference or p-value of the paired t-test.

<sup>b</sup> Respondents could be classified in more than one or none of the categories.

<sup>†</sup> There were a large number of cases missing for this variable during the five years after the SROS episode because of item non-response on the five questions that were combined to create this variable.

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**Table B-31. Percentage who drove under the influence during the five years before and after treatment  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Characteristics	n	Percentage driving under the influence					Standard Error	Percentage Difference"	N	
		Before	(n)	After	(n)	Difference"				
<b>TOTAL SAMPLE</b>	<b>3,047</b>									
Total Interviewed	1,799	54.1	1,793	40.4	1,785	-13.6 *	1.8	1784	-25	961,093
<b>Sex</b>										
Male	1,251	57.7	<b>1,246</b>	44.7	1,240	-13.0 *	2.1	1,240	-23	686,356
Female	548	45.1	547	29.6	545	-15.2 *	2.7	544	-34	274,737
<b>Race/Ethnicity</b>										
White (non-Hispanic)	1,101	59.0	<b>1,097</b>	45.8	1,091	-13.1 *	2.0	1,091	-22	576,380
Black (non-Hispanic)	499	46.6	497	32.1	4%	-14.4 *	3.0	495	3 1	272,952
Hispanic	137	47.8	137	25.4	137	-22.4 *	5.3	137	-47	79,530
<b>Age at Time of Discharge</b>										
Less than 18	156	20.0	156	47.9	156	27.8 *	6.8	156	139	77,605
18 - 29	674	59.3	593	47.4	588	-11.8 *	2.4	<b>588</b>	-20	333,767
30 - 39	660	61.8	610	39.4	610	-22.4 *	2.2	609	-36	319,604
40 +	309	42.5	308	22.7	305	-19.3 *	2.9	305	<b>-45</b>	159,649
<b>Education</b>										
1 to 9 years	306	53.4	305	38.8	304	-14.6 *	4.6	303	-27	171,763
10 to 11 years	487	51.8	486	39.6	483	-12.1 *	3.9	483	-23	267,491
12 years or GED	517	57.4	514	44.1	513	-13.3 *	3.7	513	-23	270,208
College/grad school	486	53.4	485	38.7	482	-14.4 *	2.1	482	-27	248,989

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**Table B-31. Percentage who drove under the influence during the five years before and after treatment  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Characteristics	n	Percentage driving under the influence							Percentage Difference"	N
		Before	(n)	After	(n)	Difference"	Standard Error	(n)		
<b>Self-Reported Treatment Type</b>										
Inpatient	700	56.8	6 %	41.2	693	-15.5 *	2.1	693	-27	354,558
Residential	326	60.3	326	49.4	325	-11.1 *	3.1	325	-18	173,214
Outpatient methadone	217	50.9	215	34.4	214	-15.9 *	3.8	213	-31	47,092
Outpatient nommethadone	556	49.3	556	36.3	553	-12.8 *	3.6	553	-26	386,229
<b>Main Drug at Time of Intake<sup>b</sup></b>										
Alcohol	1,117	55.3	115	39.5	1,109	-15.6 *	2.3	1,109	-28	616,636
Marijuana	443	60.6	442	55.8	441	-4.9	3.9	441	n.s.	247,293
Cocaine	443	58.0	431	42.1	429	-15.8 *	2.8	429	-27	210,366
Crack	382	65.3	379	49.8	379	-15.5 *	3.4	378	-24	221,700
Heroin	315	66.8	312	50.3	311	-16.2 *	3.9	310	-24	108,717
<b>Self-Reported Reasons for Entering Treatment<sup>b</sup></b>										
Pressure from crhninal justice system	522	56.0	522	44.3	519	-11.7 *	3.3	519	-21	309,587
Health problems	437	55.1	436	38.8	435	-16.3 *	3.5	435	-30	223,875
Relationship problems	837	58.8	834	43.8	830	-14.9 *	2.2	830	-25	440,050
Pressure from employer	132	68.4	132	48.0	132	-20.5 *	4.4	132	-30	65,959
Financial problems	501	64.1	499	48.4	498	-15.7 *	2.7	498	-24	254,469
<b>Length of Stay</b>										
Less than 1 week	299	53.8	297	41.0	2 %	-12.6 *	3.3	2 %	-23	178,873
1 week - less than 1 month	473	60.6	471	44.2	469	-16.3 *	2.7	469	-27	236,563
1 month - less than 6 months	661	51.4	660	41.2	657	-10.0 *	3.1	657	-19	356,491
6 months or more	345	50.2	344	31.3	343	-18.8 *	3.3	342	-37	172,942

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**Table B-31. Percentage who drove under the influence during the five years before and after treatment  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Characteristics	n	Percentage drivine under the influence							Percentage Difference"	N
		Before	(n)	After	(n)	Difference"	Standard Error	(n)		
<b>Completion of Treatment</b>										
Treatment completed	1,190	54.6	1,188	37.9	1,185	-16.6 *	2.0	1,185	-30	652,229
Treatment not completed	507	55.2	503	47.0	500	-8.0 *	2.6	499	-14	254,725
<b>Client Satisfaction with Treatment Episode</b>										
Very helpful	759	52.8	758	33.1	755	-19.6 *	2.0	755	-37	411,099
Somewhat/not helpful	977	55.8	972	45.9	969	-9.8 *	2.0	968	-18	514,611
<b>Number of Other Treatment Episodes in Lifetime</b>										
0	531	46.2	530	29.9	529	-16.3 *	3.4	529	-35	315,486
1-2	708	55.6	705	42.8	701	-12.6 *	2.4	700	-23	364,356
3 or more	525	62.3	523	51.5	521	-10.7 *	2.0	521	-17	259,934
<b>Number of Treatment Episodes Before SROS Episode</b>										
0	984	47.8	982	37.2	979	-10.5 *	2.3	979	-22	55,351
1-2	553	62.4	550	45.3	547	-17.0 *	3.0	546	-27	273,242
3 or more	244	65.9	243	46.6	242	-19.3 *	3.3	242	-29	121,607
<b>Number of Treatment Episodes After SROS Episode</b>										
0	839	52.7	836	30.8	833	-21.8 *	3.1	832	-41	483,523
1 or more	943	56.3	940	50.6	936	-5.6 *	1.9	936	-10	468,738

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the "before" or "after" question were not used to calculate the difference or p-value of the paired t-test.

<sup>b</sup> Respondents could be classified in more than one or none of the categories.

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Table B-32. Percentage who drove while intoxicated during the five years before and after treatment  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage driving while intoxicated				Difference"	Standard Error (n)	Percentage Difference"	N	
		Before (n)	After (n)							
<b>TOTAL SAMPLE</b>	<b>3,047</b>									
<b>Total Interviewed</b>	<b>1,799</b>	<b>60.5</b>	<b>1,794</b>	<b>43.3</b>	<b>1,786</b>	<b>-17.7 *</b>	<b>2.8</b>	<b>1786</b>	<b>-28</b>	<b>962,391</b>
<b>Sex</b>										
Male	1,251	66.6	1,246	47.7	1,239	-18.9 *	3.3	1,239	-28	686,049
Female	548	45.3	545	32.5	547	-12.8 *	3.2	547	-28	276,343
<b>Race/Ethnicity</b>										
White (non-Hispanic)	1,101	66.4	1,097	49.5	1,091	-16.9 *	2.4	1,091	-25	577,057
Black (non-Hispanic)	499	49.0	498	31.9	497	-17.1 *	3.0	497	-35	273,337
Hispanic	137	60.0	137	32.0	137	-28.0	17.0	137	n.s.	79,530
<b>Age at Time of Discharge</b>										
Less than 18	156	25.8	156	56.1	156	30.3 *	7.4	156	117	77,605
18 - 29	674	61.7	593	49.2	591	-12.6 *	3.0	597	-20	334,577
30 - 39	660	69.3	611	42.5	608	-26.8 *	2.8	608	-39	320,017
40 +	309	57.5	308	27.5	305	-30.0 *	3.7	305	-52	159,724
<b>Education</b>										
1 to 9 years	306	56.7	306	38.8	304	-18.3 *	8.1	304	-32	172,069
10 to 11 years	487	54.5	485	43.2	482	-11.1 *	3.6	482	-20	266,662
12 years or GED	517	65.6	515	47.2	512	-18.3 *	3.9	512	-28	270,719
College/grad school	486	64.5	485	42.6	485	-21.9 *	3.0	485	-34	250,299

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**Table B-32. Percentage who drove while intoxicated during the five years before and after treatment  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Characteristics	n	Percentage driving while intoxicated							Percentage Difference <sup>a</sup>	N
		Before	(n)	After	(n)	Difference <sup>c</sup>	Standard Error	(n)		
<b>Self-Reported Treatment Type</b>										
Inpatient	700	58.8	6 %	41.9	692	-16.7 *	3.0	692	-28	355,012
Residential	326	67.6	326	50.3	323	-17.7 *	2.8	323	-26	172,475
Outpatient methadone	217	46.9	216	29.0	316	-17.8 *	3.6	216	-38	47,713
outpatient nonmethadone	556	60.5	5 %	43.3	555	-17.2 *	6.1	555	-28	387,191
<b>Main Drug at Time of Intake<sup>b</sup></b>										
Alcohol	1,117	69.3	1,116	47.3	1,110	-22.0 •	3.5	1,110	-32	617,949
Marijuana	443	61.5	443	57.2	441	-4.4	3.9	441	n.s.	247,693
Cocaine	443	55.5	432	40.2	431	-15.2 *	2.4	431	-27	210,712
Crack	382	61.8	380	44.9	378	-16.8 •	2.1	378	-27	222,415
Heroin	315	56.5	313	42.5	313	-14.0 *	3.5	313	-25	109,338
<b>Self-Reported Reasons for Entering Treatment<sup>b</sup></b>										
Pressure from criminal justice system	522	66.0	522	47.8	519	-18.3 *	3.3	519	-28	309,794
Health problems	437	59.7	436	38.9	433	-20.7 *	4.0	433	-35	223,145
Relationship problems	837	62.1	835	45.8	834	-16.3 *	2.7	834	-26	442,095
Pressure from employer	132	72.5	132	46.0	132	-26.5 *	5.2	132	-37	65,959
Fiicial problems	501	65.9	500	50.3	498	-15.4 *	2.6	498	-23	254,793
<b>Length of stay</b>										
Less than 1 week	299	53.2	297	40.6	2 %	-12.5	4.0	2 %	n.s.	178,958
1 week - less than 1 month	473	62.5	471	45.1	469	-17.4	2.7	469	n.s.	236,854
1 month - less than 6 months	661	59.8	660	45.7	656	-14.0	4.5	656	n.s.	356,792
6 months or more	345	64.9	345	36.7	345	-28.2	4.8	345	n.s.	173,563

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See footnotes at end of table.

**Table B-32. Percentage who drove while intoxicated during the five years before and after treatment  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Characteristics	n	Percentage driving while intoxicated					Standard Error (n)	Percentage Difference <sup>a</sup>	N	
		Before (n)	After (n)	Difference <sup>b</sup>						
<b>Completion of Treatment</b>										
Treatment completed	1,190	63.3	1,188	42.7	1,183	-20.5 *	2.0	1,185	-32	652,099
Treatment not completed	507	55.1	504	45.5	502	-9.9 *	2.6	499	-18	255,967
<b>Client Satisfaction with Treatment Episode</b>										
Very helpful	759	60.4	758	36.5	756	-23.9 *	3.2	756	-40	412,323
Somewhat/not helpful	977	60.8	973	49.1	968	-11.7 *	2.7	968	- 1 9	514,500
<b>Number of Other Treatment Episodes in Lifetime</b>										
0	531	56.2	529	35.8	525	-20.4 *	6.1	525	-36	314,185
1-2	708	62.0	707	46.0	705	-16.0 *	3.1	705	-26	367,145
3 or more	525	64.5	523	50.2	522	-14.2 *	2.5	522	-22	259,962
<b>Number of Treatment Episodes Before SROS Episode</b>										
0	984	54.7	981	41.2	977	-13.5 *	4.2	977	-25	554,616
1-2	553	69.3	552	48.5	549	-20.9 *	3.1	549	-30	275,116
3 or more	244	68.6	243	45.4	243	-23.2 *	3.4	243	-34	121,767
<b>Number of Treatment Episodes After SROS Episode</b>										
0	839	61.6	837	36.0	832	-25.7 *	4.2	832	4 2	484,158
1 or more	943	59.9	940	51.2	938	-8.6 *	2.3	938		469,402

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Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the "before" or "after" question were not used to calculate the difference or p-value of the paired t-test.

<sup>b</sup> Respondents could be classified in more than one or none of the categories.

TABLE B-33. Percentage who sold drugs during the five years before and after treatment

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage selling drugs				Difference'	Standard Error	(n)	Percentage Difference'	N
		Before	(n)	After	(n)					
TOTAL SAMPLE	3,047									
Total Interviewed	1,799	34.7	1,786	24.2	1,787	-10.5 *	1.4	1786	-30	962,389
<b>Sex</b>										
Male	1,251	36.0	1,240	26.0	1,241	-10.0 *	1.5	1,240	-28	686,022
Female	548	31.5	546	19.8	546	-11.7 *	2.5	546	-37	276,367
<b>Race/Ethnicity</b>										
White (non-Hispanic)	1,101	34.3	1,092	23.5	1,092	-10.8 *	2.3	1,092	-31	578,108
Black (non-Hispanic)	499	39.0	495	26.7	496	-12.4 *	2.7	495	-32	272,141
Hispanic	137	20.2	137	17.8	137	-2.4	3.9	137	n.s.	79,530
<b>Age at Time of Discharge</b>										
Less than 18	156	33.5	156	42.4	156	8.9 *	3.4	156	27	77,605
18-29	674	41.8	593	32.9	593	4.8 •	2.2	593	-21	335,686
30-39	660	37.4	605	19.3	606	-18.2 •	2.5	605	-49	318,696
40+	309	15.0	306	6.9	306	-8.1 *	1.9	306	-54	159,935
<b>Education</b>										
1 to 9 years	306	31.3	305	26.4	305	-4.9	2.7	305	n.s.	173,226
10 to 11 years	487	38.6	483	27.9	483	-10.7 *	2.6	483	-28	267,249
12 years or GED	517	33.1	513	23.5	513	-9.7 *	2.9	513	-29	270,608
College/grad school	486	34.7	482	19.5	483	-15.3 *	3.0	482	-44	248,663

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**TABLE B-33. Percentage who sold drugs during the five years before and after treatment**

**[SROS sampled 3,047 clients discharged from drug treatment in 1989-19901**

Characteristics	n	Percentage selling drugs					Standard Error	Percentage Difference*	N	
		Before	(n)	After	(n)	Difference*				
<b>Self-Reported Treatment Type</b>										
Inpatient	700	34.7	693	23.3	694	-11.5 •	1.7	693	-33	355,052
Residential	326	45.2	325	26.6	325	-18.6 •	2.7	325	-41	172,985
Outpatient methadone	217	47.3	214	31.0	214	-16.3 *	5.2	214	-34	47,063
Outpatient nonmethadone	556	28.4	554	23.1	554	-5.3 *	2.6	554	-19	387,287
<b>Main Drug at Time of Intake<sup>b</sup></b>										
Alcohol	1,117	29.4	1,110	20.9	1,111	-8.5 *	1.9	1,110	-29	617,325
Marijuana	443	50.5	441	40.8	441	-9.8 *	3.5	441	-19	247,510
Cocaine	443	46.6	432	31.8	432	-14.9 *	3.3	432	-32	210,195
Crack	382	58.0	378	39.7	379	-18.3 *	3.4	378	-32	222,926
Heroin	315	58.7	310	43.2	310	-15.5 *	3.4	310	-26	107,401
<b>Self-Reported Reasons for Entering Treatment<sup>b</sup></b>										
Pressure from criminal justice system	522	40.2	521	28.7	521	-11.4 •	3.1	521	-28	310,666
Health problems	437	33.3	434	19.3	434	-14.0 •	2.6	434	-42	223,196
Relationship problems	837	36.6	834	26.4	834	-10.2 •	1.4	834	-28	441,411
Pressure from employer	132	30.3	131	21.9	131	-8.4	3.7	131	n.s.	65,313
Financial problems	501	42.3	496	29.1	497	-13.3 *	2.2	496	-31	253,711
<b>Length of Stay</b>										
Less than 1 week	299	38.0	295	28.2	296	-9.9 •	2.1	295	-26	178,660
1 week - less than 1 month	473	33.6	470	23.8	470	-9.8 *	3.1	470	-29	237,451
1 month - less than 6 months	661	34.5	656	24.4	656	-10.1 •	2.6	656	-29	355,930
6 months or more	345	31.8	344	18.5	344	-13.3 *	2.9	344	-42	173,526

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TABLE B-33. Percentage who sold drugs during the five years before and after treatment

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage selling drugs							Percentage Difference'	N
		Before	(n)	After	(n)	Difference'	Standard Error	(n)		
<b>Completion of Treatment</b>										
Treatment completed	1,190	32.5	1,186	20.7	1,186	-11.8 *	1.9	1,186	-36	652,345
Treatment not completed	507	43.0	500	33.4	501	-9.7 *	2.6	500	-23	255,903
<b>Client Satisfaction with Treatment Episode</b>										
Very helpful	759	32.4	757	16.9	757	-15.5 *	2.2	151	-48	412,078
Somewhat/not helpful	977	37.6	968	30.7	969	-6.9 *	2.0	968	-18	514,926
<b>Number of Other Treatment Episodes in Lifetime</b>										
0	531	25.7	529	15.6	529	-10.1 *	2.5	529	-39	315,486
1-2	708	35.6	704	25.6	704	-10.0 *	2.2	704	-28	366,736
3 or more	525	46.0	519	33.9	520	-12.1 *	2.2	519	-26	259,067
<b>Number of Treatment Episodes Before SROS Episode</b>										
0	984	30.8	978	22.1	979	-8.8 *	2.3	978	-29	555,484
1-2	553	38.6	549	26.2	549	-12.4 *	2.1	549	-32	275,071
3 or more	244	45.5	242	30.8	242	-14.7 *	2.7	242	-32	120,941
<b>Number of Treatment Episodes After SROS Episode</b>										
0	839	28.2	836	16.1	836	-12.1 *	1.7	836	-43	485,141
1 or more	943	41.9	934	32.9	935	-9.0 *	2.0	934	-21	468,147

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the 'before' or 'after' question were not used to calculate the difference or p-value of the paired t-test.

<sup>b</sup> Respondents could be classified in more than one or none of the categories.

**Table B-34. Percentage who engaged in prostitution/procurement during the five years before and after treatment  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Characteristics	n	Percentage engaging in prostitution/procurement					Standard Error	Percentage Difference*	N	
		Before	(n)	After	(n)	Difference'				
<b>TOTAL SAMPLE</b>	<b>3,047</b>									
Total Interviewed	1,799	12.8	1,790	9.5	1,790	-3.2 •	0.9	1790	-25	963,696
<b>Sex</b>										
Male	1,251	10.7	1,244	7.9	1,244	-2.8 •	1.0	1,244	-26	688,017
Female	548	17.9	546	13.7	546	-4.2 *	1.7	546	-23	275,679
<b>Race/Ethnicity</b>										
White (non-Hispanic)	1,101	9.7	1,095	6.5	1,095	-3.2 *	1.0	1,095	-33	579,304
Black (non-Hispanic)	499	20.4	497	18.4	497	-2.0	2.2	497	n.s.	272,993
Hispanic	137	7.4	137	4.4	137	-3.0 •	1.1	137	-41	79,530
<b>Age at Time of Discharge</b>										
Less than 18	156	6.2	156	3.0	156	-3.2	2.5	156	n.s.	77,605
18-29	674	13.3	591	12.8	591	-0.5	1.4	591	n.s.	334,342
30-39	660	16.1	611	10.5	611	-5.6 *	1.9	611	3 5	320,822
40 +	309	7.2	306	3.8	306	-3.4 *	1.3	306	-47	160,460
<b>Education</b>										
1 to 9 years	306	12.7	304	9.8	304	-2.9	2.3	304	n.s.	171,919
10 to 11 years	487	13.0	485	12.2	485	-0.7	1.8	485	n.s.	267,835
12 years or GED	517	12.5	513	8.3	513	-4.2 *	2.0	513	-34	271,002
College/grad school	486	13.0	485	7.9	485	-5.1 *	1.9	485	-39	250,299

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Table B-34. Percentage who engaged in prostitution/procurement during the five years before and after treatment  
 [SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage engaging in prostitution/procurement					Standard Error	(n)	Percentage Difference*	N
		Before	(n)	After	(n)	Difference'				
<b>Self-Reported Treatment Type</b>										
Inpatient	700	14.8	695	12.1	695	-2.7	1.7	695	n.s.	355,704
Residential	326	18.7	324	13.3	324	-5.4	3.1	324	n.s.	173,087
Outpatient methadone	217	22.4	215	18.3	215	4.1	2.4	215	n.s.	47,530
Outpatient nonmethadone	556	7.1	556	4.4	556	-2.7 *	1.0	556	-38	387,375
<b>Main Drug at Time of Intake<sup>b</sup></b>										
Alcohol	1,117	12.0	1,112	7.9	1,112	-4.1 *	1.1	1,112	-34	618,179
Marijuana	443	13.2	442	7.9	442	-5.3 *	1.8	442	-40	248,061
Cocaine	443	30.5	431	23.5	431	-7.0 *	2.7	431	-23	210,423
Crack	382	21.1	379	15.3	379	-5.8 *	2.7	379	-27	222,743
Heroin	315	25.0	313	20.5	313	4.4 *	1.6	313	-18	109,338
<b>Self-Reported Reasons for Entering Treatment<sup>b</sup></b>										
Pressure from criminal justice system	522	13.2	521	8.9	521	-4.3 *	1.4	521	-33	310,597
Health problems	437	16.1	433	10.9	433	-5.2 *	1.7	434	3 2	222,594
Relationship problems	837	14.1	833	10.6	833	-3.5 *	1.2	833	-25	441,313
Pressure from employer	132	10.9	132	8.8	131	-2.2	2.6	132	n.s.	65,959
Financial problems	501	18.6	500	13.7	500	4.9	2.0	500	n.s.	255,564
<b>Length of Stay</b>										
Less than 1 week	299	15.0	295	16.6	295	-1.6	1.5	295	n.s.	178,126
1 week - less than 1 month	473	15.7	471	10.4	471	-5.3 *	2.6	471	-34	237,853
1 month - less than 6 months	661	10.7	659	7.0	659	-3.7 *	1.5	659	3 5	357,517
6 months or more	345	11.3	344	6.6	344	-4.7 *	1.5	344	4 2	173,380

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**Table B-34. Percentage who engaged in prostitution/procurement during the five years before and after treatment  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Characteristics	n	Percentage engaging in prostitution/procurement					Standard Error	Percentage Difference'	N	
		Before	(n)	After	(n)	Difference'				
<b>Completion of Treatment</b>										
Treatment completed	1,190	11.9	1,188	8.1	1,188	-3.7 *	1.1	1,188	-31	653,254
Treatment not completed	507	16.0	501	12.8	501	-3.3 *	1.6	501	-21	256,118
<b>Client Satisfaction with Treatment Episode</b>										
Very helpful	759	13.9	757	8.9	757	-5.0 *	1.8	757	-36	411,782
Somewhat/not helpful	977	12.4	971	10.2	971	-2.2 .	0.9	951	-18	516,346
<b>Number of Other Treatment Episodes in Lifetime</b>										
0	531	6.1	530	2.4	530	-3.7 *	1.5	530	-61	315,888
1-2	708	11.2	705	10.4	704	-0.8	1.2	704	n.s.	366,736
3 or more	525	23.6	522	17.5	522	-6.1 *	2.1	519	-26	259,067
<b>Number of Treatment Episodes Before SROS Episode</b>										
0	984	8.1	980	6.9	980	-1.2	1.1	980	n.s.	555,395
1-2	553	16.2	551	10.7	551	-5.4 *	1.5	551	-33	276,246
3 or more	244	26.8	243	19.2	243	-7.6 *	3.2	243	-28	121,767
<b>Number of Treatment Episodes After SROS Episode</b>										
0	839	9.0	838	4.9	838	-4.0 *	1.3	838	-44	486,457
1 or more	943	16.9	936	14.4	936	-2.5 *	1.4	936	-15	468,407

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the "before" or "after" question were not used to calculate the difference or p-value of the paired t-test.

<sup>b</sup> Respondents could be classified in more than one or none of the categories.

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Table B-35. Percentage who engaged in theft/larceny during the five years before and after treatment  
 [SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage engaging in theft/larceny				Difference'	Standard Error	(n)	Percentage Difference'	N
		Before	(n)	After	(n)					
<b>TOTAL SAMPLE</b>	<b>3,047</b>									
<b>Total Interviewed</b>	<b>1,799</b>	<b>27.3</b>	<b>1,791</b>	<b>17.3</b>	<b>1,788</b>	<b>-9.9 *</b>	<b>1.5</b>	<b>1787</b>	<b>-36</b>	<b>960,815</b>
<b>Sex</b>										
Male	1,251	27.5	1,243	18.0	1,242	-9.5 *	1.7	1,241	-35	686,024
Female	548	26.9	548	15.7	546	-11.0 *	2.2	546	-41	275,702
<b>Race/Ethnicity</b>										
White (non-Hispanic)	1,101	27.8	1,097	16.6	1,095	-11.1 *	1.9	1,095	-40	579,045
Black (non-Hispanic)	499	26.4	495	18.9	495	-7.4 *	2.2	494	-28	271,282
Hispanic	137	20.5	137	11.0	137	-9.5	5.0	137	n.s.	79,530
<b>Age at Time of Discharge</b>										
Less than 18	156	39.0	156	27.1	156	-12.0	7.0	156	n.s.	77,605
18-29	674	34.6	593	22.2	590	-12.2 *	3.1	590	-35	334,383
30-39	660	25.4	611	17.2	610	-8.1 *	1.5	610	-32	319,934
40+	309	12.7	305	3.9	306	-8.8 *	2.4	305	-69	159,337
<b>Education</b>										
1 to 9 years	306	26.7	305	22.0	304	-4.4	3.8	303	n.s.	172,205
10 to 11 years	487	33.3	485	19.5	484	-13.6 *	3.1	484	-41	267,324
12 years or GED	517	20.6	513	13.4	512	-7.2 *	2.0	512	-35	269,258
College/grad school	486	28.3	485	15.6	485	-12.7 •	2.4	485	-45	250,299

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**Table B-35. Percentage who engaged in theft/larceny during the five years before and after treatment  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Characteristics	n	Percentage engaging in theft/larceny					Standard Error	In)	Percentage Difference'	N	
		Before	(n)	After	(n)	Difference'					
<b>Self-Reported Treatment Type</b>											
Inpatient	700	29.3	696	19.7	694	-9.4	•	2.4	694	-32	355,193
Residential	326	34.7	326	22.4	326	-12.3	•	3.1	326	-35	173,811
Outpatient methadone	217	38.3	215	28.1	214	-9.9	•	3.8	213	-26	47,343
Outpatient nonmethadone	556	20.8	554	11.5	554	-9.3	*	2.8	554	-45	385,379
<b>Main Drug at Time of Intake<sup>b</sup></b>											
Alcohol	1,117	25.5	1,114	14.4	1,112	-11.0	*	1.6	1,112	-43	617,306
Marijuana	443	35.6	443	23.4	441	-11.9	•	3.3	441	-33	247,550
Cocaine	443	39.0	432	29.0	430	-9.7	*	1.9	430	-25	210,515
Crack	382	34.1	381	21.0	379	-12.9	*	2.7	379	-38	222,255
Heroin	315	49.7	312	35.3	312	-14.3	*	3.6	311	-29	109,019
<b>Self-Reported Reasons for Entering Treatment<sup>b</sup></b>											
Pressure from criminal justice system	522	28.5	520	18.5	522	-10.0	*	2.9	522	-35	310,717
Health problems	437	32.0	436	18.5	434	-13.2	*	2.4	434	-41	222,806
Relationship problems	837	31.2	834	19.9	832	-11.2	*	2.0	832	-36	440,251
Pressure from employer	132	20.3	132	18.6	131	-1.5		3.1	131	n.s.	65,799
Financial problems	501	36.7	500	22.6	499	-14.1	*	2.8	499	-38	255,053
<b>Length of Stay</b>											
Less than 1 week	299	27.4	295	23.5	294	-3.4		2.2	293	n.s.	177,149
1 week - less than 1 month	473	33.1	471	16.6	470	-16.4	*	2.4	470	-50	237,693
1 month -less than 6 months	661	25.5	660	18.3	660	-7.1	*	2.3	660	-28	357,637
6 months or more	345	24.8	344	10.4	343	-14.4	*	3.4	343	-58	172,426

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Table B-35. Percentage who engaged in theffflarceny during the five years before and after treatment  
 [SROS sampled 3,047 clients discharged from drug: treatment in 1989-1990]

Characteristics	n	Percentage engaging in theffflarceny							Percentage Difference'	N	
		Before	(n)	After	(n)	Difference'	Standard Error	(n)			
<b>Completion of Treatment</b>											
Treatment completed	1,190	25.6	1,188	15.1	1,187	-10.3	.	1.8	1,187	-40	652,261
Treatment not completed	507	34.4	503	24.7	503	-9.4	*	2.2	502	-27	256,263
<b>Client Satisfaction with Treatment Episode</b>											
Very helpful	759	25.1	7,547	13.9	757	-11.0	*	1.8	756	-44	411,142
Somewhat/not helpful	977	29.7	973	20.7	971	-8.9	*	2.2	971	3 0	515,978
<b>Number of Other Treatment Episodes in Lifetime</b>											
0	531	20.8	529	10.0	529	-10.8	*	2.2	529	-52	314,802
1-2	708	23.2	705	16.0	704	-7.0	*	1.9	703	3 0	366,023
3 or more	525	41.8	523	28.6	521	-13.0	*	2.9	521	-31	259,801
<b>Number of Treatment Episodes Before SROS Episode</b>											
0	984	23.1	980	14.1	979	-8.9	*	0.8	979	-39	553,582
1-2	553	27.7	551	19.4	550	-8.1	*	0.9	552	-29	275,645
3 or more	244	46.3	243	28.1	242	-18.2	*	3.5	242	-39	121,607
<b>Number of Treatment Episodes After SROS Episode</b>											
0	839	22.9	837	10.5	837	-12.4	*	1.9	837	-54	485,523
1 or more	943	31.8	938	24.4	935	-7.3	*	2.3	934	-23	485,372

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

. Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the "before" or "after" question were not used to calculate the difference or p-value of the paired t-test.

<sup>b</sup> Respondents could be classified in more than one or none of the categories.

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Table B-36. Percentage who engaged in breaking and entering during the five years before and after treatment

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage engaging in breaking and entering							Percentage Difference'	N
		Before	(n)	After	(n)	Difference'	Standard Error	(n)		
<b>TOTAL SAMPLE</b>	<b>3,047</b>									
Total Interviewed	1,799	13.6	1,792	8.4	1,793	-5.2 *	1.2	1792	-38	964,140
<b>Sex</b>										
Male	1,251	16.7	1,244	10.1	1,245	-6.6 *	1.6	1,244	-40	687,538
Female	548	5.7	548	4.1	545	-1.6	1.3	548	n.s.	276,602
<b>Race/Ethnic@</b>										
White (non-Hispanic)	1,101	14.9	1,096	8.4	1,097	-6.5 •	1.4	1,096	-44	579,050
Black (non-Hispanic)	499	10.6	497	9.6	497	-1.0	2.0	497	n.s.	272,951
Hispanic	137	12.1	137	5.5	137	-6.6	5.1	137	n.s.	79,530
<b>Age at Time of Discharge</b>										
Less than 18	156	26.7	156	23.6	156	-3.1	6.4	156	n.s.	77,605
18 - 29	674	18.6	592	11.4	593	-7.2 *	2.1	592	-39	335,128
30 - 39	660	11.4	610	6.9	610	-4.5 *	1.8	610	-39	319,957
40 +	309	3.8	308	0.9	305	-2.9 *	1.3	308	-76	160,982
<b>Education</b>										
1 to 9 years	306	17.6	306	13.5	306	-4.0	2.3	306	n.s.	173,263
10 to 11 years	487	15.0	484	8.4	484	-6.5 *	2.8	484	-43	267,189
12 years or GED	517	10.7	514	6.3	515	-4.4 •	1.3	514	-41	270,747
College/grad school	486	12.5	485	7.2	485	-5.3 *	2.0	485	-42	250,299

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**Table B-36. Percentage who engaged in breaking and entering during the five years before and after treatment**

**[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Characteristics	n	Percentage engaging in breaking and entering					Standard Error	Percentage Difference*	N	
		Before	In)	After	(n)	Difference'				
<b>Self-Reported Treatment Type</b>										
Inpatient	700	14.4	696	8.8	696	-5.6 *	1.7	696	-39	356,444
Residential	326	18.7	324	11.3	325	-7.4 *	3.0	324	-40	172,607
Outpatient methadone	217	19.1	216	10.8	216	-8.2 *	3.9	216	-43	47,712
Outpatient nonmethadone	556	9.9	556	6.5	556	-3.4	1.9	556	n.s.	387,375
<b>Main Drug at Time of Intake<sup>b</sup></b>										
Alcohol	1,117	13.8	1,114	7.1	1,115	-6.8 *	1.4	1,114	4.9	618,841
Marijuana	443	23.9	442	14.1	443	-9.7 *	2.8	442	-41	248,243
Cocaine	443	17.3	432	15.1	432	-2.2	1.9	432	n.s.	210,720
Crack	382	17.6	379	10.7	379	-6.9 *	3.1	379	-39	222,926
Heroin	315	18.7	313	13.5	313	-5.2	2.4	313	n.s.	109,338
<b>Self-Reported Reasons for Entering Treatment<sup>b</sup></b>										
Pressure from criminal justice system	522	19.1	522	12.0	522	-7.2 *	2.1	522	-38	310,717
Health problems	437	16.1	436	8.4	436	-7.7 *	1.2	436	-48	224,059
Relationship problems	837	14.8	835	9.7	835	-5.1	2.0	835	n.s.	442,236
Pressure from employer	132	10.6	132	9.6	132	-1.0	2.5	132	n.s.	65,959
Financial problems	501	16.8	499	10.6	500	6.1 *	2.1	499	-36	255,006
<b>Length of Stay</b>										
Less than 1 week	299	14.6	297	12.4	297	-2.2	2.7	297	n.s.	179,470
1 week - less than 1 month	473	14.9	470	6.6	471	-8.3 *	1.8	470	-56	237,295
1 month - less than 6 months	661	14.6	659	8.7	659	-5.8 *	2.0	659	-40	356,991
6 months or more	345	9.3	345	6.8	345	-2.6	2.4	345	n.s.	173,563

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Table B-36. Percentage who engaged in breaking and entering during the five years before and after treatment

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage engaging in breaking and entering					Standard Error	Percentage Difference'	N	
		Before (n)	After (n)	Difference'	(n)					
<b>Completion of Treatment</b>										
Treatment completed	1,190	12.1	1,186	6.7	1,187	-5.4 *	1.6	1,186	-45	652,253
Treatment not completed	507	18.8	504	14.0	504	-4.8 *	1.8	504	-26	257,161
<b>Client Satisfaction with Treatment Episode</b>										
Very helpful	759	11.3	756	6.6	757	-4.7 *	1.8	756	4 2	411,520
Somewhat/not helpful	977	15.6	973	10.2	973	-5.3 *	2.2	971	-34	516,649
<b>Number of Other Treatment Episodes in Lifetime</b>										
0	531	9.2	529	3.5	529	-5.7 *	1.5	529	-62	315,486
1-2	708	10.9	705	7.6	706	-3.2 *	1.7	705	-29	366,680
3 or more	525	22.7	523	15.6	523	-7.1 *	2.3	523	-31	260,473
<b>Number of Treatment Episodes Before SROS Episode</b>										
0	984	11.2	979	7.8	980	-3.4 *	1.3	979	-30	554,713
1-2	553	13.7	552	7.5	552	-6.2 *	1.7	552	4 5	276,366
3 or more	244	23.7	243	13.4	243	-10.4 *	3.1	243	-44	121,767
<b>Number of Treatment Episodes After SROS Episode</b>										
0	839	10.5	837	3.2	837	-7.3 *	1.5	837	-70	486,056
1 or more	943	16.6	938	13.9	939	-2.7	1.6	935	n.s.	468,851

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at p<.05. n.s. Difference not significant at p<.05.

<sup>a</sup> Cases missing a response for either the "before" or "after" question were not used to calculate the difference or p-value of the paired t-test.

<sup>b</sup> Respondents could be classified in more than one or none of the categories.

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Table B-37. Percentage who violated parole during the five years before and after treatment  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage violating parole					Standard Error	Percentage Difference*	N	
		Before	(n)	After	(n)	Difference'				
<b>TOTAL SAMPLE</b>	3,047									
Total Interviewed	1,799	16.6	1,788	20.9	1,784	4.3 *	1.4	1784	26	960,136
<b>Sex</b>										
Male	1,251	19.2	1,242	24.6	1,239	5.4 *	1.7	1,239	28	685,082
Female	548	10.2	546	11.8	545	1.6	1.4	545	n.s.	275,054
<b>Race/Ethnicity</b>										
White (non-Hispanic)	1,101	18.1	1,094	20.8	1,093	2.8	1.7	1,093	n.s.	576,301
Black (non-Hispanic)	499	12.9	496	20.6	494	7.7 *	2.2	494	60	272,552
Hispanic	137	17.5	136	17.0	135	-0.7	3.1	135	n.s.	78,674
<b>Age at Time of Discharge</b>										
Less than 18	156	16.7	156	23.5	156	6.8	4.7	156	n.s.	77,605
18-29	674	21.3	591	27.1	590	5.8 *	2.5	590	27	334,853
30-39	660	16.2	608	21.6	607	5.4 *	2.4	607	33	317,355
40+	309	7.4	307	7.1	306	0.3	2.0	306	n.s.	160,116
<b>Education</b>										
1 to 9 years	306	21.2	306	26.1	305	4.8	2.8	305	n.s.	172,798
10 to 11 years	487	19.5	483	22.5	482	2.9	2.8	482	n.s.	265,404
12 years or GED	517	13.5	513	20.8	511	7.3 *	2.3	511	54	270,029
College/grad school	486	13.6	483	16.0	483	2.4	1.9	483	n.s.	249,264

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Table B-37. Percentage who violated parole during the five years before and after treatment  
 [SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	n	Percentage violating parole							Percentage Difference'	N
		Before	(n)	After	(n)	Difference*	Standard Error	(n)		
<b>Self-Reported Treatment Type</b>										
Inpatient	700	18.4	694	20.1	692	1.6	1.8	692	n.s.	354,722
Residential	326	21.1	325	33.5	325	12.3 *	2.5	325	58	172,692
Outpatient methadone	217	22.6	214	21.4	213	-0.8	4.2	213	n.s.	47,132
Outpatient nonmethadone	556	12.2	555	15.9	554	3.7	2.0	554	n.s.	385,589
<b>Main Drug at Time of Intake"</b>										
Alcohol	1,117	16.4	1,111	18.9	1,109	2.5	1.5	1,109	n.s.	615,722
Marijuana	443	22.3	442	28.5	442	6.2 *	3.0	442	28	248,458
Cocaine	443	19.4	429	26.9	428	7.5 *	3.0	428	39	209,605
Crack	382	21.1	378	26.9	376	5.7	2.6	376	n.s.	221,750
Heroin	315	25.9	311	29.2	311	3.3	4.4	311	n.s.	109,017
<b>Self-Reported Reasons for Entering Treatment<sup>b</sup></b>										
Pressure from criminal justice system	522	25.6	521	31.3	520	5.6	2.9	520	n.s.	308,931
Health problems	437	15.7	436	19.1	435	3.4	1.7	435	n.s.	223,148
Relationship problems	837	16.4	832	21.9	832	5.6 *	1.9	832	34	440,858
Pressure from employer	132	17.2	131	21.0	131	3.8	4.5	131	n.s.	65,799
Financial problems	501	21.8	497	25.6	497	3.8	2.3	497	n.s.	254,125
<b>Length of Stay</b>										
Less than 1 week	299	15.6	297	24.9	294	9.1 *	2.5	294	58	177,581
1 week - less than 1 month	473	21.3	468	23.6	468	2.2	2.8	468	n.s.	236,948
1 month - less than 6 months	661	16.2	658	20.9	657	4.7 *	2.0	657	29	356,343
6 months or more	345	12.4	345	12.0	345	-0.4	2.5	345	n.s.	173,563

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**Table B-37. Percentage who violated parole during the five years before and after treatment  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Characteristics	n	Percentage violating parole							Percentage Difference <sup>c</sup>	N
		Before	(n)	After	(n)	Difference <sup>a</sup>	Standard Error	(n)		
<b>Completion of Treatment</b>										
Treatment completed	1,190	14.6	1,183	16.8	1,180	2.2	1.4	1,180	n.s.	649,163
Treatment not completed	507	22.8	504	30.7	503	7.9 *	2.9	503	35	256,648
<b>Client Satisfaction with Treatment Episode</b>										
Very helpful	759	14.8	755	18.2	754	3.4	1.7	754	n.s.	410,637
Somewhat/not helpful	977	18.4	971	23.5	968	5.1 .	1.9	968	28	513,930
<b>Number of Other Treatment Episodes in Lifetime</b>										
0	531	9.7	527	11.2	525	1.5	2.1	525	n.s.	313,812
1-2	708	15.6	705	21.3	704	5.7 *	2.0	704	37	355,092
3 or more	525	26.8	522	32.6	521	5.7 *	2.4	521	21	259,133
<b>Number of Treatment Episodes Before SROS Episode</b>										
0	984	11.4	977	16.7	974	5.3 *	1.7	974	46	552,499
1-2	553	21.2	551	26.2	550	4.9 .	2.5	550	23	274,978
3 or more	244	30.9	243	28.9	243	2.0	2.0	243	n.s.	121,767
<b>Number of Treatment Episodes After SROS Episode</b>										
0	839	13.1	835	13.9	833	0.8	1.6	833	n.s.	484,382
1 or more	943	20.1	937	28.0	935	8.0 *	2.2	935	40	466,923

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

. Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the "before" or "after" question were not used to calculate the difference or the p-value of the paired t-test.

<sup>b</sup> Respondents could be classified in more than one or none of the categories.

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**Table B-38. Percentage with Selected Lifestyle characteristics during the five years before and after treatment**

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

Characteristics	Percentage										Percentage Difference <sup>a</sup>	N	
	B	e	f	o	r	e	-	A	<sup>a</sup> f	Standard			t
Had custody of children	37.5		1,774		41.0	1,767		3.5 *	1.7	1,766		9	947,257
Lost custody of children	7.7		1,799		5.4	1,799		-2.3 *	0.9	1,799		-30	967,012
Homeless at least two nights	21.8		1,795		14.4	1,794		-7.4 *	1.3	1,792		-34	963,821
Spent time in shelter	3.9		1,794		2.6	1,797		-1.3	0.7	1,793		n.s.	964,279
Spent time on street	10.3		1,799		6.2	1,799		-4.1 *	0.9	1,799		-40	967,012
Spent time both in shelter and on street	7.4		1,799		5.5	1,799		-1.9 *	0.7	1,799		-26	967,012
Been attacked with weapon or seriously hit or beaten	31.8		1,795		24.9	1,790		-6.7 *	1.5	1,787		-21	960,378
Beaten seriously enough to see a doctor or to stay in bed	20.5		1,798		16.9	1,796		-3.6 *	1.5	1,795		-18	964,013
Injected drugs	23.1		1,799		14.3	1,799		-8.8 *	1.5	1,799		-38	967,012
Sad or depressed	53.9		1,796		53.1	1,796		-0.7	1.2	1,795		n.s.	965,346
Attempted suicide	15.2		1,798		8.6	1,796		-6.6 *	1.1	1,796		-43	965,811
Had hallucinations or delusions	18.8		1,791		16.4	1,797		2.5 *	1.1	1,791		13	964,067

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the “before” or “after” question were not used to calculate the difference or p-value of the paired t-test.

**Table B-39. Percentage who were employed full-time during the five years before and after treatment  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Characteristics	n	Percentage employed full-time							Percentage Difference'	N
		Before	(n)	After	(n)	Difference''	Standard Error	(n)		
<b>TOTAL SAMPLE</b>	<b>3,047</b>									
Total Interviewed	1,799	75.3	1,685	74.4	1,685	-0.8	2.6	1685	n.s.	911,992
<b>Sex</b>										
Male	1,251	81.0	1,174	78.1	1,174	-2.8	2.1	1,174	n.s.	651,931
Female	548	61.3	511	65.3	511	4.0	4.2	511	n.s.	260,060
<b>Race/Ethnicity</b>										
White (non-Hispanic)	1,101	76.0	1,032	80.9	1,032	4.8 *	2.4	1,032	6	547,534
Black (non-Hispanic)	499	73.3	454	61.0	454	-12.5 *	3.1	454	-17	251,759
Hispanic	137	81.6	134	71.7	134	-9.9 *	5.0	134	-12	78,835
<b>Age at Time of Discharge</b>										
Less than 18	156	25.4	133	89.5	133	64.1 *	5.1	133	252	65,986
18 - 29	674	74.2	570	78.1	570	3.9	3.0	570	n.s.	324,381
30-39	660	83.8	576	75.4	576	-8.3 *	2.1	576	-10	303,107
40 +	309	79.6	280	60.3	280	-19.3 *	3.7	280	-24	148,545
<b>Education</b>										
1 to 9 years	306	72.0	290	64.8	290	-7.2 *	3.0	290	-10	166,025
10 to 11 years	487	71.5	446	70.5	446	-1.0	4.3	446	n.s.	249,453
12 years or GED	517	78.1	489	78.9	486	0.8	3.8	489	n.s.	257,024
College/grad school	486	79.7	453	81.3	453	1.6	3.7	453	n.s.	235,351

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See footnotes at end of table.

**Table B-39. Percentage who were employed full-time during the five years before and after treatment  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Characteristics	n	Percentage employed full-time					Standard Error	Percentage Difference <sup>c</sup>	N	
		Before	(n)	After	(n)	Difference*				
<b>Self-Reported Treatment Type</b>										
Inpatient	700	75.3	657	71.4	657	-3.8	3.1	657	n.s.	338,973
Residential	326	80.0	310	76.7	310	-3.3	2.9	310	n.s.	166,943
Outpatient methadone	217	76.6	196	57.8	196	-18.8 *	4.8	196	-25	43,944
Outpatient nonmethadone	556	73.3	518	78.6	518	5.3	5.0	518	n.s.	360,635
<b>Main Drug at Time of Intake<sup>b</sup></b>										
Alcohol	1,117	76.6	1,044	76.3	1,044	-0.3	2.6	1,044	n.s.	584,493
Marijuana	443	75.6	416	81.8	416	6.2	5.0	416	n.s.	235,294
Cocaine	443	78.7	400	71.9	400	-6.8	3.2	400	n.s.	208,160
Crack	382	77.8	359	71.9	359	-5.9	2.5	359	n.s.	200,571
Heroin	315	72.9	290	54.5	290	-18.5 *	5.0	290	-25	103,696
<b>Self-Reported Reasons for Entering Treatment<sup>b</sup></b>										
Pressure from criminal justice system	522	78.4	500	79.1	500	0.7	3.7	500	n.s.	297,004
Health problems	437	75.2	397	66.5	397	-8.7	3.5	397	n.s.	204,161
Relationship problems	837	78.2	796	75.0	796	-3.2	2.7	796	n.s.	423,936
Pressure from employer -	132	90.7	127	86.9	127	-3.8	5.0	127	n.s.	63,877
Financial problems	501	80.1	473	73.2	473	-7.0	3.0	473	n.s.	242,756
<b>Length of Stay</b>										
Less than 1 week	299	71.5	277	65.9	277	-5.5	4.2	277	n.s.	168,937
1 week - less than 1 month	473	79.5	450	76.3	450	-3.2	3.6	450	n.s.	226,588
1 month - less than 6 months	661	73.9	614	76.8	614	2.9	3.7	614	n.s.	334,495
6 months or more	345	75.6	320	74.7	320	0.9	5.2	320	n.s.	163,689

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**Table B-39. Percentage who were employed full-time during the five years before and after treatment  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

Characteristics	n	Percentage employed full-time							Percentage Difference'	N
		Before	(n)	After	(n)	Difference'	Standard Error	(n)		
<b>Completion of Treatment</b>										
Treatment completed	1,190	78.1	1,120	76.7	1,120	-1.5	2.5	1,120	n.s.	623,510
Treatment not completed	507	70.2	468	70.9	468	0.7	4.3	468	n.s.	238,028
<b>Client Satisfaction with Treatment Episode</b>										
Very helpful	759	78.4	717	76.5	717	-1.9	2.6	717	n.s.	4,557
Somewhat/not helpful	977	73.5	905	73.6	905	0.1	3.3	905	n.s.	3,668
<b>Number of Treatment Episodes Before SROS Episode</b>										
0	984	74.2	929	76.4	929	2.2	3.3	929	n.s.	525,555
1-2	553	76.9	513	75.3	513	-1.6	2.9	513	n.s.	258,435
3 or more	244	77.7	224	66.2	224	-11.4 *	4.7	224	-15	116,170
<b>Number of Treatment Episodes After SROS Episode</b>										
0	839	76.3	790	78.3	790	2.0	3.6	790	n.s.	461,257
1 or more	943	74.6	877	71.3	877	-3.3	2.9	877	n.s.	440,621

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

\* Difference is significant at  $p < .05$ . n.s. Difference not significant at  $p < .05$ .

<sup>a</sup> Cases missing a response for either the “before” or “after” question were not used to calculate the difference or p-value of the paired t-test.

<sup>b</sup> Respondents could be classified in more than one or none of the categories.

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**Table B-40. Percentage who received additional treatment after SROS episode and mean number of episodes  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

<b>Characteristics</b>	<b>Percent receiving additional treatment</b>	<b>Mean number of additional episodes</b>	<b>N</b>
<b>Total</b>	<b>49.2</b>	<b>2.18</b>	<b>957,779</b>
<b>Sex</b>			
Male	48.8	2.28	683,190
Female	50.0	1.97	274,588
<b>Race/Ethnicity</b>			
White (non-Hispanic)	49.0	2.17	574,630
Black (non-Hispanic)	53.3	2.10	273,092
Hispanic	37.8	2.59	77,446
<b>Age</b>			
Less than 18	48.1	1.77	77,604
18 to 29	49.4	2.27	379,861
30 to 39	53.0	2.20	342,402
40 +	40.9	2.14	157,910
<b>Number of Prior Treatment Episodes</b>			
0	43.1	1.94	555,009
1-2	52.7	1.99	274,483
3 or more	69.6	3.20	121,500

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**Table B-40. Percentage who received additional treatment after SROS episode and mean number of episodes  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

<b>Characteristics</b>	<b>Percent receiving additional treatment</b>	<b>Mean number of additional episodes</b>	<b>N</b>
<b>Self-Reported Treatment Type</b>			
Inpatient	57.9	2.50	354,410
Residential	53.7	2.00	170,900
Outpatient methadone	68.8	2.07	47,172
Outpatient nonmethadone	36.7	1.87	385,297
<b>Length of Stay</b>			
Less than 1 week	64.9	2.78	176,006
1 week - less than 1 month	50.9	2.06	235,700
1 month - less than 6 months	45.4	1.95	355,690
6 months or more	40.1	1.92	173,563
<b>Completion of Treatment</b>			
Treatment completed	47.0	2.16	650,064
Treatment not completed	55.6	2.21	256,748
<b>Main Drug at Time of Intake<sup>a</sup></b>			
Alcohol	47.5	2.16	614,937
Marijuana	47.9	2.27	248,531
Cocaine	63.4	2.27	222,384
Crack	60.9	2.51	212,232
Heroin	76.7	2.64	107,783

Note: Percentages are weighted to reflect a population of approximately 967,000 individuals discharged from treatment between September 1, 1989, and August 31, 1990, who were still living five or more years after treatment.

<sup>a</sup> Respondents could be classified in more than one or none of the categories.

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**Table B-41. Correlates of alcohol use in the five years after treatment (Tx) —  
Results of logistic regression models  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

	MODEL 1	MODEL 2	MODEL 3
Multiple R-Squared	0.15	0.18	0.19
Observations Used in Analysis	1,763	1,408	1,377
Weighted Count	948,409	788,698	771,897
<b>INDEPENDENT VARIABLES</b>			
	<b>Odds ratios<sup>1</sup></b>		
<b>Pre-Treatment</b>			
Age in years (linear)	0.84 *	0.89 *	0.87 *
Age in years squared (nonlinear)	1.00 *	1.00 *	1.00 *
Used alcohol before Tx vs not	10.91 *	11.13 *	10.70 *
Used marijuana before Tx vs not	1.02	0.90	0.94
Used crack before Tx vs not	0.90	0.79	0.76
Used cocaine before Tx vs not	1.07	0.97	0.96
Used heroin before Tx vs not	1.19	1.30	1.16
Male vs female	1.43 *	1.42	1.45
Black vs white	1.46	1.49	1.62
Hispanic vs white	0.54 *	0.57 *	0.59 *
Other race vs white	0.66	0.54	0.57
Entered Tx due to legal pressure vs not	0.88 *	0.96	0.97
<b>Treatment</b>			
Completed treatment plan vs not		0.77	0.79
LOS 1 week to 1 month vs <1 week		0.73	0.88
LOS 1-6 months vs CI week		0.55 *	0.64
LOS more than 6 months vs <1 week		0.33 *	0.38 *
Counselor understood client vs not		0.74 *	0.73 *
Used drugs during Tx vs not		2.03 *	1.90 *
Facility revenue per patient		1.00	1.00
Facility revenue above median vs below		1.43	1.48
Residential vs inpatient		1.04	1.03
Methadone vs inpatient		0.40 *	0.42
Outpatient nonmethadone vs inpatient		0.80	0.90
<b>Post-Treatment</b>			
Had more treatment after Tx vs not			1.30 *
Attended AA/NA/CA after Tx vs not			1.00

<sup>1</sup> An odds ratio above 1.00 means alcohol use becomes more likely; an odds ratio below 1.00 means alcohol use becomes less likely. \* Significant at p<.05; LOS - Length of Stay.

Table B-42. Correlates of any drug use in the five years after treatment (T x) ----

Results of logistic regression models

**[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

	MODEL 1	MODEL 2	MODEL 3
Multiple R-Squared	0.35	0.39	0.42
Observations Used in Analysis	1,770	1,414	1,383
Weighted Count	952,310	791,647	774,847
<b>INDEPENDENT VARIABLES</b>			
	<b>Odds ratios.<sup>1</sup></b>		
<b>Pre-Treatment</b>			
Age in years (linear)	0.96	0.98	0.97
Age in years squared (nonlinear)	1.00	1.00	1.00
Used alcohol before Tx vs not	0.48 *	0.44 *	0.41 *
Used marijuana before Tx vs not	5.53 *	5.21 *	5.64 *
Used crack before Tx vs not	1.73 *	1.67 *	1.48
Used cocaine before Tx vs not	1.72 *	1.63 *	1.54 *
Used heroin before Tx vs not	5.21 *	4.26 *	2.94 *
Male vs female	1.62 *	1.70 *	1.72 *
Black vs white	1.15	1.06	1.13
Hispanic vs white	0.61	0.52	0.49
Other race vs white	1.51	1.22	1.23
Entered Tx due to legal pressure vs not	1.12 *	1.20	1.19
<b>Treatment</b>			
Completed treatment plan vs not		0.61 *	0.67 *
LOS 1 week to 1 month vs <1 week		0.59 *	0.74
LOS 1-6 months vs <1 week		0.83	0.99
LOS more than 6 months vs <1 week		0.42 *	0.50 *
Counselor understood client vs not		1.17	1.22
Used drugs during Tx vs not		3.13 *	3.00 *
Facility revenue per patient		1.00	1.00
Facility revenue above median vs below		1.31	1.27
Residential vs inpatient		1.28	1.36
Methadone vs inpatient		1.97	2.48
Outpatient nonmethadone vs inpatient		0.66	0.82
<b>Post-Treatment Variables</b>			
Had more treatment after Tx vs not			1.58 *
<b>Attended AA/NA/CA after Tx vs not</b>			<b>0.99</b>

<sup>1</sup> An odds ratio above 1.00 means drug use becomes more likely; an odds ratio below 1.00 means drug use becomes less likely. \* Significant at **p<.05**; LOS - Length of Stay.

Table B-43. Correlates of marijuana use in the five years after treatment (Tx) —

Results of logistic regression models

**ISROS sampled 3,047 clients discharged from drug treatment in 1989-1990**

	MODEL 1	MODEL 2	MODEL 3
Multiple R-Squared	0.43	0.48	0.48
Observations Used in Analysis	1,756	1,402	1,371
Weighted Count	943,842	784,113	767,313
<b>INDEPENDENT VARIABLES</b>			
	<b>Odds ratios<sup>1</sup></b>		
<b>Pre-Treatment</b>			
Age in years (linear)	0.82 *	0.84 *	0.84 *
Age in years squared (nonlinear)	1.00 *	1.00	1.00 *
Used alcohol before Tx vs not	1.04	0.85	0.74
Used marijuana before Tx vs not	24.29 *	28.79 *	30.57 *
Used crack before Tx vs not	0.93	0.98	0.86
Used cocaine before Tx vs not	1.48 *	1.43	1.39
Used heroin before Tx vs not	1.12	1.14	1.08
Male vs female	2.10 *	2.53 *	2.56 *
Black vs white	1.09	1.26	1.31
Hispanic vs white	0.57	0.62	0.57
Other race vs white	2.36	2.12	2.12
Entered Tx due to legal pressure vs not	1.03	1.14	1.13
<b>Treatment</b>			
Completed treatment plan vs not		0.77	0.78
LOS 1 week to 1 month vs <1 week		0.71	0.77
LOS 1-6 months vs <1 week		1.19	1.23
LOS more than 6 months vs <1 week		0.50 *	0.48 *
Counselor understood client vs not		1.26	1.25
Used drugs during Tx vs not		3.71 *	3.86 *
Facility revenue per patient		1.00	1.00
Facility revenue above median vs below		1.49	1.49
Residential vs inpatient		0.98	1.14
Methadone vs inpatient		0.84	0.87
Outpatient nonmethadone vs inpatient		1.12	1.17
<b>Post-Treatment</b>			
Had more treatment after Tx vs not			1.14 *
<b>Attended AA/NA/CA after Tx vs not</b>			<b>1.00</b>

<sup>1</sup> An odds ratio above 1.00 means marijuana use becomes more likely; an odds ratio below 1.00 means marijuana use becomes less likely. \* Significant at **p<.05**; LOS - Length of Stay.

**Table B-44. Correlates of cocaine use in the five years after treatment (Tx) —  
Results of logistic regression models  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

	MODEL 1	MODEL 2	MODEL 3
Multiple R-Squared	0.22	0.25	0.26
Observations Used in Analysis	1,767	1,412	1,381
Weighted Count	951,032	790,876	774,075
<b>INDEPENDENT VARIABLES</b>			
	<b>Odds ratios<sup>1</sup></b>		
<b>Pre-Treatment</b>			
Age in years (linear)	<b>0.93</b>	<b>0.98</b>	<b>0.97</b>
Age in years squared (nonlinear)	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>
Used alcohol before Tx vs not	<b>1.15</b>	<b>1.14</b>	<b>0.98</b>
Used marijuana before Tx vs not	<b>1.88 *</b>	<b>1.86 *</b>	<b>2.03 *</b>
Used crack before Tx vs not	<b>0.77</b>	<b>0.79</b>	<b>0.77</b>
Used cocaine before Tx vs not	<b>8.58 *</b>	<b>7.54 *</b>	<b>7.39 *</b>
Used heroin before Tx vs not	<b>2.41 *</b>	<b>2.03 *</b>	<b>1.84 *</b>
Male vs female	<b>1.15</b>	<b>1.28</b>	<b>1.26</b>
Black vs white	<b>1.26</b>	<b>1.23</b>	<b>1.26</b>
Hispanic vs white	<b>1.32</b>	<b>1.17</b>	<b>1.08</b>
Other race vs white	<b>0.90</b>	<b>0.79</b>	<b>0.76</b>
Entered Tx due to legal pressure vs not	<b>1.00</b>	<b>1.08</b>	<b>1.08</b>
<b>Treatment</b>			
Completed treatment vs not		<b>0.79</b>	<b>0.79</b>
LOS 1 week to 1 month vs <1 week		<b>0.72</b>	<b>0.83</b>
LOS 1-6 months vs <1 week		<b>0.92</b>	<b>1.01</b>
LOS more than 6 months vs <1 week		<b>0.34 *</b>	<b>0.37 *</b>
Counselor understood client vs not		<b>0.99</b>	<b>0.99</b>
Used drugs during Tx vs not		<b>3.00 *</b>	<b>2.92 *</b>
Facility revenue per patient		<b>1.00</b>	<b>1.00</b>
Facility revenue above median vs below		<b>1.03</b>	<b>0.99</b>
Residential vs inpatient		<b>0.87</b>	<b>0.88</b>
Methadone vs inpatient		<b>1.48</b>	<b>1.58</b>
Outpatient nonmethadone vs inpatient		<b>0.61</b>	<b>0.68</b>
<b>Post-Treatment</b>			
Had more treatment after Tx vs not			<b>1.09 *</b>
<b>Attended AA/NA/CA after Tx vs not</b>			<b>1.01</b>

<sup>1</sup> An odds ratio above 1.00 means cocaine use becomes more likely; an odds ratio below 1.00 means cocaine use becomes less likely. \* Significant at p<.05; LOS - Length of Stay.

**Table B-45. Correlates of crack use in the five years after treatment (Tx) —  
Results of logistic regression models  
[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

	MODEL 1	MODEL 2	MODEL 3
Multiple R-Squared	0.27	0.29	0.32
Observations Used in Analysis	1,764	1,408	1,378
Weighted Count	948,481	787,817	771,621
<b>INDEPENDENT VARIABLES</b>			
	<b>Odds ratios.<sup>1</sup></b>		
<b>Pre-Treatment</b>			
Age in years (linear)	1.03	1.06	1.05
Age in years squared (nonlinear)	1.00	1.00	1.00
Used alcohol before Tx vs not	1.23	1.23	1.07
Used marijuana before Tx vs not	1.49	1.35	1.45
Used crack before Tx vs not	8.41 *	7.61 *	7.46 *
Used cocaine before Tx vs not	1.58 *	1.48	1.45
Used heroin before Tx vs not	1.02	1.00	0.87
Male vs female	1.12	1.21	1.20
Black vs white	1.93 *	1.72 *	1.79 *
Hispanic vs white	0.92	0.84	0.83
Other race vs white	0.92	0.64	0.59
Entered Tx due to legal pressure vs not	1.06	1.26	1.25
<b>Treatment</b>			
Completed treatment plan vs not		0.86	0.87
LOS 1 week to 1 month vs <1 week		0.66	0.77
LOS 1-6 months vs <1 week		1.04	1.17
LOS more than 6 months vs <1 week		0.54	0.59
Counselor understood client vs not		1.27	1.25
Used drugs during Tx vs not		2.32 *	2.03 *
Facility revenue per patient		1.00	1.00
Facility revenue above median vs below		0.73	0.75
Residential vs inpatient		0.79	0.84
Methadone vs inpatient		0.69	0.73
Outpatient nonmethadone vs inpatient		0.47 *	0.54 *
<b>Post-Treatment</b>			
Had more treatment after Tx vs not			1.26 *
Attended AA/NA/CA after Tx vs not			1.00

<sup>1</sup> An odds ratio above 1.00 means crack use becomes more likely; an odds ratio below 1.00 means crack use becomes less likely. \* Significant at p<.05; LOS - Length of Stay.

Table B-46. Correlates of heroin use in the **five** years after treatment (Tx) —  
Results of logistic regression models

**[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

	MODEL 1	MODEL 2	MODEL 3
Multiple R-Squared	0.44	0.47	0.47
Observations Used in Analysis	1,767	1,411	1,380
Weighted Count	949,937	789,274	772,474
<b>INDEPENDENT VARIABLES</b>			
	<b>Odds ratios<sup>1</sup></b>		
<b>Pre-Treatment</b>			
Age in years (linear)	0.99	1.03	1.01
Age in years squared (nonlinear)	1.00	1.00	1.00
Used alcohol before Tx vs not	0.68	0.68	0.66
Used marijuana before <b>Tx</b> vs not	0.90	0.76	0.72
Used crack before <b>Tx</b> vs not	0.92	0.84	0.72
Used cocaine before Tx vs not	1.95 *	1.97	1.93
Used heroin before Tx vs not	48.91 *	47.94 *	44.26 *
Male vs female	1.27	1.34	1.43
Black vs white	1.21	1.31	1.39
Hispanic vs white	2.27 *	1.62	1.51
Other race vs white	0.69	0.57	0.55
Entered Tx due to legal pressure vs not	1.20	0.93	0.90
<b>Treatment</b>			
Completed treatment plan vs not		0.62	0.62
LOS 1 week to 1 month vs <b>&lt;1</b> week		1.05	1.16
LOS 1-6 months vs <b>&lt;1</b> week		1.16	1.26
LOS more than 6 months vs <b>&lt;1</b> week		1.01	1.11
Counselor understood client vs not		0.73 *	0.75
Used drugs during Tx vs not		2.34 *	2.32 *
Facility revenue per patient		1.00	1.00 *
Facility revenue above median vs below		1.77	1.88
Residential vs inpatient		0.63	0.64
Methadone vs inpatient		0.46	0.49
Outpatient nonmethadone vs inpatient		0.29 *	0.32 *
<b>Post-Treatment</b>			
Had more treatment after Tx vs not			1.07 *
<b>Attended AA/NA/CA after Tx vs not</b>			<b>1.02 *</b>

<sup>1</sup> An odds ratio above 1.00 means heroin use becomes more likely; an odds ratio below 1.00 means heroin use becomes less likely. \* Significant at **p<.05**; LOS - Length of Stay.

Table B-47. Correlates of alcohol use in the five years after treatment (Tx) —  
Results of OLS regression models

**[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

	MODEL 1	MODEL 2	MODEL 3
Multiple R-Squared	0.13	0.15	0.15
Observations Used in Analysis	1,747	1,397	1,370
Weighted Count	943,093	784,637	769,838
INDEPENDENT VARIABLES			
	<b>Coefficients</b>		
Intercept	8.13	9.49	9.05
Pre-Treatment			
Age in years (linear)	-0.18	-0.09	-0.10
Age in years squared (nonlinear)	0.00	0.00	0.00
Days/month used alcohol before Tx	0.30 *	0.28 *	0.28 *
Days/month used marijuana before Tx	0.03	0.01	0.02
Days/month used crack before Tx	0.03	0.03	0.02
Days/month used cocaine before Tx	-0.02	-0.04	-0.04
Days/month used heroin before Tx	0.14 *	0.18 *	0.18 *
Male vs female	<b>1.61 *</b>	0.96	0.91
Black vs white	1.42 *	0.95	0.94
Hispanic vs white	-1.51	-1.78 *	-1.86
Other race vs white	0.28	-0.09	-0.14
Entered Tx due to legal pressure vs not	-0.35	-0.21	-0.18
Treatment			
Completed treatment plan vs not		-0.64	-0.76
LOS 1 week to 1 month vs <1 month		-2.21 *	-1.82 *
LOS 1-6 months vs < 1 month		-3.32 *	-3.15 *
LOS more than 6 months vs < 1 month		-5.34 *	-5.11 *
Counselor understood client		0.08	0.14
Used drugs during Tx vs not		3.10 *	2.89 *
Facility revenue per patient		0.00	0.00
Facility revenue above median vs below		0.92	0.95
Residential vs inpatient		0.99	0.20
Methadone vs inpatient		-2.93	0.03
Outpatient nonmethadone vs inpatient		0.14	1.17
Post-Treatment			
Had more treatment after Tx vs not			-3.19
<b>Attended AA/NA/CA after Tx vs not</b>			<b>0.40</b>

\* Significant at **p<.05**; LOS - Length of Stay.

Table B-48. Correlates of marijuana use in the five years after treatment (Tx) —  
 Results of OLS regression models  
 [SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

	MODEL 1	MODEL 2	MODEL 3
Multiple R-Squared	0.25	0.27	0.28
Observations Used in Analysis	1,739	1,388	1,360
Weighted Count	936,875	777,467	762,160
<b>INDEPENDENT VARIABLES</b>			
	<b>Coefficients</b>		
Intercept	8.88	5.88	5.15
<b>Pre-Treatment</b>			
Age in years (linear)	-0.43 *	-0.38 *	-0.38 *
Age in years squared (nonlinear)	0.00 *	0.00 *	0.00 *
Days/month used alcohol before Tx	0.03	0.03	0.03
Days/month used marijuana before TX	0.33 *	0.29 *	0.29 *
Days/month used crack before Tx	0.01	0.00	-0.01
Days/month used cocaine before Tx	0.00	0.02	0.02
Days/month used heroin before Tx	0.02	0.04	0.03
Male vs female	1.62 *	1.89 *	1.81 *
Black vs white	0.19	0.09	0.15
Hispanic vs white	1.04	-0.37	-0.37
Other race vs white	1.76	0.26	0.20
Entered Tx due to legal pressure vs not	0.13	0.49	0.53
<b>Treatment</b>			
Completed treatment plan vs not		-0.08	-0.12
LOS 1 week to 1 month vs < 1 month		-1.38	-1.00
LOS 1-6 months vs < 1 month		-0.86	-0.63
LOS more than 6 months vs < 1 month		-1.81	-1.51
Counselor understood client vs not		0.29	0.30
Used drugs during Tx vs not		3.11 *	2.96 *
Facility revenue per patient		0.00	0.00
Facility revenue above median vs below		0.33	0.34
Residential vs inpatient		1.07	0.41
Methadone vs inpatient		-1.09	0.01
Outpatient nonmethadone vs inpatient		0.95	1.37
<b>Post-Treatment</b>			
Had more treatment after Tx vs not			-1.01
<b>Attended AA/NA/CA after Tx vs not</b>			<b>1.31</b>

\* Significant at p<.05; LOS - Length of Stay.

Table B-49. Correlates of crack use in the five years after treatment (Tx) —  
Results of OLS regression models

**ISROS sampled 3,047 clients discharged from drug treatment in 1989-1990**

	MODEL 1	MODEL 2	MODEL 3
Multiple R-Squared	0.24	0.26	0.29
Observations Used in Analysis	1,751	1,400	1,372
Weighted Count	944,764	785,356	770,050
<b>INDEPENDENT VARIABLES</b>			
	<b>Coefficients</b>		
Intercept	3.09	4.63	3.62
<b>Pre-Treatment</b>			
Age in years (linear)	-0.11	-0.11	-0.14
Age in years squared (nonlinear)	0.00	0.00	0.00
Days/month used alcohol before Tx	0.01	-0.01	0.00
Days/month used marijuana before Tx	0.04 *	0.02	0.03
Days/month used crack before Tx	0.36 *	0.39 *	0.37 *
Days/month used cocaine before Tx	0.04	0.04	0.03
Days/month used heroin before Tx	0.02	0.01	-0.02
Male vs female	-0.20	0.13	0.06
Black vs white	1.38 *	0.97	1.16 *
Hispanic vs white	0.02	0.33	0.17
Other race vs white	0.69	-0.84	-0.89
Entered Tx due to legal pressure vs not	0.18 *	0.64 *	0.68 *
<b>Treatment</b>			
Completed treatment plan vs not		-0.63	-0.60
LOS 1 week to 1 month vs < 1 month		-0.67	-0.18
LOS 1-6 months vs < 1 month		-0.56	-0.13
LOS more than 6 months vs < 1 month		-1.15	-0.68
Counselor understood client vs not		-0.44	-0.44
Used drugs during Tx vs not		1.50 *	1.09
Facility revenue per patient		0.00	0.00
Facility revenue above median vs below		-0.44	-0.37
Residential vs inpatient		-0.67	0.79 *
Methadone vs inpatient		-0.49	0.00
Outpatient nonmethadone vs inpatient		-0.74	-0.58
<b>Post-Treatment</b>			
Had more treatment after Tx vs not			<b>0.04</b>
<b>Attended AA/NA/CA after Tx vs not</b>			<b>-0.17</b>

\* Significant at  $p < .05$ ; LOS = Length of Stay.

Table B-SO. Correlates of cocaine use in the five years after treatment (Tx) —  
 Results of OLS regression models  
 [SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

	MODEL 1	MODEL 2	MODEL 3
Multiple R-Squared	0.24	0.25	0.26
Observations Used in Analysis	1,750	1,400	1,372
Weighted Count	945,948	787,047	771,741
<b>INDEPENDENT VARIABLES</b>			
	<b>Coefficient:</b>		
Intercept	1.23	1.57	1.36
<b>Pre-Treatment</b>			
Age in years (linear)	-0.06	-0.02	-0.04
Age in years squared (nonlinear)	0.00	0.00	0.00
Days/month used alcohol before Tx	0.00	-0.01	-0.01
Days/month used marijuana before Tx	0.02	0.02	0.01
Days/month used crack before Tx	0.01	-0.01	-0.01
Days/month used cocaine before Tx	0.30 *	0.30 *	0.29 *
Days/month used heroin before Tx	0.14 *	0.13 *	0.12 *
Male vs female	0.27	0.52	0.52
Black vs white	0.84	0.83	0.94
Hispanic vs white	1.33	1.13	0.80
Other race vs white	0.37	0.36	0.38
Entered Tx due to legal pressure vs not	0.06	0.04	0.04
<b>Treatment</b>			
Completed treatment plan vs not		-0.69	-0.72
LOS 1 week to 1 month vs < 1 month		-0.61	-0.43
LOS 1-6 months vs < 1 month		-0.41	-0.33
LOS more than 6 months vs < 1 month		-1.61 *	-1.49 *
Counselor understood client vs not		-0.27	-0.35
Used drugs during Tx vs not		1.59 *	1.53 *
Facility revenue per patient		0.00	0.00
Facility revenue above median vs below		-0.22	-0.15
Residential vs inpatient		-0.06	0.27
Methadone vs inpatient		0.40	0.02
Outpatient nonmethadone vs inpatient		0.11	0.25
<b>Post-Treatment</b>			
Had more treatment after Tx vs not			0.78
Attended AA/NA/CA after Tx vs not			0.54

\* Significant at p<.05; LOS - Length of Stay.

Table B-51. Correlates of heroin use in the five years after treatment (Tx) —  
Results of OLS regression models

~~ISROS sampled 3,047 clients discharged from drug treatment in 1989-1990~~

	MODEL 1	MODEL 2	MODEL 3
Multiple R-Squared	0.49	0.48	0.46
Observations Used in Analysis	1,749	1,399	1,371
Weighted Count	944,001	784,937	769,631
INDEPENDENT VARIABLES			
	<b>Coefficients</b>		
Intercept	-0.58	-0.43	-0.43
Pre-Treatment			
Age in years (linear)	0.04	0.14 *	0.13
Age in years squared (nonlinear)	0.00	0.00	0.00
Days/month used alcohol before Tx	-0.01	-0.01	-0.01
Days/month used marijuana before Tx	0.01	<b>0.00</b>	<b>0.00</b>
Days/month used crack before Tx	-0.02	-0.02	-0.03
Days/month used cocaine before Tx	0.04	0.04	0.04
Days/month used heroin before Tx	0.58 *	0.56 *	0.54 *
Male vs female	0.04	0.07	0.06
Black vs white	0.46	0.51	0.55
Hispanic vs white	0.77	0.59	0.41
Other race vs white	0.56	0.76	0.77
Entered Tx due to legal pressure vs not	<b>0.00</b>	-0.50 *	-0.52 *
Treatment			
Completed treatment <b>plan</b> vs not		<b>-1.16 *</b>	<b>-1.13 *</b>
LOS 1 week to 1 month vs < 1 month		-0.31	-0.35
LOS 1-6 months vs < 1 month		-0.12	-0.10
LOS more than 6 months vs < 1 month		0.06	0.17
Counselor understood client vs not		0.47 *	0.39
Used drugs during Tx vs not		0.63 *	0.64 *
Facility revenue per patient		0.00 *	0.00 *
Facility revenue above median vs below		0.41	0.47
Residential vs inpatient		-0.37	0.16
Methadone vs inpatient		-1.20	0.01
Outpatient nonmethadone vs inpatient		<b>-1.12</b>	-0.42
Post-Treatment			
Had more treatment after Tx vs not			<b>-0.99</b>
<b>Attended AA/NA/CA after Tx vs not</b>			<b>-1.00</b>

\* Significant at **p<.05**; LOS - Length of Stay.

Table B-52. Correlates of drug selling in the five years after treatment (Tx) —  
Results of logistic regression models

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

	MODEL 1	MODEL 2	MODEL 3
Multiple R-Squared	0.31	0.35	0.35
Observations Used in Analysis	1,777	1,424	1,392
Weighted Count	957,382	797,924	779,973
<b>INDEPENDENT VARIABLES</b>			
	<b>Odds ratios<sup>1</sup></b>		
<b>Pre-Treatment</b>			
Age in years (linear)	0.84 *	0.84 *	0.83 *
Age in years squared (nonlinear)	1.00 *	1.00 *	1.00 *
Sell drugs before Tx vs not	10.49 *	9.49 *	9.68 *
Prostitution before Tx vs not	0.99	1.06	1.01
Larceny before Tx vs not	1.75 *	1.84 *	1.79 *
Break/enter before Tx vs not	1.22	1.15	1.16
Male vs female	1.42 *	1.62 *	1.54 *
Black vs white	1.54 *	1.65 *	1.67 *
Hispanic vs white	1.16	0.90	0.88
Other race vs white	1.02	0.74	0.74
Entered Tx due to legal pressure vs not	1.04	1.13	1.11
<b>Treatment</b>			
Completed treatment plan vs not		0.92	0.90
LOS 1 week to 1 month vs <1 week		0.59 *	0.68
LOS 1-6 months vs <1 week		0.41 *	0.45 *
LOS more than 6 months vs <1 week		0.26 *	0.28 *
Counselor understood client vs not		1.06	1.05
Used drugs during Tx vs not		2.80 *	2.80 *
Facility revenue per patient		1.00	1.00
Facility revenue above median vs below		1.16	1.15
Residential vs inpatient		1.04	1.09
Methadone vs inpatient		1.40	1.39
Outpatient nonmethadone vs inpatient		1.31	1.40
<b>Post-Treatment</b>			
Had more treatment after Tx vs not			1.11 *
Attended AA/NA/CA after Tx vs not			1.00

<sup>1</sup> An odds ratio above 1.00 means drug selling becomes more likely; an odds ratio below 1.00 means drug selling becomes less likely. \* Significant at p<.05; LOS - Length of Stay.

Table B-53. Correlates of prostitution/procurement in the five years after treatment (Tx)—Results of logistic regression models

**ISROS sampled 3,047 clients discharged from drug treatment in 1989-1990**

	MODEL 1	MODEL 2	MODEL 3
Multiple R-Squared	0.33	0.4	0.41
Observations Used in Analysis	1,777	1,424	1,392
Weighted Count	957,382	797,924	779,973
INDEPENDENT VARIABLES			
	<b>Odds ratios<sup>1</sup></b>		
Pre-Treatment			
Age in years (linear)	1.01	1.01	0.99
Age in years squared (nonlinear)	1.00	1.00	1.00
Sell drugs before Tx vs not	1.06	0.80	0.79
Prostitution before Tx vs not	24.78 *	33.45 *	30.27 *
Larceny before Tx vs not	1.09	0.97	0.88
Break/enter before Tx vs not	1.95 *	2.48 *	2.75 *
Male vs female	0.61	0.45 *	0.41 *
Black vs white	3.10 *	2.83 *	3.13 *
Hispanic vs white	0.84	0.92	0.79
Other race vs white	0.07 *	0.03 *	0.03 *
Entered Tx due to legal pressure vs not	1.03	1.32	1.34
Treatment			
Completed treatment vs not		1.08	1.03
LOS 1 week to 1 month vs <1 week		0.31 *	0.37 *
LOS 1-6 months vs <1 week		0.16 *	0.18 *
LOS more than 6 months vs <1 week		0.14 *	0.18 *
Counselor understood client vs not		0.88	0.86
Used drugs during Tx vs not		2.59 *	2.41 *
Facility revenue per patient		1.00	1.00
Facility revenue above median vs below		1.77	1.90
Residential vs inpatient		1.21	1.34
Methadone vs inpatient		1.28	1.25
Outpatient nonmethadone vs inpatient		0.65	0.69
Post-Treatment			
Had more treatment after Tx vs not			1.13 *
<b>Attended AA/NA/CA after Tx vs not</b>			<b>1.01</b>

<sup>1</sup> An odds ratio above 1.00 means prostitution/procurement becomes more likely; an odds ratio below 1.00 means prostitution/procurement becomes less likely. \* Significant at p<.05; LOS = Length of Stay.

Table B-54. Correlates of larceny/theft in the five years after treatment (Tx) —  
Results of logistic regression models

[SROS sampled 3,047 clients discharged from drug treatment in 1989-1990]

	MODEL 1	MODEL 2	MODEL 3
Multiple R-Squared	0.23	0.25	0.29
Observations Used in Analysis	1,774	1,423	1,391
Weighted Count	956,660	797,412	779,462
<b>INDEPENDENT VARIABLES</b>			
	<b>Odds ratios<sup>1</sup></b>		
<b>Pre-Treatment</b>			
Age in years (linear)	1.04	1.05	1.00
Age in years squared (nonlinear)	1.00	1.00	1.00
Sell drugs before Tx vs not	1.01	0.73	0.68
Prostitution before Tx vs not	1.57 *	1.39	1.17
Larceny before Tx vs not	6.96 *	7.03 *	6.89 *
Break/enter before Tx vs not	2.08 *	2.03 *	2.14 *
Male vs female	1.14	1.28	1.25
Black vs white	1.42	1.22	1.40
Hispanic vs white	0.74	0.54	0.47
Other race vs white	1.77	1.48	1.57
Entered Tx due to legal pressure vs not	1.14	1.11	1.04
<b>Treatment</b>			
Completed treatment plan vs not		0.93	0.92
LOS 1 week to 1 month vs <1 week		0.41 *	0.53
LOS 1-6 months vs <1 week		0.64	0.81
LOS more than 6 months vs CI week		0.33 *	0.41 *
Counselor understood client vs not		1.00	0.98
Used drugs during Tx vs not		2.25 *	2.12 *
Facility revenue per patient		1.00	1.00
Facility revenue above median vs below		1.17	1.20
Residential vs inpatient		1.06	1.16
Methadone vs inpatient		1.19	1.20
Outpatient nonmethadone vs inpatient		0.39 *	0.44 *
<b>Post-Treatment</b>			
Had more treatment after Tx vs not			1.23 *
Attended AA/NA/CA after Tx vs not			1.02 *

<sup>1</sup> An odds ratio above 1.00 means larceny/theft becomes more likely; an odds ratio below 1.00 means larceny/theft becomes less likely. \* Significant at p<.05; LOS - Length of Stay.

Table B-55. Correlates of breaking and entering in the five years after treatment (Tx) -Results of logistic regression models

**ISROS sampled 3,047 clients discharged from drug treatment in 1989-1990]**

	MODEL 1	MODEL 2	MODEL 3
Multiple R-Squared	0.27	0.28	0.36
Observations Used in Analysis	1,777	1,424	1,392
Weighted Count	957,382	797,924	779,973
INDEPENDENT VARIABLES			
	<b>Odds ratios.<sup>1</sup></b>		
Pre-Treatment			
Age in years (linear)	0.86	0.88	0.82
Age in years squared (nonlinear)	1.00	1.00	1.00
<b>Sell</b> drugs before Tx vs not	1.36	1.35	1.43
Prostitution before Tx vs not	3.10 *	2.89 *	2.66 *
Larceny before Tx vs not	1.68	1.92 *	1.45
Break/enter before Tx vs not	7.39 *	6.17 *	8.58 *
Male vs female	2.20 *	2.25 *	2.20 *
Black vs white	1.88 *	2.01 *	2.72 *
Hispanic vs white	0.72	1.08	0.88
Other race vs white	0.18	0.29	0.28
Entered Tx due to legal pressure vs not	1.27 *	1.13	1.07
Treatment			
Completed treatment plan vs not		0.77	0.75
LOS 1 week top 1 month vs < 1 week		0.39 *	0.58
LOS 1-6 months vs < 1 week		0.61	0.89
LOS more than 6 months vs < 1 week		0.77	1.13
Counselor understood client vs not		0.99	0.92
Used drugs during Tx vs not		2.16	1.97
Facility revenue <b>per</b> patient		1.00	1.00
Facility revenue above median vs below		0.50	0.44
Residential vs inpatient		1.03	1.08
Methadone vs inpatient		1.14	1.30
Outpatient nonmethadone vs inpatient		0.76	1.01
Post-Treatment			
Had more treatment after Tx vs not			1.27 *
<b>Attended AA/NA/CA after Tx vs not</b>			<b>1.02 *</b>

<sup>1</sup> An odds ratio above 1.00 means breaking and entering becomes more likely; an odds ratio below 1.00 means breaking and entering becomes less likely. \* Significant at **p<.05**; LOS - Length of Stay.

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DHHS Publication No. (SMA) 98-3177  
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Printed 1998