



The University of Memphis
Satish Kedia

Tennessee Outcomes for Alcohol and Drug Services (TOADS) Project



**Substance Abuse
Treatment Effectiveness
in Tennessee:
2004-2005
Statewide Treatment
Outcomes Evaluation**

Institute for Substance Abuse Treatment Evaluation
The University of Memphis

Bureau of Alcohol and Drug Abuse Services
Tennessee Department of Health



Substance Abuse Treatment Effectiveness in Tennessee 2004–2005: Statewide Treatment Outcomes Evaluation

Satish Kedia, PhD

with assistance from

Heidi Kenaga, PhD
Priyanka Jani, MS

Institute for Substance Abuse Treatment Evaluation (I-SATE)
The University of Memphis

in partnership with the

Bureau of Alcohol and Drug Abuse Services
Tennessee Department of Health

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Phil Bredesen

Governor
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Kenneth S. Robinson, MD

Commissioner
Tennessee Department of Health

Stephanie W. Perry, MD

Assistant Commissioner
Bureau of Alcohol and Drug Abuse Services

Pam Sylakowski

Deputy to the Assistant Commissioner
Bureau of Alcohol and Drug Abuse Services

Herb Stone

Director, Treatment Services and Program Design
Bureau of Alcohol and Drug Abuse Services

Gwen Shanks

Director, Finance and Systems
Bureau of Alcohol and Drug Abuse Services

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Table of Contents

List of Tables	vii
List of Figures	viii
EXECUTIVE SUMMARY	1
CHAPTER 1	
Introduction	7
1.1 What is the SAPT Block Grant?	7
1.2 What are the goals of this outcomes evaluation report?	7
1.3 What are the goals of publicly funded substance abuse treatment in Tennessee?	8
1.4 What is the role played by the Bureau of Alcohol and Drug Abuse Services in Tennessee?	8
1.5 What are the sources of support for substance abuse treatment in Tennessee, and how much is spent by the state on treatment and evaluation?	9
1.6 How are substance abuse and addiction defined?	9
1.7 What procedures are used by facility staff for the assessment, placement, and supervision of clients?	10
1.8 What are the kinds of treatment services received by publicly funded clients?	11
1.9 What are the current substance abuse trends in the United States?	11
1.10 What are the current substance abuse trends among specific populations in the United States?	12
1.11 What are the current substance abuse trends in Tennessee?	13
1.12 What are the current substance abuse trends among specific populations in Tennessee?	15
1.12a Males/females	15
1.12b African Americans	15
1.12c Youth	15
1.12d Rural/urban residents	15
1.12e Pregnant women	16
CHAPTER 2	
Outcomes Evaluation Methodology	17
2.1 What was the research design used by I-SATE to conduct this outcomes evaluation?	17
2.2 How was admission and follow-up data gathered?	17
2.3 How was the study population determined?	19
2.3a Inclusion criteria	19
2.3b Exclusion criteria	19
2.4 What were features of those clients who were excluded or did not complete interviews?	20
2.5 How was the data in this report analyzed?	20
2.6 Were there limitations to this study?	22
2.7 How was the reliability of clients' self-reports assessed?	22

CHAPTER 3	
Substance Abuse Treatment Outcomes	25
3.1 What were the demographic characteristics of the study population?	25
3.2 What was a typical client substance abuse history?	27
3.2a Age of first substance abuse	27
3.2b Substance abuse by family members	27
3.3 What were common treatment features at a publicly funded facility?	28
3.3a Primary reason for treatment	28
3.3b Waiting period to begin treatment	29
3.3c Type and length of care	30
3.3d Level of treatment completion	31
3.3e Services and skills received	31
3.4 How many clients participated in AA/NA or aftercare upon completing treatment?	32
3.4a Participation in AA/NA	32
3.4b Participation in aftercare	33
3.5 What were clients’ overall perceptions of treatment?	34
3.6 What were the levels of reduction in alcohol and/or drug abuse achieved by the 2004–05 study population, and how did they compare with those of previous years?	34
3.6a For the overall study population	34
3.6b For specific demographic groups	36
3.6c For different treatment modalities	37
3.6d For clients participating in AA/NA or aftercare	38
3.7 What was the level of tobacco use following treatment?	39
3.8 What did quality of life measures at the six-month follow-up reveal?	40
3.8a Employment	40
3.8b Living situation	41
3.8c Incidence of arrest	42
3.9 What was the impact of treatment on clients’ involvement in domestic violence?	43
3.10 What was the effect of treatment on clients’ mental and physical health?	44
CHAPTER 4	
National and State Level Trends in Substance Abuse Treatment Effectiveness	45
4.1 What does research conducted at the national level demonstrate about the effectiveness of substance abuse treatment?	45
4.2 Does research conducted by individual states demonstrate the effectiveness of substance abuse treatment?	46
CHAPTER 5	
Conclusion	51
5.1 How successful is publicly funded substance abuse treatment in Tennessee?	51
5.2 What are clients’ perceptions about their treatment experiences?	52
5.3 What is the burden of untreated substance abuse in the United States?	52
5.4 Does substance abuse treatment lead to cost savings for individual states?	55
References	57
Tennessee Agencies Funded by the Bureau of Alcohol and Drug Abuse Services	63

List of Tables

1.1	Revenue Sources for Substance Abuse Services in Tennessee for Fiscal Years 2002–03, 2003–04, and 2004–05	9
1.2	Substance Abuse Expenditures by Service Area in Tennessee for Fiscal Years 2002–03, 2003–04, and 2004–05	9
2.1	Number of Telephone Attempts for Completing Interviews	17
2.2	Determination of TOADS Study Population for the Last Three Years	20
2.3	Non-Response Analysis for Clients Who Consented to Participate (2004–05)	21
2.4	Client-Collateral Agreement and Disagreement	23
3.1	Client Demographics	25
3.2	Education and Income Levels	26
3.3	Clients’ Children and Dependents	26
3.4	Substance Abuse History	27
3.5	Living with a Substance Abuser after Treatment	27
3.6	Prior Treatment History	28
3.7	Accessing Treatment	29
3.8	Continuum of Care and Number of Days in Treatment	30
3.9	Level of Treatment Completion	31
3.10	Treatment Features	31
3.11	Frequency and Helpfulness of Participation in AA/NA	32
3.12	Frequency and Helpfulness of Participation in Aftercare	33
3.13	Perceived Helpfulness of Treatment	34
3.14	Alcohol and/or Drugs Abused at Admission and Six-month Follow-up	35
3.15	Alcohol and/or Drugs Abuse Frequency at Admission and Six-month Follow-up	35
3.16	Abstinence within Various Demographic Groups at Six-month Follow-up	36
3.17	Abstinence within Subgroups at Six-month Follow-up	37
3.18	Abstinence by Continuum of Care	37
3.19	Abstinence and Recidivism by Number of Days in Treatment	38
3.20	Abstinence by Participation in AA/NA and Aftercare	38
3.21	Tobacco Use at Six-month Follow-up	39
3.22	Employment Situation and Usual Occupation at Admission and Six-month Follow-up	40
3.23	Living Arrangement at Admission and Six-month Follow-up	41
3.24	Revoked Driver’s License and Reasons for Arrest since Treatment	42
3.25	Domestic Violence Involvement at Admission and Six-month Follow-up	43
3.26	Physical and Mental Health at Six-month Follow-up	44

List of Figures

3.1	Gender	25
3.2	Primary Reason for Being Treated	28
3.3	Court-Ordered Treatment	29
3.4	Participation in AA/NA	32
3.5	Participation in Aftercare	33
3.6	Abstinence and Recidivism at Six-month Follow-up	34
3.7	Tobacco Use at Six-month Follow-up	39
3.8	Performance at Work or School at Six-month Follow-up	41
3.9	Change in Homelessness	41
3.10	Arrest at Admission and Six-month Follow-up	42

Executive Summary

This report outlines the effectiveness of substance abuse treatment in Tennessee. The study population was admitted to treatment during 2004 and was funded by the federal government's Substance Abuse Prevention and Treatment (SAPT) Block Grant. This grant provides support to states, territories, and the District of Columbia for the planning, implementation, and evaluation of alcohol and drug abuse treatment and prevention. The Tennessee Department of Health's Bureau of Alcohol and Drug Abuse Services is the sole state authority that receives and allocates SAPT funding to treatment providers in the state.

Clients in this assessment participated in five modalities of care: outpatient, intensive outpatient, halfway house, residential rehabilitation, and/or detoxification. Upon their admission to a treatment facility, clients were asked by staff to voluntarily participate in this 6-month follow-up evaluation study. While intake staff gathered admission data from consenting clients, I-SATE interviewers collected follow-up data via telephone 6 months after admission. The eligible follow-up sample comprised 3,057 individuals, 81.9% of whom (n=2,505) completed interviews. A complete discussion of the outcomes evaluation methodology used by I-SATE can be found in chapter 2.

What follows is a summary of this report's findings, comparing 2004–05 outcomes with those in 2 previous years, 2002–03 and 2003–04, for the following areas: client demographics, substance abuse history, treatment features, and treatment outcomes, including recidivism rates and quality of life indicators.

Client demographics

- In 2004–05, slightly less than one third (30.3%) of clients were female versus 69.7% male, a proportion that has remained fairly consistent across 3 years. White clients (72.9%) again outnumbered African Americans (26.1%) and those who identified themselves as “other,” mainly Native American or Hispanic (1.1%); this reflects a steady increase in White enrollment since 2002–03. Adult clients (94.6%) were by far the majority versus those 17 and younger (5.4%), similar to previous years.
- Most clients (68.7%) had attended high school, a fifth (20.0%) had attended college, and a very small percentage had attended only middle school (2.2%). These percentages are close to those seen in the 2 previous years. In terms of income, during the year before follow-up about half (46.0%) earned \$2,000 or less, another half (47.8%) between \$2,001 and \$25,000, and a few (6.3%) earned more than \$25,000. Again, these proportions approximate those in 2002–03 and 2003–04.

- In 2004–05, a little more than half (55.5%) of clients had at least one child, the majority of whom (85.8%) were minors. These proportions are similar to those seen in 2002–03 and 2003–04, although since 2002, there has been a slight increase in the percentage of clients who reported having no dependents (56.9%, 58.5%, 59.6%).

Substance abuse history

- Two thirds of clients (67.4%) in the current study year began using substances prior to the age of 17, a finding that accords with the previous 2 years' research. About the same percentage (69.0%) reported having a family member who abused drugs or alcohol, most commonly a parent (39.8%), other relative (35.7%), or sibling (30.1%). After treatment, nearly all clients (94.7%) were not living with a substance abuser, a proportion that has stayed at 92% or higher since 2002.

Treatment features

- In 2004–05, a greater percentage of clients (35.1%) were being treated for drug abuse than in the previous 2 years; correspondingly, the rates for alcohol/drug (32.8%) or alcohol only (22.4%) treatment declined somewhat in the current study year. A little less than a tenth (9.7%) had received a dual diagnosis, that is, treatment for both mental illness and substance abuse problems; this proportion has been on the decline as well.
- Almost two fifths (38.5%) were required to attend treatment by court order. Slightly more than half (52.9%) had to wait for treatment, a rate that has been on the rise (45.4% in 2002–03, 48.7% in 2003–04). While most clients reported a 1 to 7 day wait (40.0%), the proportion of those waiting 8 to 14 days and 15 to 21 days increased.
- In terms of modality, in the current study year about half (47.0%) received residential treatment, about a fourth (23.0%) received outpatient, and less than a fourth (15.9%) received detox/residential. The rates are similar to those seen in the previous 2 years.
- With regard to treatment duration, a 16 to 30 day stay was again the most common (31.5%), followed by 31 to 60 days (19.9%) and 91 to 180 days (13.9%); the smallest percentage (5.9%) stayed 181+ days. In addition, three fourths (74.6%) of clients completed all their treatment, and a little more than a tenth (11.7%) finished less than half. Treatment completion levels have remained fairly steady over the 3 study years.
- The vast majority of clients (85.7%) in the 2004–05 study population received skills training. Of these, 92.6% developed relapse prevention skills and 77.3% worked on coping skills. About a fifth (21.8%) participated in cultural competency classes, and slightly less (17.8%) attended vocational skills classes. These percentages are similar to those seen in the previous 2 years.

- As in prior years, many clients in recovery attended Alcoholics Anonymous/Narcotics Anonymous (AA/NA); in each of the 3 study years approximately two thirds of clients (66.5%) attended AA/NA meetings, and significant proportions went often. For example, in 2004–05, 38.8% of clients went once or twice a week, and roughly a third (32.7%) went several times a week. Consistently, clients reported satisfaction with AA/NA meetings. More than three quarters (77.8%) found such meetings “very helpful,” and another fifth (17.7%) “somewhat helpful,” rates which were comparable to those found in the 2 previous study years.
- About a fifth (22.7%) of clients in the current study year attended after-care activities, two thirds (65.0%) of whom participated once or twice a week. Most clients (65.2%) found such activities “very helpful,” and another fourth (18.6%), “somewhat helpful.” In both 2002–03 and 2003–04, clients reported comparable rates.
- Of the 2004–05 study population, a majority (77.2%) found their treatment “very helpful,” and a little less than a fifth (16.1%) described it as “somewhat helpful.” The 2002–03 and 2003–04 study populations reported similarly high levels of treatment satisfaction.

Treatment outcomes

- In the current study year, a little more than two thirds of clients (68.6%) were abstinent 6 months after admission, a rate comparable with those found in the 2 previous study years: 66.2% in 2002–03 and 65.1% in 2003–04. There were significant declines in abuse of all substances: alcohol abuse decreased from 63.0% at admission to 22.9% at follow-up; cocaine abuse, from 40.6% to 9.7%; marijuana abuse, from 33.7% to 6.3%; and opiates/narcotics abuse, from 18.5% to 5.3%. Even more dramatic declines were seen in the less commonly abused substances: sedatives/hypnotics, from 8.8% to 1.7%; stimulants/amphetamines, from 9.6% to 1.6%; and hallucinogens and inhalants abuse dropped to 0.0%.
- There was a significant decrease in the frequency of abuse as well: 66.1% of clients at admission reported using alcohol or drugs daily, whereas by the time of the follow-up interview, this percentage declined to 19.5%. Even the percentage of those clients who said they abused substances several times a week dropped from 13.8% to 4.3%.
- In terms of abstinence rates across demographic groups, in 2004–05 once again more female than male clients (69.9% vs. 68.1%) reported abstinence, although the margin was less than it has been in previous years (in 2002–03, 69.0% vs. 65.0% and in 2003–04, 67.7% vs. 64.0%). African American clients achieved the highest rates (70.8%), with those of other ethnicities reporting a 68.6% rate and Whites a 67.9% rate; the “other” category has fluctuated across the 3 years. Age was a category that has shown consistency: youth reported higher abstinence rates than adult clients (75.0% vs. 68.3%), similar to rates seen in 2002–03 and 2003–04. In the current study year and in 2003–04, having more education was not

necessarily correlated with abstinence, as clients with a middle school education reported a higher rate (76.4%) than those who had attended high school (68.9%) or college (66.9%). In 2002–03, those with a high school education reported the highest rate (66.3%), followed closely by college (65.8%).

- Among subgroups, the highest abstinence rates in the current study year were reported by pregnant women (84.2%), adolescents (75.0%), veterans (72.1%), and African Americans (70.8%); however, no subgroup rate was lower than 69.1%. In each of the 3 study years, pregnant women and adolescents achieved the highest rates, but there was variation among the other subgroups. Still, the lowest abstinence rate reported by any subgroup in 3 years was 57.7% (dual diagnosis clients in 2003–04).
- In 2004–05, clients enrolled in a combination of residential/outpatient services achieved the highest abstinence rate, 75.4%, a figure that has been on the rise across the 3 years of the study. Outpatient clients reported a 71.4% rate, another proportion that has increased. Generally speaking, in 2 of the 3 years, clients in detox combined with some other modality reported the lowest rates, although in 2003–04 detox/outpatients achieved a 70.6% rate, the highest that year.
- As in previous years, abstinence rates tended to increase the longer the client stayed in treatment: for example, 58.4% of those enrolled at a facility 1 to 6 days and 56.4% of those in treatment 7 to 15 days reported abstinence 6 months after admission, compared with 77.9% of those who were in treatment 91 to 180 days and 73.0% of those in treatment 180 days or more. This correlation was seen in 2002–03 and 2003–04 as well.
- Once again, participation in AA/NA and aftercare was positively correlated with abstinence rates. Of those participating in aftercare, on average three fourths (73.9% in 2002–03, 76.3% in 2003–04, and 79.1% in 2004–05) reported abstinence, and among AA/NA participants slightly lower numbers were found for abstinence (69.5% in 2002–03, 69.9% in 2003–04, and 73.5% in 2004–05).
- I-SATE research for all 3 years of the study demonstrates the significant impact of treatment on clients' employment status. The percentage of those working full-time tripled, from 15.0% at admission to 46.0% at follow-up, and those who were working part-time more than tripled, from 3.8% to 12.9%. Those listing their usual occupation as "skilled worker" rose from 24.1% to 32.6%, and as "professional" from 5.9% to 8.2%. These increases are similar to those seen in 2002–03 and 2003–04. In addition, once again about two thirds of clients (67.8%) reported that their work or school performance had improved since treatment.
- I-SATE research for all 3 years also confirms treatment's positive effect on clients' living arrangements. Whereas at admission almost half of clients (45.6%) reported living with relatives other than their immediate family, by the 6-month follow-up this percentage had dropped to 10.6%. Correspondingly, before treatment only 12.3% lived with their immediate family, but after treatment 47.6% did so. This effect was evi-

dent in 2002–03 and 2003–04 as well. Further, at the 6-month follow-up, only 0.7% of clients in the current study year reported being homeless, compared with 8.1% at admission; similar declines were seen in the 2 previous years.

- In 2004–05, by the 6-month follow-up only 9.9% of clients had been arrested, compared with well over half (62.1%) at admission; marked declines were seen in 2002–03 and 2003–04 as well. Of those who had been arrested by the follow-up, across the 3 years the most commonly identified reasons included parole/probation violation (on average approximately 15%), followed by driving under the influence (approximately 10%), disorderly conduct/vagrancy/public intoxication (approximately 9%), and a major driving violation (approximately 8%).
- As in previous years, in the current study year there were sharp declines in clients' involvement in domestic violence, as both perpetrator and victim. At admission, 15.6% of clients had committed such violence and 22.0% had been the victim; by the follow-up, these rates dropped to 1.8% and 2.5%, respectively.
- More than four fifths of clients in the study population each year reported that they were in better physical health since treatment: 80.3% in 2002–03, 84.2% in 2003–04, and 84.2% again in 2004–05. Roughly half of the clients described their overall health status as “excellent” or “very good,” with another third describing it as “good.” Another consistency found by I-SATE is the frequency of psychological difficulties reported by clients. Each year, a little less than half said that, in the 30 days before the follow-up interview, they had experienced a mental health problem, most commonly serious anxiety or tension (on average approximately 63%), serious depression (on average approximately 61%), or trouble understanding concepts, concentrating, or remembering (on average approximately 30%).

I-SATE's research clearly demonstrates that clients in Tennessee benefit from substance abuse treatment in multiple ways: achieving abstinence or significantly reducing their frequency of abuse, finding full- or part-time employment, decreasing their involvement in criminal activity, returning to more stable living situations, and experiencing improved physical health.

Preview of Report

Substance Abuse Treatment Effectiveness in Tennessee 2004–2005: Statewide Treatment Outcomes Evaluation is organized into seven sections: chapter 1 comprises a statement of the evaluation's goals, a definition of substance abuse as used in this report, a brief description of the state's substance abuse treatment protocols, and an overview of national and state substance abuse trends; chapter 2 describes the methodology employed by I-SATE staff to produce this outcomes evaluation; chapter 3 reports on client demographics, treatment features, treatment outcomes and performance indicators, and quality of life measures; chapter 4 examines how various states have found treatment to be more effective than punitive measures such as incarceration; chapter 5 comprises a short summary of

treatment outcomes, a discussion of the burden that untreated substance abuse represents, and the proven cost-effectiveness of treatment. The report concludes with references and a list of those treatment providers funded by the Bureau of Alcohol and Drug Abuse Services.

Introduction

Chapter 1

This chapter addresses the goals of this evaluation, describes the types of treatment services available in Tennessee, and provides a brief overview of national and state substance abuse trends.

This report was produced by the Tennessee Outcomes for Alcohol and Drug Services (TOADS), under the auspices of the Institute for Substance Abuse Treatment Evaluation (I-SATE) at The University of Memphis. TOADS has been evaluating client outcomes across various performance indicators and disseminating the results to a variety of stakeholders, including treatment providers and policymakers, for the last 15 years. It is funded by the Bureau of Alcohol and Drug Abuse Services, Tennessee Department of Health (hereafter, the Bureau).

1.1 What is the SAPT Block Grant?

In 1988, the Comprehensive Alcohol Abuse, Drug Abuse, and Mental Health Amendments established the Substance Abuse Prevention and Treatment (SAPT) Block Grant for treatment, prevention, and data collection on clients receiving treatment for either alcohol or drug abuse from facilities supported through a SAPT Block Grant (Substance Abuse and Mental Health Services Administration, 2000, pp. 3–4).

At present, the U.S. government allocates SAPT Block Grants to all 50 states, 8 territories, the District of Columbia, and certain Native American tribes to help public health professionals plan, implement, and evaluate alcohol and drug abuse treatment and prevention. In addition, SAPT funds provide assessment for substance abuse clients with concomitant conditions, such as HIV/AIDS, tuberculosis, and Hepatitis B or C; for pregnant women or those with dependent children; and for adolescents. The SAPT Block Grant constitutes around 40% (sometimes more) of those public funds used by states for substance abuse treatment and prevention (Substance Abuse and Mental Health Services Administration, 2004d).

1.2 What are the goals of this outcomes evaluation report?

In accord with the SAPT Block Grant directive, this report seeks “to assess and improve, through independent peer review, the quality and appropriateness of treatment services delivered by providers that receive funds from the Block Grant” (Substance Abuse and Mental Health Services Administration, 2004b, p. 35). In addition, this report helps support the provision of substance abuse treatment for all Tennesseans in need by providing empirical evidence of treatment effectiveness. To fulfill specific program objectives, this outcomes evaluation has the following four goals:

The SAPT Block Grant helps state and local authorities in the United States plan, implement, and evaluate substance abuse treatment and prevention.

1. assessment of the overall effectiveness of treatment through various performance indicators, focusing on the nine primary goals of substance abuse treatment in Tennessee (as described in section 1.3);
2. measurement of treatment effectiveness for special programs and populations;
3. identification of those “best practices” currently implemented by treatment facilities as well as those areas in need of improvement; and
4. documentation of the cost-effectiveness of substance abuse treatment.

1.3 What are the goals of publicly funded substance abuse treatment in Tennessee?

The Bureau has established nine goals for substance abuse treatment:

1. to help clients abstain from or reduce their use of alcohol and/or drugs;
2. to reduce clients’ involvement in illegal activities and thereby reduce criminal justice expenditures;
3. to increase clients’ employment and productivity;
4. to improve clients’ family and community lives;
5. to enhance clients’ relationships with others;
6. to facilitate clients’ living in a stable environment;
7. to improve clients’ mental and physical health;
8. to expand clients’ life management skills to improve their quality of life; and
9. to decrease substance abuse-related costs to society.

1.4 What is the role played by the Bureau of Alcohol and Drug Abuse Services in Tennessee?

The Bureau is the sole state authority that dispenses funds allocated by federal, state, and other public sources for alcohol and drug abuse treatment and prevention. It is the Bureau’s mission to reduce substance abuse among all Tennessee residents by promoting prevention efforts, reducing the incidence of high-risk behaviors through community programs and intervention, and ensuring treatment services for all. This includes providing payment for such services for those state residents whose alcohol and drug abuse treatment is not covered by TennCare (the state’s managed care plan for under- or uninsured residents), other health insurance, or personal resources. I-SATE is a key component of the Bureau’s performance-based evaluation system, as its evaluation affects the development of treatment services and influences policy decisions concerning substance abuse treatment across the state.

Substance abuse is defined as the intentional use of alcohol or illicit drugs for pleasure, coping, or self-medication that results in a pattern of negative consequences in one or more areas of an individual’s life.

1.5 What are the sources of support for substance abuse treatment in Tennessee, and how much is spent by the state on treatment and evaluation?

For the fiscal year 2004–05, the budget of the Bureau of Alcohol and Drug Abuse Services was \$53,197,800. Most of these funds (75%) were allocated by the federal government. Tennessee received \$40.1 million in federal funds, which includes \$5.9 million allocated for the Tennessee Access to Recovery (TN-ATR) program. An additional 17.2% came from the state, and 7.5% came from ADAT funds (see Table 1.1). Nearly 74% of the total budget (\$39,324,300) was earmarked for the support of substance abuse treatment in the state (see Table 1.2).

Table 1.1: Revenue Sources for Substance Abuse Services in Tennessee for Fiscal Years 2002–03, 2003–04, and 2004–05

	2002–03 (\$47.1 million)		2003–04 (\$44.9 million)		2004–05 (\$53.2 million)	
Total budget						
Source of Funds	\$ (in millions) (approx.)	% ^a	\$ (in millions) (approx.)	% ^a	\$ (in millions) (approx.)	% ^a
Federal funds	35.1	74.5	33.9	75.6	40.1	75.3
State funds	9.0	19.0	8.0	17.7	9.1	17.2
ADAT funds	3.0	6.4	3.0	6.7	4.0	7.5

Note: 2004–05 budget includes an ATR Federal Grant.

^a Values may not add up to 100% because of rounding.

Table 1.2: Substance Abuse Expenditures by Service Area in Tennessee for Fiscal Years 2002–03, 2003–04, and 2004–05

	2002–03 (\$47.1 million)		2003–04 (\$44.9 million)		2004–05 (\$53.2 million)	
Total budget						
Service Areas	\$ (in millions) (approx.)	% ^a	\$ (in millions) (approx.)	% ^a	\$ (in millions) (approx.)	% ^a
Treatment	33.0	70.0	32.0	71.3	39.3	73.9
Prevention	9.6	20.4	9.0	20.1	9.1	17.1
Administration	2.4	5.1	2.1	4.6	2.6	4.9
Training and evaluation	2.1	4.5	1.8	4.0	2.2	4.1

Note: 2004–05 budget includes an ATR Federal Grant.

^a Values may not add up to 100% because of rounding.

1.6 How are substance abuse and addiction defined?

Prior to a discussion of substance abuse trends in the United States and state-wide, it would be helpful to define the terms abuse and addiction, which the layperson often regards as interchangeable. For public health professionals, *substance abuse* is defined as the intentional use of alcohol and/or illicit drugs for

pleasure, coping, or self-medication that results in a pattern of negative consequences in one or more areas of an individual's life functioning. An individual's recurrent use of a substance that results in failure to fulfill major responsibilities, legal problems, risk to self or others, and/or social or interpersonal problems is indicative of substance abuse. *Addiction* is understood as a primary, chronic, progressive, and relapsing disease characterized by craving, loss of control, and denial that results in harm to the individual who nonetheless continues to use the substance despite these adverse effects. In this outcomes evaluation report, we use the term substance abuse as defined above.

It is indisputable that substance abuse and addiction can adversely impact an individual's physical and mental health, productivity and financial stability, and personal and social relationships; it also may lead to criminal behavior. At present, research suggests that, although substance abuse and addiction have genetic and physiological bases related to changes in brain chemistry, they are also influenced by behavioral and environmental factors.

1.7 What procedures are used by facility staff for the assessment, placement, and supervision of clients?

As part of the admission process, intake staff assess clients using the Addiction Severity Index (ASI) and designate their level of care based on the criteria established by the American Society of Addiction Medicine (ASAM). The rationale for any treatment plan is to help individuals abstain over the long term while also addressing other problems related to their substance abuse.

In order to assign the client to the proper level of care, counselors consider the six assessment components established by ASAM. Dimension 1 assesses a client's substance abuse history to determine the probable intensity of withdrawal symptoms and level of monitoring required during detoxification. Dimension 2 determines whether there are factors in the client's medical history that might undermine treatment. Dimension 3 identifies those psychiatric/psychological issues that may impede treatment and thus need to be addressed as part of the client's substance abuse program. Dimension 4 measures the client's degree of acceptance of or resistance to treatment. Dimension 5 analyzes the client's potential for relapse and return to substance abuse. Finally, Dimension 6 considers elements of the client's surroundings that might encourage or inhibit his or her involvement in treatment, such as social environment, family, education level, employment, or legal resources or obligations.

Facility counselors interview each client in order to design an individualized approach to treatment, asking him or her about substance abuse problems, physical and mental health conditions that might interfere with treatment, the strength of the client's support system, and the client's motivation to engage in the treatment process. Together, the counselor and client plan a series of treatment milestones.

Staff periodically review a client's services in order to gauge his or her response to treatment and anticipated outcome; depending on the level of severity, a client may be shifted to a lower or higher level of treatment or discharged from treatment altogether.

During admission, facility staff assess clients' needs and assign them to an appropriate level of care, based on criteria established by the American Society of Addiction Medicine.

1.8 What are the kinds of treatment services received by publicly funded clients?

Clients are assigned to one of five treatment modalities: outpatient, intensive outpatient, halfway house, residential rehabilitation, or detoxification. They may receive individual therapy and/or group counseling involving 6 to 12 clients. If a client faces mental health problems in tandem with substance abuse challenges, treatment may include a dual-diagnosis approach. Descriptions of the care provided in the various treatment modalities are detailed in the Bureau's program requirements (2004) and the ASAM Patient Placement Criteria for the Treatment of Substance-Related Disorders (Mee-Lee, Shulman, Fishman, Gastfriend, & Griffith, 2001).

1.9 What are the current substance abuse trends in the United States?

According to the 2003 National Survey on Drug Use and Health (NSDUH), Americans are using or abusing drugs and alcohol at alarming rates. Approximately 119 million (50.1%) Americans identified themselves as current alcohol drinkers. About 54 million (22.6%) reported that they had participated in binge drinking, defined as having five or more drinks on the same occasion at least once in the 30 days prior to the interview; 16.1 million (6.8%) described themselves as heavy drinkers, defined as having five or more drinks on the same occasion on at least five different days in the past 30 days before the survey (Substance Abuse and Mental Health Services Administration, 2004c).

The NSDUH report also estimated that 13.6% of Americans 12 and older (approximately 32.3 million persons) drove under the influence of alcohol at least once in the year before the interview (Substance Abuse and Mental Health Services Administration, 2004c).

In 2003, an estimated 21.6 million Americans (9.1% of the total population age 12 or over) were classified as dependent on or abusing drugs and/or alcohol. Most of these individuals (14.8 million) were dependent on or abusing alcohol alone, while 3.8 million were dependent on or abusing illicit drugs. Another 3.1 million people were dependent on or abusing some combination of alcohol and drugs (Substance Abuse and Mental Health Services Administration, 2004c).

According to the NSDUH survey, nearly 19.5 million Americans, or 8.2% of those age 12 or older, were illicit drug users, that is, they had used such substances at least once during the 30 days before the survey. This represents no change from the previous year's survey. Marijuana, with 14.6 million current users, was the most commonly used drug. Over 2 million survey participants reported using cocaine (604,000 of whom used it in crack form); 1.0 million, hallucinogens; 470,000, Ecstasy; and 119,000, heroin. Approximately 6.3 million reported non-medical use of psychotherapeutic drugs: 4.7 million used pain relievers; 1.8 million, tranquilizers; 1.2 million, stimulants; and 0.3 million, sedatives. There was a significant increase in the lifetime nonmedical use of pain relievers; for example, whereas in 2002 1.9 million people reported using OxyContin, in 2003 this number rose to 2.8 million.

In 2003, approximately 21.6 million Americans were classified as dependent on or abusing drugs and/or alcohol.

According to “Pulse Check,” a federal report surveying substance abuse experts in major U.S. cities, more than 77% described the drug problem in their region as “very serious.”

According to the National Center for Health Statistics (2005), nearly one third of those 18 to 24 years of age (male and female) reported excessive drinking behavior—defined as having had five or more drinks in one day at least once in the past year. In all four of the age groups assessed, non-Hispanic White males were most likely to have engaged in such drinking than any other demographic group.

Since 1992, the White House’s Office of National Drug Control Policy has published “Pulse Check,” a report on the latest trends in drug abuse and drug markets in major U.S. cities. It regularly tracks marijuana, heroin, crack/powder cocaine, and methamphetamine use and also monitors Ecstasy, OxyContin, and other substances whose use may be on the rise. In addition, “Pulse Check” describes emerging drugs, new routes of administration, and shifts in use patterns, as well as drug-related criminal activity, treatment demand, and alterations in supply and distribution patterns in specific localities. Researchers conduct interviews with four knowledgeable individuals from each city—one law enforcement source, one ethnographer/epidemiologist, and two treatment providers (one from a methadone treatment center and one from a nonmethadone treatment center, where available)—in order to develop a comprehensive picture of the local drug situation that will keep policymakers up-to-date on emerging problems concerning access to various drugs and the changing context of their use. In the most recent issue of “Pulse Check,” more than two thirds (66%) of those interviewed saw no lessening in the nation’s drug problem in the fall of 2002 compared with the spring of 2002 (Office of National Drug Control Policy, 2004, p. 4).

More than three quarters (77%) of all respondents described the drug problem in their locality as “very serious,” and more than a fifth (23%) said that it was “somewhat serious” for the same period (p. 4). When asked which drugs were emerging or becoming even more of a problem, sources in 16 cities identified MDMA or “Ecstasy”; experts in 15 cities identified methamphetamine, while those in 8 cities considered it “to be the drug contributing to the most serious consequences”; and sources in 15 cities cited OxyContin (p. 5).

1.10 What are the current substance abuse trends among specific populations in the United States?

SAMHSA’s Office of Applied Studies periodically publishes brief reports on aspects of substance abuse in the United States, such as demographic analyses of client admissions to publicly funded treatment facilities and trends in alcohol and drug use among specific populations. A 2002 DASIS report found that in 1999, alcohol was the substance of choice among African American males, whereas cocaine abuse was most common among African American females. However, between 1994 and 1999, admissions of African American males for alcohol abuse declined, as did the percentage of admissions of African American females abusing cocaine. During this period, there was a 15% decline in overall admissions for both male and female African Americans; admissions for the entire treatment population for the same period increased 3% (Office of Applied Studies, 2002, p. 3).

A recent NSDUH study on gender differences in drug use found that in 2003, males age 12 or older were twice as likely to be dependent on or abusing substances than females.

A 2004 NSDUH report on gender differences in substance abuse found that, in 2003, males age 12 or older were twice as likely to be dependent on or abusing substances than females; however, among both males and females 18 to 49, being married, living with children, and engaged in employment were correlated with lower rates of alcohol and drug dependence (Office of Applied Studies, 2004a).

In research on women’s abuse of substances derived from the 2002 and 2003 annual National Surveys on Drug Use and Health, SAMHSA found that in the 30 days prior to the survey, 4.3% of pregnant women reported using illicit drugs, 4.1% engaged in binge drinking, and 18% smoked cigarettes. Still, these rates are lower than those reported by nonpregnant females and those who had not given birth within a year of the survey (Office of Applied Studies, 2005).

In regard to adolescents, a study of clients age 12 to 17 admitted to treatment facilities from 1992 to 2002 found a 65% increase in the rate of youth admissions, in comparison with a 23% general increase. The proportion of adolescent clients reporting abuse of marijuana rose from 23% to 64% during this time period, which SAMHSA saw as the cause for the overall increase in adolescent admissions (Office of Applied Studies, 2004b).

A recent report on drug use and attitudes among the nation’s youth, “Monitoring the Future: National Results on Adolescent Drug Use” (MTF), surveyed 43,700 youth in the 8th, 10th, and 12th grades (Johnston, O’Malley, & Bachman, 2003). Researchers found that substance abuse had declined in most categories: for the first time since 1998, for example, Ecstasy was less common in all three grades, with the annual prevalence dropping 20% (p. 3). For this study population, marijuana use was down, although this decrease was only statistically significant among 10th grade students. Eighth and 10th grade students reported lower levels of amphetamine use, but 12th grade students maintained the very high levels evident in the past few years. Eighth grade students were using methamphetamine less, but this substance remained prevalent among students in the upper grades. All students showed a fairly steady decline in the use of inhalants, with a particularly striking 40% drop among 8th graders from a peak rate in the mid-1990s. The MTF researchers found increases in the use of tranquilizers and barbiturates, but this rise was evident only in the 12th grade group (pp. 3–4).

A study of treatment admissions for abuse of narcotic painkillers (including morphine and any drug with morphine-like effects, such as codeine and Oxycodone) in rural and urban areas of the U.S. revealed an overall increase of 155% between 1992 and 2002. However, the most rural locations saw the greatest rates of increase: in nonmetropolitan areas without a city of 10,000 or more in population, abuse of painkillers rose 269% (Office of Applied Studies, 2004c).

1.11 What are the current substance abuse trends in Tennessee?

In 1998, the Community Health Research Group at the University of Tennessee-Knoxville conducted the Tennessee Health and Lifestyles Survey to gauge patterns of substance use and abuse in the state. The sample size comprised 11,155 adult residents: 4,144 (37%) male and 7,011 (63%) female; 10,289 (92.2%) White, 537 (4.8%) African American, and 329 (2.9%) of other backgrounds (Community Health Research Group, 2000, p. 7).

According to a recent NSDUH report on drug use among pregnant women, 4.3% reported using illicit drugs and 4.1% engaged in binge drinking at least once in the month prior to the survey.

In very rural areas of the United States, abuse of painkillers such as codeine and Oxycodone rose 269% in 10 years.

The study population reported using alcohol and marijuana most often. More than three fourths (79.5%) had used alcohol at some point in their life. Half (52.5%) had consumed alcohol in the past year, and 36% had done so in the month prior to the survey (Community Health Research Group, 2000, p. 2). A little under a third (29%) reported using marijuana at least once in their life, 5% in the previous year, and 2.6% in the month before the survey. Respondents reported using other substances: hallucinogens at a rate of 6%, inhalants at 2%, and heroin at 0.9% (pp. 2–3). Twelve percent were addicted to or dependent on heroin; 11.5%, to cocaine/crack; 11%, to inhalants; 8%, to alcohol; and 8%, to marijuana (p. 3). Survey participants reported lifetime usage rates for medically prescribed psychoactive drugs such as painkillers at 60%, tranquilizers at 27%, sedatives at 16%, and stimulants at 9.5%.

According to state estimates of substance abuse published by SAMHSA in 2004, approximately 7.9% of residents in Tennessee age 12 or older (381,000 persons) were dependent on or abused illicit drugs or alcohol in the year prior to the survey. About 6.0% (286,000) were dependent on or abused alcohol, and 2.8% (134,000) on illicit drugs (Wright & Sathe, 2005, pp. 135, 139, 143).

A SAMHSA-sponsored IMPACT study of substance abuse among Tennessee youth, conducted jointly by Vanderbilt University’s Center for Mental Health Policy, Tennessee Voices for Children, and the Tennessee Commission on Children and Youth, reported that at least one fifth of the state’s adolescents (about 106,000) were using or dependent on substances (Heflinger & Flowers, 2002). The challenge has been to get youth who are abusing alcohol and drugs into treatment.

I-SATE has conducted a number of smaller studies on substance abuse trends and outcomes for the general client population as well as specific demographic groups in Tennessee (Kedia, 2004). Recently, I-SATE examined 7 years of admission data (1998–2004) to discern current substance abuse trends among clients, derived from unduplicated clients and their reported abuse of multiple substances. The total study population comprised 69,981 clients, for an average population of 9,984 individuals each year.

The research found that in each of the 7 study years alcohol was the most commonly abused drug. In 1998, 68.5% of clients abused alcohol, a percentage that decreased to 60.6% in 2003 but then rose again to 63.3% in 2004. Cocaine was the second most commonly abused drug, but there was also a general decline across the study period, from 44.2% in 1998 to 38.0% in 2004. Rates for the third most abused substance, marijuana, remained more consistent, but again I-SATE found a downward trend, from 39.7% in 1998 to 32.0% in 2004.

Due to the epidemic of OxyContin and methamphetamine abuse in Tennessee, across the 7 years opiate rates more than doubled from 7.41% to 16.8% and stimulant rates tripled from 2.9% to 8.8%.

I-SATE’s research has found that, among Tennessee clients admitted to publicly funded treatment, abuse of stimulants (such as methamphetamine) tripled from 1998 to 2004.

1.12 What are the current substance abuse trends among specific populations in Tennessee?

1.12a Males/females

I-SATE's research on trends across 7 years of admission data found that abuse of opiates and stimulants is increasing among both male and female clients admitted to publicly funded treatment facilities across the state. For males, opiate rates shot up from 6.3% in 1998 to 15.6% in 2004; for females, from 9.8% in 1998 to 19.6% in 2004. And whereas only 2.8% of males were using stimulants in 1998, this number increased to nearly 8.5% in 2004. Rates among females tripled, from 3.0% in 1998 to 9.6% in 2004.

1.12b African Americans

African Americans reported that cocaine rather than alcohol was their substance of choice from 1998 to 2004, averaging approximately 71.3% each year. The second most abused substance was alcohol, averaging 64.4% each year, and the third, marijuana/hashish, was used on average by 40.5% each year. There has been little fluctuation in the rates of these three substances across the 7-year study period. However, I-SATE found a rise in the percentage of African American clients reporting abuse of opiates/narcotics, rising from 2.3% in 1998 to 3.8% in 2004; the rise was most marked between 2001 (n=74, 2.64%) and 2002 (n=111, 3.84%), a 50% increase.

1.12c Youth

I-SATE's 7-year study of client admissions between 1998 and 2004 revealed that marijuana abuse was a bigger problem among youth than adults. In 1998, nearly 79% of adolescents reported using marijuana. The rate steadily decreased during the subsequent 4 years to 59.0% in 2001; after a 2-year spike up to 66.9% and 63.57%, in the most recent study year (2004) the rate dropped to its lowest ever, 53.8%. For the first time, adolescent clients reported abusing alcohol (54.6%) more than marijuana. In addition, abuse of "club drugs" such as Ecstasy and Ketamine almost tripled from 1998 (5.0%) to 2002 (13.1%), although the last 2 years saw a decline, down to 7.8% in 2004. I-SATE found that only cocaine rates dropped across the 7-year period for this demographic group, from 13.8% in 1998 to 6.7% in 2004.

1.12d Rural/urban residents

In accord with SAMHSA's national data (reported above), I-SATE found an especially alarming rise in the rates of opiates/narcotics (such as OxyContin) abuse among rural clients: 7.9% in 1998 compared with 20.7% in 2004. Rates of amphetamine/stimulant abuse also rose significantly in this demographic group, from 3.9% in 1998 to 12.8% in 2004. There were increases in the rates of abuse of these substances among urban clients, although not as striking: whereas 7.0% reported abusing opiates/narcotics in 1998, by 2004 this percentage had risen to 12.3%; likewise, rates of stimulant abuse more than doubled, from 1.9% to 4.0% across the 7 years.

Marijuana abuse is much more common among adolescents than adult clients, and from 1998 to 2004 youth abuse of "club drugs" such as Ecstasy almost tripled.

1.12e Pregnant women

From 1998 to 2004, cocaine, marijuana, and alcohol were the three most commonly abused substances by pregnant clients receiving publicly funded treatment in Tennessee. I-SATE's multi-year research found significant increases in the abuse of two types of substances among this group, particularly in the first 6 years of the study. Opiates/narcotics rates shot up from 8.9% in 1998 to 21.2% in 2003, although there was a decline in 2004 to 11.8%; amphetamines/stimulants skyrocketed from 3.3% in 1998 to 26.7% in 2002, with a subsequent decline to 13.2% in 2004. With some fluctuation in rates, there has been a general decline in the abuse of cocaine from 60.0% in 1998 to 51.5% in 2004; greater fluctuation has been seen in marijuana and alcohol, but rates for the former averaged 53.6% and for the latter 40.7% across the 7 years.

Outcomes Evaluation Methodology

Chapter 2

This chapter describes the outcomes evaluation methodology: research design, data gathering, study population, data analysis, nonresponse bias, and study limitations.

2.1 What was the research design used by I-SATE to conduct this outcomes evaluation?

I-SATE used a pre- and post-test design: at the time of admission, facility staff collected pre-test data from clients; I-SATE staff collected post-test data via telephone interview 6 months after clients' admission to treatment.

2.2 How was admission and follow-up data gathered?

All substance abuse treatment facilities in Tennessee funded by the SAPT Block Grant are required to collect data from clients at the time of intake. Facility staff use software called Insight-CH developed by QS Technologies, Inc., to gather this data, and the Bureau's information technology division compiles it into a statewide data system called Admis-PC.

The Insight-CH software has specific modules for alcohol and drug admission and discharge data, which allow entry of client demographics as well as information about their economic and occupational circumstances, living arrangement, referrals to treatment, substance abuse history and patterns of abuse, route(s) of administration, arrest record and legal status, physical and mental health, medical history and conditions, and prescribed therapies. This admission data serves as a baseline to which the follow-up data are compared for the purposes of outcomes evaluation.

To perform the outcomes evaluation, I-SATE interviewers collected follow-up data using a structured questionnaire 6 months after clients were admitted to treatment. Interviewers tried to contact clients via telephone (making a minimum of seven attempts: three during the day, three in the evening, and one over the weekend) to successfully complete an interview. In 2004–05 about one fifth (22.6%) of the follow-up interviews with clients were completed on the first attempt. While the second attempt resulted in almost one fourth (23.9%) of completed interviews, the greatest (39.9%) success was attained during the third, fourth, or fifth attempts; 13.6% of completed interviews took six or more phone calls. In general, the average number of attempts has risen in the last 3 years (see Table 2.1),

I-SATE staff had the greatest success in completing interviews with clients during the 3rd, 4th, or 5th attempt to contact them by phone.

Table 2.1: Number of Telephone Attempts for Completing Interviews

	2002–03	2003–04	2004–05
Attempts	% ^a n=2,095	% ^a n=2,142	% ^a n=2,505
1st attempt	27.4	26.6	22.6
2nd attempt	25.0	25.3	23.9
3rd, 4th, or 5th attempt	35.7	38.0	39.9
6 or more attempts	11.8	10.2	13.6

^a Values may not add up to 100% because of rounding.

possibly the result of new telephone technologies that permit easy identification and/or screening of callers and increased use of cell phones.

I-SATE researchers developed the TOADS follow-up questionnaire to meet the standards set by the Government Performance and Results Act (GPRA); the Center for Substance Abuse Treatment (CSAT); the Interstate Core Data Items, Treatment Outcomes and Performance Pilot Studies II (TOPPS II) Enhancement; and the SAPT Block Grant. This questionnaire is designed to yield a comprehensive view of the efficacy of publicly funded alcohol and drug abuse treatment. Outcomes performance indicators measure treatment outcomes, including information about client demographics, economic situation, aspects of treatment, alterations in substance abuse patterns, changes in physical and emotional health, and the incidence of arrests during the 6 months since admission to a facility.

In addition, interviewers gathered demographic information during the follow-up interview, including age, marital status, living arrangement, employment status, and usual occupation. They also asked clients whether they had any family members (specifically, parents or other relatives) who were involved in substance abuse.

Several questions pertained to the treatment experience: why clients had sought treatment, and how long they had to wait for treatment, if at all. Interviewers also asked clients to which treatment modalities they were assigned, the length of treatment, whether they had completed treatment, and if they received further treatment elsewhere. Other questions gathered information about any prior alcohol and/or drug abuse treatment. Interviewers also asked clients what type, if any, of special skills training they had received.

Clients responded to questions about the aftercare services offered by treatment centers or by some other organization: interviewers asked if and how frequently they participated in such services, and if so, how helpful they considered these activities to be. I-SATE staff then asked clients the same questions about their participation in Alcoholics Anonymous or Narcotics Anonymous (AA/NA). In addition, interviewers asked clients about how helpful they found their treatment experience, the reasons why they rated it the way they did, and whether they had any suggestions for ways to improve treatment and the facilities.

I-SATE staff asked clients whether they had abused alcohol and/or drugs since admission, including the 30 days before the follow-up interview, soliciting specific information about which substances clients abused and their frequency of substance abuse. In cases where clients had returned to substance abuse, interviewers documented reasons for their relapse. Interviewers also asked clients who had not returned to substance abuse about the length of time they had been abstinent. Additionally, clients stated whether treatment had enhanced their performance at work or school and whether they had been absent from work because of alcohol and drug problems in the 30 days prior to the follow-up interview. All the information clients shared about their drug and alcohol abuse since admission enabled I-SATE researchers to discern abstinence and recidivism patterns. Another question asked clients if they had used a tobacco product in the past 30 days and, if so, which one(s).

Counselors at treatment facilities gathered data from clients at the time of admission, and I-SATE interviewers collected follow-up data 6 months after admission.

Interviewers asked whether the client had been arrested since treatment, and if so, how many times, what the specific charges were, and the number of arrests per charge. Interviewers sought information about DUI convictions, including the number of times clients had been arrested for drinking and driving since treatment. Clients also responded to inquiries about their involvement in domestic violence, either as victim or perpetrator. Finally, the interviewers requested information about clients' physical and mental health in the 30 days prior to follow-up.

2.3 How was the study population determined?

I-SATE staff employed the nonprobability sampling method in selecting the follow-up study population. This method “involves recruiting all patients who meet the inclusion and exclusion criteria as they become available” (Portney & Watkins, 2000, p. 147). Because of the ongoing nature of the study, at no one point were all interviewees available for random sampling. Also, random sampling would have resulted in some agencies with few participating clients being poorly represented. Therefore, in order to maximize the evaluation results, all clients who voluntarily consented to participate were included.

To secure a comprehensive study population, I-SATE asked all treatment facilities funded by the SAPT Block Grant to seek their clients' consent to participate in this follow-up study. A total of 10,456 substance abuse clients were admitted for substance abuse treatment in Tennessee in 110 treatment facilities operated by 44 publicly funded vendors. Since this outcomes evaluation entailed follow-up interviews 6 months after admission for all clients admitted to treatment during the 2004 calendar year, interviewers collected data from clients between July 1, 2004, and June 30, 2005.

2.3a Inclusion criteria

1. The client's treatment was funded by the SAPT Block Grant, and
2. After the method and purpose of the study were explained by a counselor at the treatment facility, the client voluntarily consented to participate in the follow-up study.

2.3b Exclusion criteria

1. At the time of the follow-up interview, interviewers did not have a valid phone number for the client (e.g., phone number was incorrect, unpublished, or not in service), or
2. The client was institutionalized (e.g., in jail, state custody, a hospital, shelter, or group home), or
3. Continuing in treatment, or
4. The client initially agreed but then refused to be interviewed at the time of follow-up contact, or
5. The client was deceased.

I-SATE asked all treatment providers funded by a SAPT Grant to seek clients' consent to participate in the follow-up study.

Table 2.2: Determination of TOADS Study Population for the Last Three Years

Variable	2002–03	2003–04	2004–05
A. Clients who consented to participate	4,696	5,442	6,311
B. Excluded from the sample selection	1,866	2,745	3,254
Wrong ^a or no telephone number	1,381	2,251	2,630
Institutionalized ^b	241	287	347
Continuing in treatment	192	143	207
Refused to participate ^c	39	50	53
Deceased	13	14	17
C. Eligible follow-up sample	2,830	2,697	3,057
D. Follow-up interviews completed	2,095	2,142	2,505
E. Follow-up interviews not completed ^d	735	555	552
F. Eligible follow-up sample coverage rate (D/C)	74.0%	79.4%	81.9%

^a Wrong is defined as incorrect, unpublished, or not in service.

^b Institutionalized is defined as in jail, state custody, a hospital, shelter, or group home.

^c Refused to participate in the interview while on the phone with an interviewer.

^d Follow-up interviews could not be completed for a variety of reasons, e.g., some clients did not answer or return any of the interviewers' calls.

For the 2004 calendar year admissions, I-SATE completed interviews with 2,505 of the 3,057 eligible clients who consented to participate in the follow-up study; this resulted in an eligible sample coverage rate of 81.9%, a 3-year high (see Table 2.2). I-SATE determined the interview coverage rate following the prevailing practice in the literature (Gerstein & Johnson, 2000; Flynn, Craddock, Hubbard, Anderson, & Etheridge, 1997; and Flynn, Simpson, Anglin, & Hubbard, 2001).

2.4 What were features of those clients who were excluded or did not complete interviews?

In order to determine if there was a bias in those clients who were excluded or did not complete the interview, I-SATE researchers analyzed data on eight key demographic characteristics and treatment features for those clients who initially consented to participate. Staff compared the responses given by the 2,505 clients who completed interviews and the 3,806 who did not. Although the two groups appeared very similar in terms of demographic characteristics and treatment features, there were statistically significant differences between the two groups for four of the eight variables: ethnicity, marital status, education level, and employment status. For the remaining four variables (gender, age group, prior treatment history, and arrest record), the differences between the two were not statistically significant (see Table 2.3).

2.5 How were the data in this report analyzed?

I-SATE researchers integrated the admission data and the 6-month follow-up data using a combination of software: Microsoft Access, Microsoft Excel, Visual Basic, Statistical Package for the Social Sciences (SPSS), and Statistical Analysis System (SAS). For this report they analyzed the data using basic statistical measures, including frequencies, means, cross-tabulations, and multiple response

Comparing the responses of those clients who completed interviews with those who did not, I-SATE found significant differences for four variables: ethnicity, marital status, education level, and employment status.

Table 2.3: Non-Response Analysis for Clients Who Consented to Participate (2004–05)

Variable	Clients Who Completed Interviews	Clients Excluded or Who Did Not Complete Interviews	Chi-Square <i>p</i> value
	% n=2,505	% n=3,806	
Gender^a			0.070
Male	69.7	71.8	
Female	30.3	28.2	
Ethnicity^b			<0.001
White	72.9	71.7	
African American	26.1	26.4	
Other	1.1	1.1	
Missing values	0.0	0.7	
Age group^a			0.915
Youth	5.4	5.5	
Adult	94.6	94.5	
Marital status^b			0.003
Never married	48.1	49.3	
Married	13.9	13.2	
Separated/divorced/widowed	37.1	35.4	
Unknown	0.9	2.0	
Education level^b			0.048
Middle school	2.2	2.1	
High school	68.7	71.5	
College	20.0	17.3	
Missing values	9.1	9.1	
Employment status^b			0.005
Full-time	15.0	11.7	
Part-time	3.8	4.1	
Unemployed	65.2	67.2	
Student	6.0	5.8	
Other	5.9	6.3	
Missing values	4.1	5.0	
Prior treatment history^a			0.051
Yes	50.8	53.3	
No	49.2	46.7	
Arrest record^a			0.110
Yes	62.1	64.1	
No	37.9	35.9	

Note. Values represent mean percentages of the clients with each respective response. The percentages in some categories may not add up to exactly 100% because of rounding.

^a The distributions of the categories within each variable are not statistically significant at the $p < 0.05$ level using the Chi-square test.

^b The distributions of the categories within each variable are statistically significant at the $p < 0.05$ level using the Chi-square test.

analyses, in order to compare the clients' responses at the time of admission to those collected during the 6-month follow-up interviews. In addition, staff conducted various tests to determine levels of significance.

2.6 Were there limitations to this study?

Limitations are inherent to any outcomes research, especially in substance abuse treatment evaluation, given the nature of the study population. This evaluation study had the following limitations:

1. I-SATE could not collect follow-up data for all clients whose treatment was funded by the SAPT Block Grant.
2. Only those clients who consented to participate and could be reached via telephone 6 months after their admission were included in this study.
3. Because I-SATE generates vendor-level outcomes performance reports, the study population included all those clients who consented to participate in the study, rather than a study population obtained through random sampling. The goal was to maximize the number of clients who represented each participating vendor.
4. The clients exhibited a variety of substance abuse problems and received treatment in one or more of the five modalities (outpatient, intensive outpatient, halfway house, residential, or detoxification) for different lengths of time. As a result, these analyses can indicate only general trends regarding treatment effectiveness.
5. Data presented in this report were collected by two different sources: the treatment facilities gathered the admission data and I-SATE staff collected the follow-up data.
6. Since the follow-up data was collected 6 months after clients had been admitted to treatment instead of 6 months after they had been discharged, there were variations in the lengths of time that had passed since clients completed treatment or left the facility.
7. Both the admission and the follow-up data were based on clients' self-

2.7 How was the reliability of clients' self-reports assessed?

In order to assess client progress and gauge treatment effectiveness, a number of substance abuse treatment evaluation projects have relied upon post-treatment reports provided by clients themselves. While many studies have indicated such self-reports are fairly accurate, some researchers corroborate this data by comparing it with medical tests, criminal justice records, or (as I-SATE does) collateral sources. Collaterals are typically individuals who know the client well enough to describe substance abuse-related behaviors and thus provide independent confirmation of clients' reports. Still, questions remain regarding the accuracy of these collateral reports; for example, what is the proportion of agreement between clients and collaterals, and what is the probability that these levels of agreement are coincidental? Do clients and collaterals under- or overreport post-treatment behaviors? In an earlier study examining these issues, Kedia and

Only those clients who consented to participate and could be reached via telephone 6 months after their admission were included in this study.

Table 2.4: Client-Collateral Agreement and Disagreement (n = 1,610)

Client Characteristic	Agreement Proportion %	Disagreement Proportion %	Simple Kappa Coefficient (SE)*
Primarily treated for			
Substance abuse vs. Co-occurring ^a	73.71%	26.29%	.451 (.023)
Completion of treatment			
Yes vs. No	89.78%	10.22%	.660 (.025)
Participation in AA/NA ^b			
Yes vs. No	80.16%	19.84%	.554 (.023)
Participation in aftercare			
Yes vs. No	83.85%	16.15%	.574 (.026)
Substance abuse since treatment			
Abstinent vs. Recidivist	78.81%	21.19%	.451 (.025)
Arrested since treatment			
Yes vs. No	92.17%	7.83%	.523 (.037)
Currently on probation or parole			
Yes vs. No	88.77%	11.23%	.772 (.016)
Has valid driver's license			
Yes vs. No	92.97%	7.03%	.858 (.013)
Employment after treatment			
Employed vs. Unemployed	87.06%	12.94%	.740 (.017)
Current living arrangement			
With family vs. Other than family	90.55%	9.45%	.811 (.015)
Currently living with someone who abuses alcohol or drugs			
Yes vs. No	92.10%	7.79%	.351 (.049)
Uses tobacco products			
Yes vs. No	91.31%	8.69%	.727 (.022)
Has Children			
Yes vs. No	95.68%	4.32%	.914 (.010)

*All coefficients are significant at the $p < 0.001$ level of significance.

SE - Standard error of the statistic.

^a Combination of substance abuse and mental health treatment.

^b Alcoholics Anonymous or Narcotics Anonymous.

Perry (2005) found high levels of client-collateral agreement, at least 75% on all 13 questions and over 88% on 10 of them.

For this report, using 2004–05 evaluation research data, I-SATE calculated the simple kappa statistic to determine the degree of client-collateral agreement beyond chance (see Table 2.4). Values of this statistic range from -1 to 1. A kappa statistic with a value greater than 0 indicates agreement between the clients and collaterals, whereas a negative value indicates disagreement, and a value close to 0 means that there is just as much agreement as disagreement between clients and collaterals. While all kappa scores were positive, some characteristics had higher agreement between clients and collaterals. The following seven questions

had high kappa values (above 0.6), indicating excellent or substantial levels of agreement beyond chance between clients and collaterals: Completion of treatment (.660), Currently on probation or parole (.772), Has a valid driver's license (.858), Employment after treatment (.740), Current living arrangement (.811), Uses tobacco products (.727), and Has children (.914). Five client characteristics had moderate (0.4-0.6) agreement: Primarily treated for (.451), Participation in AA/NA (.554), Participation in aftercare (.574), Substance abuse since treatment (.451) and Arrested since treatment (.523). One question had lower (less than 0.4) agreement: Currently living with someone who abuses alcohol or drugs (.351). However, coefficients this low are still significant and do not indicate that the agreement was purely due to chance.

Kedia and Perry's study confirms the reliability of client self-reports and use of collateral sources to verify post-treatment behaviors, especially when clients know their information is being cross-checked with their collaterals.

Substance Abuse Treatment Outcomes

Chapter 3

This chapter provides information about client demographics, substance abuse history, treatment features, and outcomes for the 2004–05 study population.

3.1 What were the demographic characteristics of the study population?

Of the 2,505 clients in the 2004–05 study population, 69.7% were male and 30.3% were female, proportions that have been fairly consistent across the 3 years of the study (see Figure 3.1).

In 2004–05, almost three quarters of the study participants (72.9%) were White, slightly more than a fourth (26.1%) were African American, and a very small percentage (1.1%) belonged to other racial/ethnic groups, such as Native American or Hispanic. The last 3 years have seen a steady increase in the percentage of White clients: 64.6% in 2002–03, 67.8% in 2003–04, and 72.9% in 2004–05 (see Table 3.1).

Those receiving treatment were most commonly adults (94.6%) compared with youth (5.4%), and once again the 35 to 44 age range was predominant (30.5%). However, it

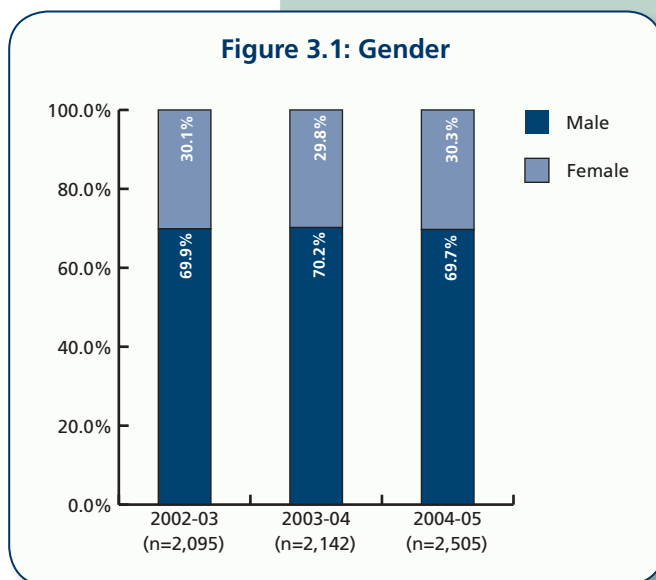


Table 3.1: Client Demographics

Variable	2002–03	2003–04	2004–05
	% ^a n=2,095	% ^a n=2,142	% ^a n=2,505
Ethnicity			
White	64.6	67.8	72.9
African American	34.2	31.3	26.1
Other	1.2	0.8	1.1
Age category			
Adult	93.1	95.2	94.6
Youth	6.9	4.8	5.4
Age group			
17 or younger	6.9	4.8	5.4
18–24	14.1	12.3	15.2
25–34	28.5	27.8	28.8
35–44	34.3	36.3	30.5
45–54	14.2	16.1	17.2
55 and above	2.0	2.8	2.8

^aValues may not add up to 100% because of rounding.

In the past 3 years, the proportion of African American clients has declined from over one third to slightly more than a fourth of all clients.

appears that the number of individuals in the 45 to 54 range (14.2% in 2002–03, 16.1% in 2003–04, and 17.2% in the current year) is on the rise (see Table 3.1).

As in the previous 2 years, clients with a high school education were much more common (68.7%). Exactly a fifth (20.0%) had attended college (see Table 3.2). Clients’ levels of income in the year prior to the follow-up fluctuated slightly in 2004–05 (see Table 3.2). However, over the 3 years of the study, nearly half of the clients each year were in the lowest bracket (\$2,000 or below).

In 2004–05, a little more than half of clients reported that they had at least one child (55.5%), and of these, 85.8% had children who were minors. Almost two thirds (59.6%) said they were not supporting anyone financially; a little less than a third (29.5%) had 1 to 2 dependents (see Table 3.3).

In 2004–05, almost half of clients reported earning \$2,000 or less the year before the follow-up interview.

Table 3.2: Education and Income Levels

Variable	2002–03	2003–04	2004–05
	% n=2,095	% n=2,142	% n=2,505
Education level			
Middle school	2.6	1.9	2.2
High school	71.2	67.5	68.7
College	19.4	20.4	20.0
Missing values	6.8	10.2	9.1
Level of income earned in the year before follow-up			
\$2,000 and below	45.9	40.9	46.0
\$2,001–\$8,500	21.9	24.8	21.8
\$8,501–\$15,000	15.4	14.8	14.0
\$15,001–\$25,000	11.0	12.3	12.0
Above \$25,000	5.8	7.2	6.3

Table 3.3: Clients’ Children and Dependents

Variable	2002–03	2003–04	2004–05
	% n=2,095	% n=2,142	% n=2,505
Has a child			
Yes	57.9	60.0	55.5
No	42.1	40.0	44.4
Has a child who is a minor^a			
Yes	83.6	79.8	85.8
No	16.1	20.1	14.2
Missing values	0.3	0.2	0.0
Number of dependents^b			
0	56.9	58.5	59.6
1–2	29.9	29.1	29.5
3–5	12.0	11.8	10.1
6 or more	1.2	0.7	0.8

^aBased on the percentage of those who reported having at least one child.

^bDependent includes all those (such as parents, spouse, sibling, children, foster children, etc.) who rely on the client financially.

3.2 What was a typical client substance abuse history?

3.2a Age of first substance abuse

On average, in the last 3 years nearly 70% of clients reported first abusing substances at age 17 or younger (73.5% in 2002–03, 65.8% in 2003–04, and 67.4% in 2004–05). About a fourth reported being between 18 and 30 years of age, and on average 4% of clients were 31 or older (see Table 3.4). As such, this research indicates that prevention efforts are best directed toward adolescents and young adults.

3.2b Substance abuse by family members

I-SATE research revealed another consistency across the 3 years: family involvement in substance abuse. When clients were asked if any other family members abused alcohol or drugs, on average more than two thirds of clients responded yes (see Table 3.4). Clients may have had more than one family member who abused substances, but during the past three study periods it was most commonly a parent (38.8% in 2002–03, 39.4% in 2003–04, and 39.8% in the current year), an individual designated as “other relative” (34.8%, 32.1%, and 35.7%, respectively), and/or a sibling (29.2%, 29.6%, and 30.1%, respectively) (see Table 3.4).

A positive result found across all 3 years was that by the 6-month follow-up the majority of clients (more than 92% each year) were not living with a substance abuser (see Table 3.5).

Table 3.4: Substance Abuse History

Variable	2002–03	2003–04	2004–05
	% n=2,095	% n=2,142	% n=2,505
Age client began using substances			
17 or younger	73.5	65.8	67.4
18-30	23.0	27.3	25.1
31 or older	3.5	5.4	4.7
Missing values	0.0	1.5	2.8
Anyone else in client’s family who abused alcohol or drugs in the past			
Yes	67.1	67.8	69.0
No	32.9	32.2	31.0
Family members who abused substances^a			
Parent	38.8	39.4	39.8
Spouse	4.4	3.3	3.9
Significant other	5.5	5.4	5.8
Sibling	29.2	29.6	30.1
Children	1.3	1.3	1.6
Other relative	34.8	32.1	35.7

^aPercentages will add up to more than 100% because some clients gave multiple responses.

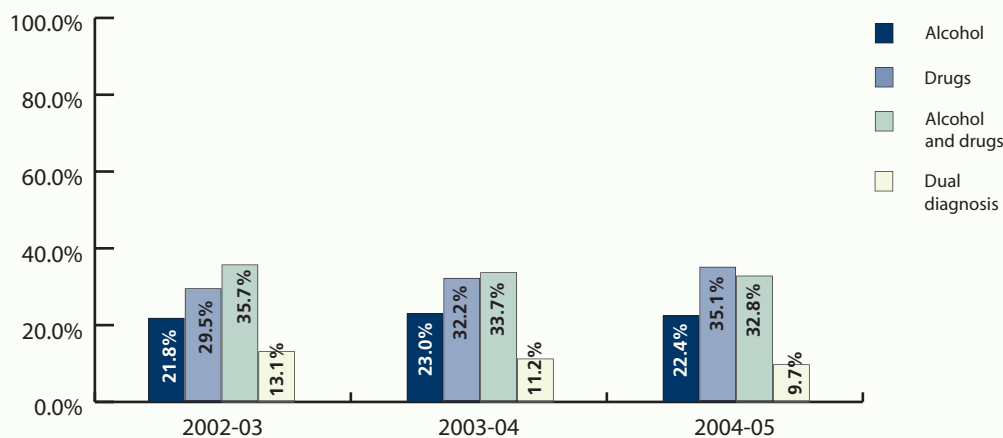
Table 3.5: Living with a Substance Abuser after Treatment

Variable	2002–03	2003–04	2004–05
	% n=2,095	% n=2,142	% n=2,505
Yes	7.3	5.3	5.3
No	92.7	94.7	94.7

On average, during the last 3 study years nearly 70% of clients reported first abusing substances at age 17 or younger.

3.3 What were common treatment features at a publicly funded facility?

Figure 3.2: Primary Reason for Being Treated



More than one third of clients in 2004–05 reported being in treatment for abuse of drugs, rather than alcohol or alcohol and drugs.

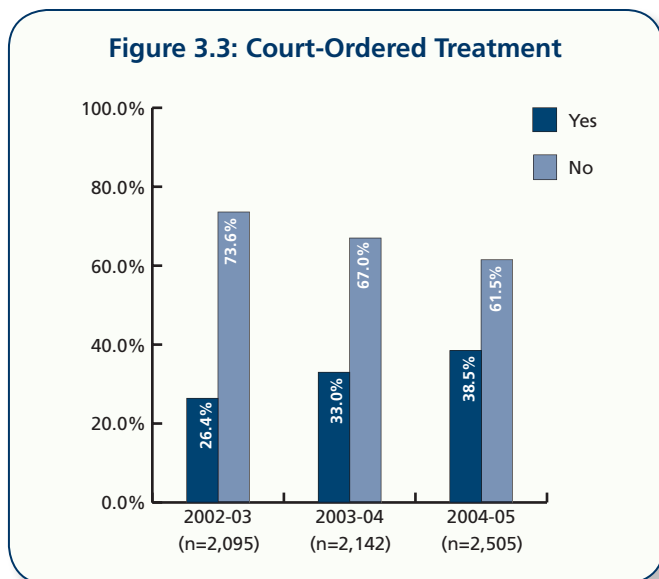
3.3a Primary reason for treatment

For the first time in 3 years, the primary reason for clients’ enrollment in treatment was an addiction to drugs (35.1%, up from 32.2% in 2003–04 and 29.5% in 2002–03) rather than alcohol and drugs combined (32.8%, down from 33.7% in 2003–04 and 35.7% in 2002–03). Another change was the decrease in the percentage of clients reporting having a dual diagnosis (i.e., substance abuse in addition to mental health problems): 13.1% in 2002–03, 11.2% in 2003–04, and 9.7% in 2004–05 (see Figure 3.2). For approximately one half of clients in the 2004–05 study population (50.8%), the current treatment episode was not their first. Very similar percentages were seen in 2002–03 (47.0%) and 2003–04 (51.5%) (see Table 3.6).

Table 3.6: Prior Treatment History

History	2002–03	2003–04	2004–05
	% n=2,095	% n=2,142	% n=2,505
Yes	47.0	51.5	50.8
No	53.0	48.5	49.2

In 2004–05, 38.5% of clients were ordered into treatment by the court (see Figure 3.3). This percentage fits a generally upward trend seen since 2002: in 2002–03, 26.4% and in 2003–04, 33.0% of clients were court ordered. This reflects the greater recognition by the criminal justice system of the importance of rehabilitation for substance abuse offenders.



Almost 40% of clients in the current study year were ordered into treatment by the court, an increase from 2002–03 and 2003–04.

3.3b Waiting period to begin treatment

In the last 3 years, the percentage of clients who had to wait to enter treatment increased, from 45.4% in 2002–03 to 48.7% in 2003–04 and 52.9% in 2004–05 (see Table 3.7). A cross-year comparison of the data suggests that, while a 1 to 7 day waiting period is still the most common (51.5%, 49.2%, and 40.0%), the proportion of those who have had to wait for longer periods is on the rise. For example, the percentage of those waiting 15 to 21 days increased from 7.6% in 2002–03 to 8.9% in 2003–04 to the present rate of 11.2% (see Table 3.7).

Variable	2002–03	2003–04	2004–05
	% ^a n=2,095	% ^a n=2,142	% ^a n=2,505
Had to wait for treatment			
Yes	45.4	48.7	52.9
No	54.6	51.3	47.1
Number of days before being admitted for treatment			
1-7	51.5	49.2	40.0
8-14	23.1	22.6	24.7
15-21	7.6	8.9	11.2
22-28	1.4	0.8	1.1
29-35	10.3	8.4	11.7
36 or more	6.2	10.1	11.2

^aValues may not add up to 100% because of rounding.

3.3c Type and length of care

Residential treatment was the most common (47.0%) type of modality received by clients in 2004–05. A little less than a fourth (23.0%) of clients were enrolled as outpatients, and 15.9% received a combination of detoxification and residential treatment. There has been some fluctuation in these rates across the 3 study years, but on average, approximately 40% of clients attended residential care, about a fourth were outpatients, and roughly a sixth were in detox/residential treatment (see Table 3.8).

A 16 to 30 day treatment duration is the most common: in 2002–03, 27.4% of clients were in treatment for this time period; in 2003–04, 32.7%; and in 2004–05, 31.5%. On average, in each of the 3 years of the study period, less than a fifth received 31 to 60 days of treatment. The percentage for 91 to 180 days of treatment has been dropping steadily, from 21.3% in 2002–03 to 17.5% in 2003–04 and then to 13.9% in the current study year (see Table 3.8).

Residential treatment remains the most prevalent type of client care; on average, about 40% of clients reported being treated in this modality in each of the study years.

Table 3.8: Continuum of Care and Number of Days in Treatment

Variable	2002–03	2003–04	2004–05
	% ^a n=2,095	% ^a n=2,142	% ^a n=2,505
Treatment modalities			
Residential	43.7	38.9	47.0
Outpatient	26.3	24.6	23.0
Detox/Residential	14.6	20.3	15.9
Residential/Outpatient	9.1	7.0	7.5
Detox/Residential/Outpatient	5.7	6.8	5.1
Detox/Outpatient	0.7	2.4	1.6
Days in treatment			
1-6	9.3	8.4	9.8
7-15	9.5	7.0	9.1
16-30	27.4	32.7	31.5
31-60	16.5	16.9	19.9
61-90	13.3	10.6	9.9
91-180	21.3	17.5	13.9
181 or more	2.7	6.9	5.9

^aValues may not add up to 100% because of rounding.

3.3d Level of treatment completion

On average, more than 75% of all clients complete the full course of treatment each year. Of the remainder, about 7% finish more than half of treatment, approximately 5% just half, and about one in ten complete less than half of treatment (see Table 3.9).

Table 3.9: Level of Treatment Completion

Treatment Completion	2002–03	2003–04	2004–05
	% n=2,095	% n=2,142	% n=2,505
Completed treatment	75.6	76.9	74.6
More than half	7.4	6.7	7.0
Half	5.3	4.6	6.7
Less than half	11.7	11.8	11.7

Research for the past 3 years indicates that three quarters of clients can be expected to complete treatment.

3.3e Services and skills received

In 2004–05, a majority of clients (85.7%) received some type of skills training while in treatment, a rate that has been on the rise (77.3% in 2002–03 and 84.4% in 2003–04) (see Table 3.10). Relapse prevention has been the most common, averaging more than 90% of all clients across the 3 years. Many took advantage of coping skills training as well, averaging approximately 80%. Other types of training clients received in 2004–05 included cultural competency (21.8%), which increased sharply in prevalence among clients between 2002–03 (7.2%) and 2003–04 (21.8%). Interest in vocational skills also rose during that time period, from 12.4% in 2002–03 and 17.9% in 2003–04 (see Table 3.10).

The vast majority of clients (averaging approximately 80% across the 3 study years) received some type of skills training while in treatment, most commonly relapse prevention skills and coping skills.

Table 3.10: Treatment Features

Variable	2002–03	2003–04	2004–05
	% n=2,095	% n=2,142	% n=2,505
Received skills training			
Yes	77.3	84.4	85.7
No	22.7	15.6	14.3
Type of skills acquired ^a			
Relapse prevention	94.6	94.0	92.6
Coping skills	79.0	82.4	77.3
Vocational skills	12.4	17.9	17.8
Cultural competency training	7.2	21.8	21.8
Other	2.0	2.8	4.7

^a Percentages will add up to more than 100% because some clients gave multiple responses.

3.4 How many clients participated in AA/NA or aftercare upon completing treatment?

3.4a Participation in AA/NA

More clients attended AA/NA than aftercare activities. About two thirds of the study population each year participated in AA/NA (see Figure 3.4). In terms of frequency of attendance, nearly two fifths (38.8%) in 2004–05 went to AA/NA meetings 1 to 2 times per week; slightly less than a third (32.7%) went several times a week; and 15.6% attended daily (see Table 3.11). These rates have remained about the same across the 3 years. A general trend evident among those clients who participate in AA/NA is the increasing percentage of those who found the meetings “very helpful”: in 2002–03, 73.4%; in 2003–04, 75.5%;

About two thirds of clients opt each year to attend AA/NA meetings, and three quarters found them “very helpful.”

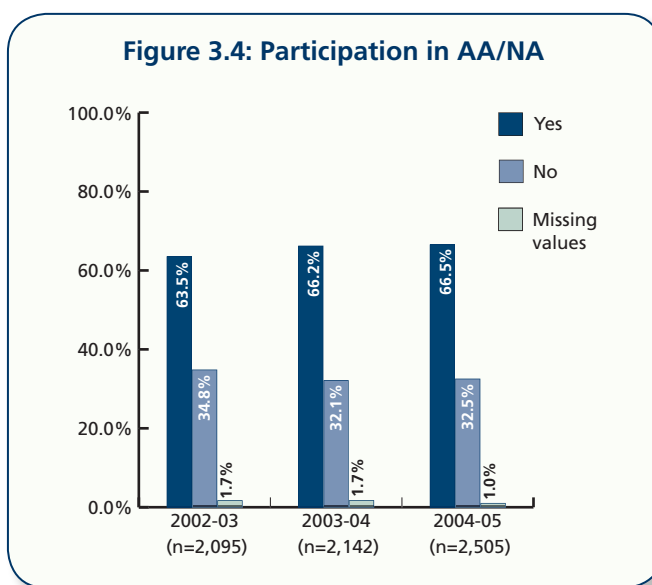


Table 3.11: Frequency and Helpfulness of Participation in AA/NA

Variable	2002–03	2003–04	2004–05
	% ^a n=2,095	% ^a n=2,142	% ^a n=2,505
Frequency of attendance			
Less than once per week	11.5	12.5	12.6
1 to 2 times per week	38.9	39.8	38.8
Several times per week	32.8	32.5	32.7
Daily	16.8	15.2	15.6
Missing values	0.0	0.0	0.3
Helpfulness			
Very helpful	73.4	75.5	77.8
Somewhat helpful	21.3	20.2	17.7
Not helpful at all	4.4	3.5	4.1
Missing values	0.9	0.8	0.5

^aValues may not add up to 100% because of rounding.

and in 2004–05, 77.8%. Correspondingly, fewer clients in each successive year said AA/NA was “somewhat helpful”: in 2002–03, 21.3%; in 2003–04, 20.2%; and in 2004–05, 17.7%.

3.4b Participation in aftercare

In contrast, a little over a fifth of clients (22.7%) participated in aftercare in 2004–05, a slight dip from the 2 previous years (23.4% in 2002–03 and 26.6% in 2003–04) (see Figure 3.5). On average across the 3 years, about two thirds attended 1 to 2 times per week; almost two thirds found aftercare “very helpful,” with a little more than a fifth describing it as “somewhat helpful” during the same time period (see Table 3.12).

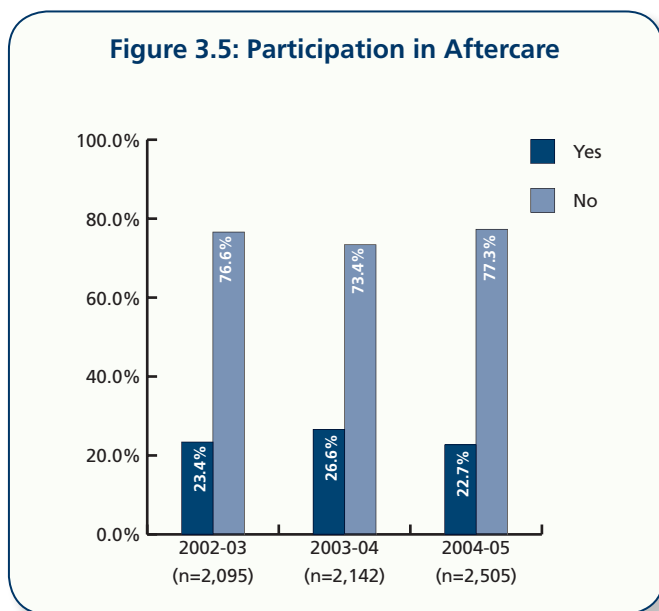


Table 3.12: Frequency and Helpfulness of Participation in Aftercare

Variable	2002–03	2003–04	2004–05
	% n=2,095	% n=2,142	% n=2,505
Frequency of attendance			
Less than once per week	14.5	10.7	14.8
1 to 2 times per week	59.4	70.9	65.0
Several times per week	18.8	15.1	12.1
Daily	7.3	3.3	5.6
Missing values	0.0	0.0	2.5
Helpfulness of aftercare			
Very helpful	66.3	64.9	65.2
Somewhat helpful	23.7	25.6	18.6
Not helpful at all	5.7	4.9	7.2
Missing values	4.3	4.6	9.0

3.5 What were clients’ overall perceptions of treatment?

I-SATE interviewers asked clients to rate the helpfulness of their treatment. Across the 3 years, the proportion of clients who found their treatment “very helpful” increased: in 2002–03, 70.2%; in 2003–04, 75.4%; and in 2004–05, 77.2%. Correspondingly, the proportion of those rating treatment as “somewhat helpful” declined from 22.1% in 2002–03, 17.3% in 2003–04, to 16.1% in 2004–05 (see Table 3.13).

In 2004–05, more than three quarters of clients (77.2%) found treatment to be “very helpful,” an increase from the previous 2 years.

Table 3.13: Perceived Helpfulness of Treatment

Helpfulness	2002–03	2003–04	2004–05
	% n=2,095	% n=2,142	% n=2,505
Very helpful	70.2	75.4	77.2
Somewhat helpful	22.1	17.3	16.1
Not helpful at all	6.0	6.1	5.2
Missing values	1.8	1.2	1.4

3.6 What were the levels of reduction in alcohol and/or drug abuse achieved by the 2004–05 study population, and how did they compare with those of previous years?

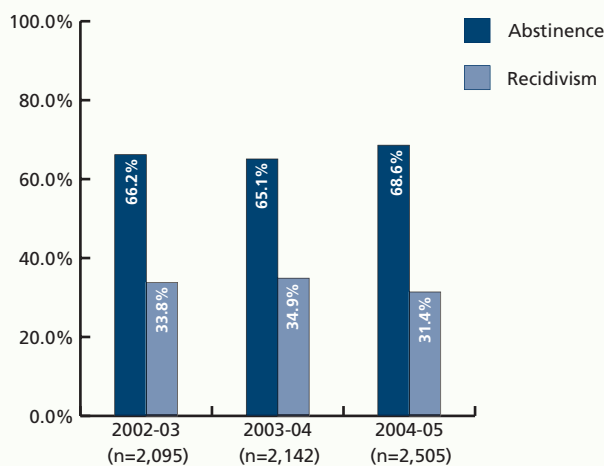
3.6a For the overall study population

In 2004–05, 68.6% of the study population reported being abstinent from substance abuse at the 6-month follow-up. This research found that for the 3 study years, on average two thirds of all clients were abstaining from alcohol and drug abuse each year by the follow-up (see Figure 3.6).

In terms of substances abused, significant declines between admission and the 6-month follow-up were found in all 3 years. For example, in 2004–05, 63.0% of clients reported at the start of treatment that they were abusing alcohol, a rate

On average, two thirds of clients each year reported abstaining from alcohol and drugs at the 6-month follow-up.

Figure 3.6: Abstinance and Recidivism at Six-month Follow-up



that plummeted to 22.9% by the 6-month follow-up. Cocaine abuse, second only to alcohol abuse, fell from 40.6% to 9.7%. The third most common drug among clients, marijuana/hashish, declined from 33.7% to 6.3%. Opiates/narcotics abuse dropped from 18.5% to 5.3%. There were equally impressive declines in the abuse of sedatives/hypnotics, from 8.8% to 1.7%; amphetamines/stimulants, from 9.6% to 1.6%; hallucinogens, from 0.2% to 0.0%; and inhalants, from 0.5% to 0.0%. Similar reductions were found during the previous 2 years (see Table 3.14).

Between admission and follow-up, clients reported large declines in rates of abuse of nearly all substances: alcohol dropped from 63.0% to 22.9%; cocaine from 40.6% to 9.7%, and marijuana from 33.7% to 6.3%.

Table 3.14: Alcohol and/or Drugs Abused at Admission and Six-month Follow-up

Substance ^a	2002–03 n=2,095		2003–04 n=2,142		2004–05 n=2,505	
	%	%	%	%	%	%
	A ^b	F ^b	A ^b	F ^b	A ^b	F ^b
Alcohol	66.7	26.9	63.3	24.2	63.0	22.9
Cocaine	44.9	8.5	45.1	11.0	40.6	9.7
Marijuana/hashish	39.3	5.4	32.5	5.7	33.7	6.3
Opiates/narcotics	15.9	2.5	16.8	4.1	18.5	5.3
Sedatives/hypnotics	8.4	1.3	7.2	0.4	8.8	1.7
Amphetamines/stimulants	7.9	0.6	6.7	0.8	9.6	1.6
Hallucinogens	2.3	0.0	1.3	0.0	0.2	0.0
Inhalants	0.8	0.1	0.3	0.0	0.5	0.0
Other	5.9	0.4	4.1	0.5	3.6	0.7

^aPercentages will add up to more than 100% because some clients abused multiple substances.

^bA = Admission; F = Six-month follow-up.

Treatment appeared to also reduce clients’ frequency of drug use. At admission, 66.1% of clients in 2004–05 said that they used a substance daily, but by the time of the 6-month follow-up, this percentage had dropped to 19.5%. In addition, the proportion of clients reporting that they abused substances several times a week declined from 13.8% at admission to 4.3% by follow-up. These declines are similar to those seen in previous years (see Table 3.15).

In 2004–05, whereas at admission 66.1% of clients reported daily use of substances in the prior month, by the follow-up only 19.5% reported daily use in the previous 30 days.

Table 3.15: Alcohol and/or Drug Abuse Frequency at Admission and Six-month Follow-up

Frequency ^a	2002–03 n=2,095		2003–04 n=2,142		2004–05 n=2,505	
	%	%	%	%	%	%
	A ^b	F ^b	A ^b	F ^b	A ^b	F ^b
Daily	58.8	8.2	67.2	7.8	66.1	19.5
Several times per week	15.9	4.6	15.5	4.9	13.8	4.3
1 to 2 times per week	5.6	5.3	4.5	9.5	4.5	1.5
Less than once per week	2.4	6.9	2.1	7.7	2.2	1.0
No use during prior month	17.3	75.0	10.7	70.2	13.4	73.7

^aValue represents frequency of use of any substance.

^bA = Admission; F = Six-month follow-up.

3.6b For specific demographic groups

In each of the study years, females reported slightly higher abstinence rates than males: in 2004–05, 69.9% vs. 68.1%; in 2003–04, 67.7% vs. 64.0%; and in 2002–03, 69.0% vs. 65.0%. Another consistency was that youth achieved higher abstinence rates than adults, on average more than 73% compared with adults’ average rate of 66% across the 3 years. I-SATE found somewhat greater rate fluctuations in terms of client ethnicity, but on average approximately two thirds of Whites, two thirds of African Americans, and three fifths of “other” groups reported abstaining from substance abuse at follow-up (see Table 3.16). In 2 of the 3 years, African Americans had the highest rate, 67.5% in 2002–03 and 70.8% in the current study year. In the last 2 years (but not in 2002–03), there was a reverse correlation between education and abstinence; those who had attended college achieved rates of 63.8% in 2003–04 and 66.9% in 2004–05, compared with those who had attended middle school, 73.2% and 76.4%, respectively. At the same time, there was a positive correlation between lack of criminal involvement and abstinence: on average more than 70% of those clients who reported being abstinent at follow-up had not been arrested since treatment (see Table 3.16).

In 2 of the 3 study years, African American clients reported the highest abstinence rate, 67.5% in 2002–03 and 70.8% in 2004–05.

I-SATE has consistently found a positive correlation between lack of criminal involvement and abstaining from substance abuse.

Table 3.16: Abstinence within Various Demographic Groups at Six-month Follow-up

Variable	2002–03	2003–04	2004–05
	% n=2,095	% n=2,142	% n=2,505
Total client population	66.2	65.1	68.6
Gender			
Male	65.0	64.0	68.1
Female	69.0	67.7	69.9
Ethnicity			
White	65.9	65.6	67.9
African American	67.5	63.9	70.8
Other	50.0	72.2	68.6
Age category			
Adult	65.8	64.7	68.3
Youth	71.0	72.8	75.0
Education level			
Middle school	61.8	73.2	76.4
High school	66.3	65.6	68.9
College	65.8	63.8	66.9
Arrested since treatment			
Yes	37.5	32.1	36.3
No	69.8	68.8	72.2

In all 3 of the study years, pregnant women and adolescents reported the highest abstinence rates: 75.9% and 71.0% in 2002–03, 77.4% and 72.8% in 2003–04, and 84.2% and 75.0% in 2004–05. There was more fluctuation in other subgroups’ rates after these top two, but on average the following subgroups reported the next best rates: women (almost 70%), African Americans (roughly 66%), and those having a prior arrest record (approximately 66%) (see Table 3.17).

In each year of the study, pregnant women and adolescent clients achieved the highest abstinence rates.

Table 3.17: Abstinence within Subgroups at Six-month Follow-up

Subgroup	2002–03	2003–04	2004–05
	% n=2,095	% n=2,142	% n=2,505
Pregnant women	75.9	77.4	84.2
Adolescents	71.0	72.8	75.0
Women	69.0	67.7	69.9
African Americans	67.5	63.9	70.8
Veterans	66.8	61.2	72.1
Dual diagnosis	66.4	57.7	69.8
Prior arrest record	66.0	65.8	69.1

3.6c For different treatment modalities

For the 2004–05 population, the abstinence rates were highest among those clients who received a combination of residential and outpatient treatment (75.4%), outpatient treatment (71.4%), and residential treatment (68.5%). The success of these three modalities was evident in 2002–03 and 2003–04 as well. Even among the other modalities (such as detox/residential), abstinence rates averaged 60% or higher across the 3 study years.

Table 3.18: Abstinence by Continuum of Care

Modality	2002–03	2003–04	2004–05
	% n=2,095	% n=2,142	% n=2,505
Detox/residential	58.0	63.1	64.7
Detox/outpatient	64.3	70.6	53.8
Detox/residential/outpatient	58.8	59.6	64.6
Residential	68.4	63.8	68.5
Outpatient	67.9	68.7	71.4
Residential/outpatient	68.6	69.3	75.4

Except for a slight dip among those receiving treatment for 61 to 90 days in 2003–04 and those in treatment more than 180 days in 2004–05, I-SATE research suggests that a longer treatment duration of up to 6 months is correlated with higher rates of abstinence (see Table 3.19).

I-SATE research during the past 3 years indicates that a greater amount of time spent in treatment is associated with higher rates of abstinence.

Table 3.19: Abstinence and Recidivism by Number of Days in Treatment

Number of days	2002–03	2003–04	2004–05
	% n=2,095	% n=2,142	% n=2,505
1-6	53.6	50.0	58.4
7-15	57.8	52.3	56.4
16-30	67.5	65.9	68.4
31-60	65.5	67.0	70.3
61-90	69.5	64.5	71.5
91-180	71.6	71.1	77.9
181 or more	71.4	74.3	73.0

3.6d For clients participating in AA/NA or aftercare

A consistent trend seen across all 3 study years is the clear correlation between abstinence and client participation in AA/NA and aftercare services. Although as in the previous 2 years client participation in aftercare activities in 2004–05 was lower than AA/NA attendance, abstinence rates reported by those in aftercare in the current study period (79.1%) topped those in AA/NA (73.5%) (see Table 3.20). Abstinence rates were lower among those who did not participate in aftercare (65.0%) or AA/NA (57.9%).

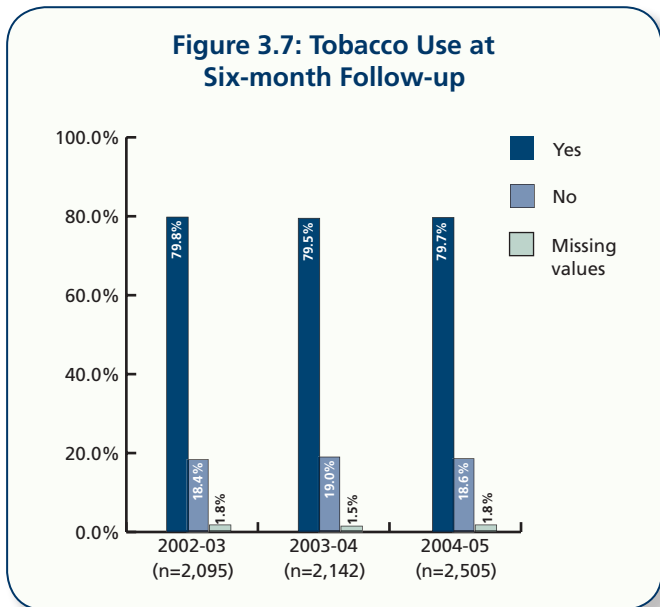
Across the 3 years, abstinence rates were higher for clients participating in AA/NA meetings or aftercare.

Table 3.20: Abstinence by Participation in AA/NA and Aftercare

Variable	2002–03	2003–04	2004–05
	% n=2,095	% n=2,142	% n=2,505
Participation in AA/NA			
Yes	69.5	69.9	73.5
No	58.7	54.4	57.9
Participation in aftercare			
Yes	73.9	76.3	79.1
No	63.9	61.1	65.0

3.7 What was the level of tobacco use following treatment?

Each year at follow-up, nearly 80% of clients reported using some type of tobacco product (see Figure 3.7). Of these, approximately 95% smoked cigarettes, and roughly 4% reported using chewing or smokeless tobacco (see Table 3.21).



Each year at the follow-up interview, nearly 80% of clients reported using some type of tobacco product, most commonly cigarettes.

Table 3.21: Tobacco Use at Six-month Follow-up

Tobacco Products	2002–03	2003–04	2004–05
	% ^a n=2,095	% ^a n=2,142	% ^a n=2,505
Cigarettes	94.4	95.1	95.2
Chewing tobacco/snuff/smokeless tobacco	4.2	4.0	3.6
Cigars	1.1	0.7	1.1
Pipe tobacco	0.0	0.0	0.1
Missing values	0.2	0.2	0.1

^aValues may not add up to 100% because of rounding.

3.8 What did quality of life measures at the six-month follow-up reveal?

3.8a Employment

Another consistency documented by I-SATE’s research is the positive impact of treatment on client employment. In all three study periods, the percentages of those reporting holding a full-time job increased dramatically between admission and the 6-month follow-up. The results of the current study year are typical: whereas at admission only 15.0% of clients were working full-time, 46.0% reported doing so 6 months afterward. In addition, the rate of part-time employment rose, from 3.8% to 12.9%. Not unexpectedly, the unemployment rate was cut in half, from 65.2% at admission to 31.1% at follow-up (see Table 3.22).

As noted above, this impact was seen in the two previous study periods as well. In 2002–03, full-time employment rates shot up from 11.1% to 41.5% and in 2003–04 from 15.7% to 44.7%. Likewise, the percentage of those working part-time in 2002–03 rose from 3.6% to 12.6% and in 2003–04 from 4.3% to 12.7%.

In 2004–05, the proportion of clients reporting their usual occupation as “skilled worker” rose from 24.1% to 32.6%, continuing a trend seen in 2003–04 but not earlier. There have been consistent increases across the 3 years in the percentage who described themselves as “professionals” (for example, in the current study year from 5.9% to 8.2%), and as “housewife/homemaker” (from 0.5% to 2.2%) (see Table 3.22).

Table 3.22: Employment Situation and Usual Occupation at Admission and Six-month Follow-up

Variable	2002–03 n=2,095		2003–04 n=2,142		2004–05 n=2,505	
	% ^a	% ^a	% ^a	% ^a	% ^a	% ^a
	A ^b	F ^b	A ^b	F ^b	A ^b	F ^b
Employment situation						
Full-time	11.1	41.5	15.7	44.7	15.0	46.0
Part-time	3.6	12.6	4.3	12.7	3.8	12.9
Unemployed	60.6	36.4	60.7	34.3	65.2	31.1
Student	6.7	5.1	5.0	3.5	6.0	4.2
Other	7.9	4.3	8.3	4.1	5.9	4.8
Missing values	10.2	0.1	5.9	0.7	4.1	0.9
Usual occupation						
Unemployed	57.0	41.9	50.7	40.5	48.7	38.1
Skilled worker	21.2	17.3	25.7	30.5	24.1	32.6
Professional	5.7	10.2	6.2	10.7	5.9	8.2
Housewife/homemaker	1.0	17.3	0.6	1.6	0.5	2.2
Laborer	6.0	7.4	9.9	8.9	10.7	9.3
Other	0.0	0.4	0.0	0.0	0.0	0.0
Missing values	9.2	5.5	7.0	7.8	10.1	9.6

^aValues may not add up to 100% because of rounding.

^bA = Admission; F = Six-month follow-up.

Treatment clearly has a positive impact on clients’ employment status.

In each of the three study periods, full-time employment among clients more than doubled and part-time employment quadrupled.

In addition, approximately two thirds of respondents at the follow-up interview said that they were performing better at work or school; similar outcomes were seen in the 2002–03 and 2003–04 study periods (see Figure 3.8).

3.8b Living situation

Substance abuse treatment appears to positively influence clients’ living situation. In 2004–05, between admission and follow-up there was a decrease in the percentage of clients who lived alone (from 21.6% to 16.4%) and an increase in those who were living with immediate family (from 12.3% to 47.6%). This trend was evident in the two previous study periods as well (see Table 3.23). Also, whereas in the current study year 8.1% of respondents were homeless at admission, 0.7% reported being so at follow-up. Across the 3-year study period, the rate of client homelessness has stayed around 7% at admission and declined to 1% or less at follow-up (see Figure 3.9).

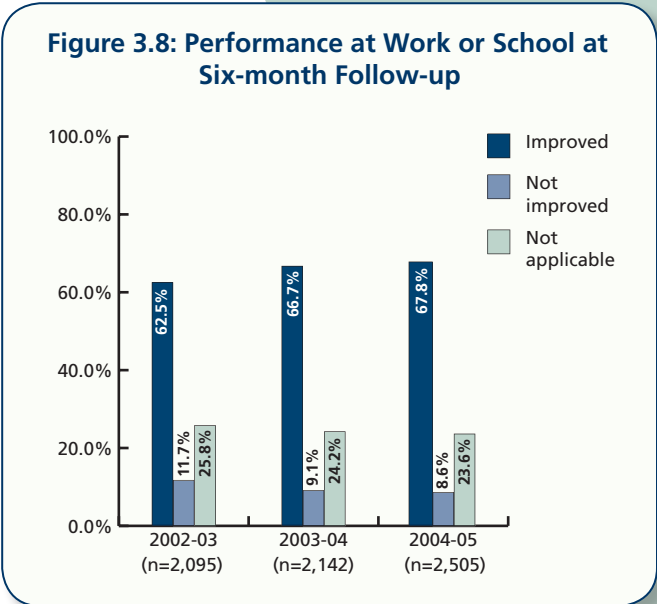
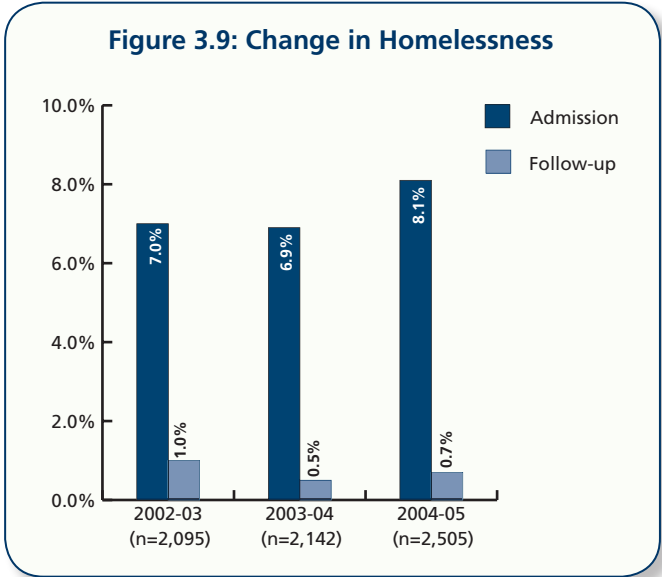


Table 3.23: Living Arrangement at Admission and Six-month Follow-up

Arrangement	2002–03 n=2,095		2003–04 n=2,142		2004–05 n=2,505	
	% ^a	% ^a	% ^a	% ^a	% ^a	% ^a
	A ^b	F ^b	A ^b	F ^b	A ^b	F ^b
Alone	19.2	13.1	17.4	15.3	21.6	16.4
With immediate family	12.1	52.4	10.9	50.9	12.3	47.6
With other relatives	49.0	11.9	45.8	10.3	45.6	10.6
Other	14.7	22.2	21.2	23.1	18.5	25.1
Missing values	4.9	0.3	4.7	0.4	2.0	0.3

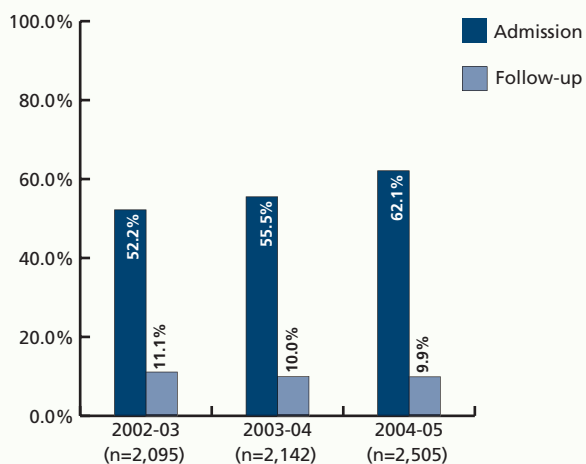
^aValues may not add up to 100% because of rounding.

^bA = Admission; F = Six-month follow-up.



Each study year, the rate of client homelessness has been approximately 7% at admission and has dropped to 1% or less by the follow-up.

Figure 3.10: Arrest at Admission and Six-month Follow-up



3.8c Incidence of arrest

In the past 3 years, approximately half of clients had been arrested in the 2 years prior to admission; at the 6-month follow-up, only about 10% reported having been arrested following treatment (see Figure 3.10). About a third of clients have had their licenses revoked for DUI (Driving Under the Influence); however, this percentage is on the rise, from 33.6% in 2002–03 to 36.2% in 2003–04 and to 38.3% in 2004–05 (see Table 3.24).

Of the small number of respondents who had been arrested following treatment, across all three study periods the most common reasons cited included parole/probation violation, driving under the influence, and disorderly conduct/vagrancy/public intoxication (see Table 3.24).

In each of the three study periods, only a tenth of clients had been arrested in the 6 months since beginning treatment.

Table 3.24: Revoked Driver’s License and Reasons for Arrest since Treatment

Variable	2002–03	2003–04	2004–05
	% n=2,095	% n=2,142	% n=2,505
Driver’s license ever revoked for DUI			
Yes	33.6	36.2	38.3
No	62.1	60.1	58.5
Missing values	4.4	3.6	3.2
Reasons for arrest since treatment^a			
Parole/probation violation	15.9	12.6	16.9
Major driving violation	9.1	8.8	7.7
Driving under the influence	9.5	12.6	8.5
Drug charge	9.9	6.5	4.4
Disorderly conduct/vagrancy/public intoxication	10.3	8.4	7.7
Assault	3.9	5.1	3.2
Domestic violence	4.7	2.8	4.8
Shoplifting/vandalism	0.9	2.8	2.8
Burglary/larceny	1.7	2.3	1.2
Contempt of court	3.4	2.3	1.6
Forgery	2.2	2.3	2.4
Weapons offense	0.9	0.9	0.8
Prostitution	0.4	0.5	0.0
Robbery	0.9	0.5	2.4
Rape	0.0	0.5	0.0
Other	19.4	16.7	17.3
Arson	0.0	0.0	0.4
Missing values	15.9	23.7	27.8

^aPercentages will add up to more than 100% because some clients gave multiple responses.

3.9 What was the impact of treatment on clients’ involvement in domestic violence?

A small number of clients in each study population had committed acts of domestic violence or were victims of domestic violence themselves. Following treatment the percentage of those who had engaged in or been the victim of such violence consistently declined. For example, in 2004–05 the rate of clients who had committed domestic violence decreased from 15.6% to 1.8%, and those who had themselves been victims, from 22.0% to 2.5% (see Table 3.25). Similar outcomes were seen in the previous 2 years.

Table 3.25: Domestic Violence Involvement at Admission and Six-month Follow-up

Variable	2002–03 n=2,095		2003–04 n=2,142		2004–05 n=2,505	
	% ^a	% ^a	% ^a	% ^a	% ^a	% ^a
	A ^b	F ^b	A ^b	F ^b	A ^b	F ^b
Committed domestic violence						
Yes	15.1	2.0	14.3	1.2	15.6	1.8
No	82.6	95.5	84.1	97.2	83.0	96.9
Missing values	2.3	2.5	1.5	1.6	1.4	1.3
Victim of domestic violence						
Yes	21.2	2.8	18.7	2.7	22.0	2.5
No	76.3	94.0	79.7	94.1	76.5	94.4
Missing values	2.4	3.2	1.5	3.2	1.4	3.0

Note: All data were collected at the time of the follow-up when clients were asked whether they had committed or been a victim of domestic violence before or since treatment.

^aValues may not add up to 100% because of rounding.

^bA = Admission; F = Six-month follow-up.

3.10 What was the effect of treatment on clients’ mental and physical health?

Another positive result seen in all 3 study years was the impact on clients’ physical health: 80.3% of respondents in 2002–03, 84.2% in 2003–04, and again 84.2% in 2004–05 reported that they were in better health since treatment. Further, during the same period over one third rated their health as “very good” and another third as “good” (see Table 3.26).

At the same time, since 2002 nearly half of all interviewees reported psychological/emotional problems. I-SATE found high rates of serious depression (62.1% in 2002–03, 60.9% in 2003–04, and 60.1% in the current study year) and serious anxiety or tension (60.9%, 63.3%, and 64.4%). More than a fourth reported having trouble understanding concepts, concentrating, or remembering (see Table 3.26).

Over 80% of clients each year experienced better health since treatment, with one third describing their physical condition as “very good” and another third as “good.”

Table 3.26: Physical and Mental Health at Six-month Follow-up

Variable	2002–03	2003–04	2004–05
	% n=2,095	% n=2,142	% n=2,505
Had better physical health since treatment			
Yes	80.3	84.2	84.2
No	15.0	12.5	12.3
Missing values	4.7	3.3	3.5
Current overall health rating			
Excellent	16.2	14.2	14.8
Very good	34.6	35.2	34.7
Good	30.5	33.9	32.6
Fair	11.9	10.8	12.3
Poor	4.4	4.1	4.0
Missing values	2.4	1.7	1.5
Experienced a mental health problem since treatment			
Yes	48.4	47.6	47.1
No	44.9	49.1	52.9
Missing values	6.7	3.3	0.0
Type of emotional problem experienced in the 30 days before the follow-up^a			
Serious anxiety or tension	60.9	63.3	64.4
Serious depression	62.1	60.9	60.1
Prescribed medication for a psychological/emotional problem	33.8	33.7	29.4
Trouble understanding concepts, concentrating, or remembering	28.2	26.3	33.6
Trouble controlling violent behavior	8.0	6.3	8.5
Serious thoughts of suicide	5.5	4.4	4.6
Hallucinations	2.9	3.3	4.2
Attempted suicide	0.8	0.6	0.6

^aPercentages will add up to more than 100% because some clients gave multiple responses.

National and State Level Trends in Substance Abuse Treatment Effectiveness

Chapter 4

This chapter discusses research conducted at both the national and state levels that demonstrate the effectiveness of substance abuse treatment.

4.1 What does research conducted at the national level demonstrate about the effectiveness of substance abuse treatment?

Alcohol and drug abuse treatment has had a significant impact on the lives of many Americans by helping to reduce substance abuse. According to the Schneider Institute for Health Policy, treatment is considered effective if it reduces substance abuse by 50% after 6 months (2001, p. 110). The Schneider Institute reports that approximately 40% to 70% of those abusing alcohol, 50% to 60% of those abusing cocaine, and 50% to 80% of those abusing opiates have abstained from further substance abuse after attending treatment programs (p. 110).

Research conducted at the national level provides empirical evidence for the effectiveness of substance abuse treatment. The Substance Abuse and Mental Health Services Administration (SAMHSA) sponsored a 5-year analysis of a random sample of 4,411 clients, interviewing them at admission, at discharge, and at 12 months after treatment (Substance Abuse and Mental Health Services Administration, 1997). This report, called the National Treatment Improvement Evaluation Study (NTIES), showed major reductions in the frequency of clients' drug and alcohol abuse. For example, 12 months after treatment, their primary drug abuse rate had dropped from 73% to 38%. The NTIES indicated especially significant decreases among those abusing crack (from 50% to 25%), cocaine (from 40% to 18%), and heroin (from 24% to 13%). The study also found other indicators of treatment success: the percentage of clients who were employed rose from 51% to 60%, and the proportion of those who were homeless dropped from 19% to 11%.

In addition, whereas 48.2% of clients had been arrested in the 12 months prior to treatment, only 17.2% had been arrested within the 12 months after treatment. The NTIES found a dramatic 78% decrease in selling drugs and an 82% decrease in shoplifting among the study population (Substance Abuse and Mental Health Services Administration, 1997).

Other research confirms the NTIES' conclusions, such as the Services Research Outcomes Study (SROS) that was conducted in the mid-1990s and sponsored by the National Institute on Drug Abuse (NIDA). Using a wide sampling of clients (N=1,060,000), the SROS assessed treatment effects. The results were compiled from the self-reports of 1,799 individuals discharged from a facility in the 12 months before September 1990, detailing their behaviors within 5 years prior to and after treatment (Schildhaus, Gerstein, Brittingham, Cerbone, & Dugoni, 2000, pp. 1849–1852). The SROS revealed a substantial drop in the use of illicit

Empirical studies conducted at the national level have demonstrated the effectiveness of substance abuse treatment.

drugs: 75% before vs. 59% after treatment (p. 1861). This study also documented a large decline in the use of all drugs studied except illegal methadone, and a one-fourth to one-half reduction in criminal activities after treatment (p. 1849).

Equally encouraging were the results of a recent national follow-up study of clients treated for cocaine abuse. Simpson, Joe, and Broome (2002) interviewed 708 clients 1 year and then 5 years after treatment to determine relapse rates. Researchers used urine and hair samples collected at the time of the interviews to test the validity of client responses. In the year following treatment, only about one fifth (21%) of the population was abusing cocaine again; 5 years after treatment, still only a fourth (25%) reported abusing cocaine, although tests performed on urine samples indicated that 26% were still abusing this substance. Only 18% said they had been arrested in the 5-year period since treatment.

Finally, the National Association of State Alcohol and Drug Abuse Directors, Inc. (NASADAD) conducted a meta-analysis of 53 treatment outcomes studies published in 24 states (including Tennessee) from 1994 to 1999. Using the four effectiveness measures detailed by the 2000 SAPT Block Grant application and two additional performance indicators, the NASADAD report found that alcohol and drug abuse as well as clients' involvement in criminal activity decreased, levels of employment increased, and physical and mental health and family/social functioning improved. The report's analysis of other outcomes variables demonstrated that regardless of setting or modality, duration of follow-up period, or particular indicator (e.g., length of stay, participation in aftercare or peer support services), substance abuse treatment works (National Association of State Alcohol and Drug Abuse Directors, 2001).

A meta-analysis of 53 state treatment outcomes studies by the National Association of State Alcohol and Drug Abuse Directors revealed that across the board, rates of substance abuse decreased as did client involvement in the criminal justice system.

4.2 Does research conducted by individual states demonstrate the effectiveness of substance abuse treatment?

A number of states have conducted studies in order to gauge the success of their publicly funded treatment programs. Because these reports use widely varying methods, the results may not be comparable: for example, some researchers collect data from clients 6 months or 1 year after admission to compare with intake data, while others gather information from clients at discharge, or 6 months to 1 year from discharge for use in this comparison. Regardless of the methodology used, however, research indicates that treatment does help reduce the prevalence of alcohol and drug abuse. In what follows, data are presented from outcomes assessment programs in 12 states that support this conclusion.

Connecticut's Department of Mental Health and Addiction Services conducted research on the effects of treatment on clients who entered publicly funded substance abuse treatment programs between June 2000 and April 2002. Their study found that 58.1% of women and 42.1% of men had not used their "primary problem substance" in the month before the follow-up interview (2003, p. 4). Also, the frequency of abuse declined from admission to follow-up: prior to treatment, male clients abused substances an average of 17.5 days a month, and female clients an average of 16.2 days; after treatment, the average number of days declined to 5.2 and 3.0, respectively (p. 5).

In a Florida program designed to help welfare recipients who were also substance abusers find employment, researchers found a significant correlation between treatment completion and length of stay and the facility's success in helping these clients move off public support. Residential treatment in particular was found to be linked to positive employment outcomes (Metsch, 2002).

In order to discern the impact of treatment, Hawaii conducted 6-month follow-up interviews with 532 youth clients and 1,041 adult clients between July 1996 and June 1997 (Hawaii Department of Health, 2001, pp. 1–2). Results showed major reductions in alcohol and drug abuse. In the month before the follow-up interview, 76.7% of adolescents and 65.8% of adults were completely free of substance abuse. The number of those who had been arrested also declined. Close to half of youth clients (50.2%) and even more adult clients (84.3%) reported no arrests in the month before follow-up. Further, 93.0% of adolescents and 75.6% of adults had not been hospitalized since treatment (pp. 1–2).

In Illinois, researchers sampled 1,210 adults who, between 1998 and 2000, had received substance abuse treatment and conducted interviews with them 6 months after admission (Bruni, Jacob, & Robb, 2001, p. 1). In the 30 days prior to the interviews, clients' alcohol and drug abuse had substantially declined since admission: alcohol from 59% to 30%, cocaine from 37% to 6%, marijuana from 30% to 6%, and heroin from 24% to 6% (p. 30). Clients reported fewer medical or mental health problems in the 30 days prior to follow-up compared with the 30 days before admission to treatment (pp. 35–41). Also, clients earned more income in the 30 days before follow-up than they had in the 30 days before admission (p. 42), and they reported that their family relationships improved as well. Twenty-nine percent of clients reported having serious conflicts with family members in the 30 days before admission to treatment, compared with 22% in the same period before follow-up. The frequency of similar problems with nonfamily members also decreased (pp. 46–47).

In 2003, the Iowa Consortium for Substance Abuse Research and Evaluation (ICSARE) conducted interviews with 362 adults 6 months after their discharge from a publicly funded treatment facility (Iowa Consortium for Substance Abuse Research and Evaluation, 2004, p. i). When clients were asked whether they had returned to abusing any substances, 50.2% reported abstinence, and the percentage of clients reporting no secondary substance abuse increased from 42.8% to 90.3%. Abstinence rates for specific substances varied: from 43.9% for alcohol, 53.3% for marijuana, 65.5% for methamphetamine, and 71.2% for opiates (p. 16). Other quality of life indicators improved as well: only 11.3% of clients had been rearrested during the 6 months following treatment; the percentage of clients employed full-time increased from 36.1% at admission to 52.7% at follow-up (p. 6).

In Kentucky, researchers assessed drug and alcohol treatment effectiveness for 838 clients, the majority of whom received outpatient therapy or residential treatment in combination with assessment and evaluation. Comparing client admission data with that collected at a 12-month follow-up, they found significant declines in abuse of all substances. For example, clients reported an alcohol absti-

In Illinois, a 2001 study found that after treatment, clients reported reduced rates of substance abuse, fewer medical or mental health problems, higher incomes, and improvements in family relationships.

nence rate of 63.9%, a 47.9% increase from intake, and even among those clients who continued to drink, there was a 46.5% decrease in the number of days they used alcohol. In addition, 55.9% of clients reported being abstinent from illegal drugs, a 27.5% increase from intake; 83.9% from marijuana, a 29.4% increase from intake; and 81.9% from prescription tranquilizers, a 26.8% increase. The most dramatic abstinence rates at follow-up were found for opiates (91.1%) and for cocaine (96.2%). Quality of life indicators were also impressive: a 45.3% increase in full-time employment, a 51.2% reduction in the number of clients reporting having been arrested in the year prior to the follow-up, and a 39% increase in the proportion of clients who reported their health as “very good” or “excellent” following treatment (Walker et al., 2003, pp. vi–vii).

A 2005 assessment by Maine’s Office of Substance Abuse of adult drug court programs found that after a year, the rearrest rate for those successfully completing the program was lower (20%) than that of those offenders who were adjudicated traditionally (30%) or those who did not complete the program (35%). They were also less likely to be rearrested on felony charges and arraigned on property and violent crimes (Anspach & Ferguson, 2005, p. 16).

In 2002, Baltimore, the biggest city in Maryland, conducted the “Baltimore Drug and Alcohol Treatment Outcomes Study,” describing it as the “largest and most rigorously conducted” substance abuse treatment outcomes evaluation focusing on a single U.S. municipality. Using a sample population of 991 uninsured residents who voluntarily entered treatment in 1998–1999, researchers compared self-report data with follow-up interviews at 1, 6, and 12 months after treatment, confirming results via urine tests and official criminal justice records. They found significant reductions in drug and alcohol use, crime, HIV-risk behavior, and depression; also, clients reported higher levels of income earned legally. Cocaine use declined by 64% at 30 days after intake and by 48% at 1 year; heroin use dropped by 72% at 30 days and by 69% at 1 year. The average number of days clients reported drinking to intoxication declined by 64% at 1 month and 34% at 6 months. Further, there was a 38% decline in the incidence of arrests in the 12 months following treatment compared with the year before treatment, and a 59% reduction in drug injection among methadone clients at 1 year after treatment admission. In addition, the study found a statistically significant decrease in depression across all follow-up intervals. Finally, clients reported earning 67% higher wages in the 30 days prior to the 12-month follow-up than they did in the month prior to treatment (Baltimore Substance Abuse Systems, Inc., 2002).

In Massachusetts, the Treatment Outcomes and Performance Pilot Study (TOPPS I) compared data on clients’ alcohol and drug abuse before they began residential treatment, at discharge, and at 3 months after discharge. While 41% of the 160 clients surveyed at discharge were abstinent, this percentage doubled to 83% at 3 months post-discharge. Treatment had other positive outcomes: at admission, 24% of clients reported having been arrested, but at the follow-up interview, no client had been rearrested. Whereas 5% of patients admitted to treatment were employed, at discharge the rate dramatically increased to 41%. Additionally, clients reported experiencing fewer psychological problems (from 76% to 53%) and less involvement in criminal activity (from 47% to 1%) at follow-up than they had at admission (Brolin, 2000, pp. 7–8, 10).

A 2005 report issued by Maine’s Office of Substance Abuse found that, after a year, the rearrest rate for those who successfully completed treatment was lower than that of program noncompleters.

Treatment programs in South Carolina have attained significant abstinence rates. According to one 2003 study, 65% of clients reported using alcohol in the 30 days prior to admission, compared with 28% at follow-up (60 to 75 days after discharge). Further, whereas 59.8% of clients reported drug abuse and 38.1% reported alcohol intoxication in the 30 days prior to admission, at the follow-up these rates plummeted to 10.5% and 6.8%, respectively (South Carolina Department of Alcohol and Other Drug Abuse Services, 2003).

A comprehensive report published recently by the state of Washington documents the positive outcomes achieved by various client populations receiving publicly funded treatment in the state (Albert, 2004). For example, a 2004 study of 5,433 youth admissions found that by the time of the 18-month follow-up, such clients were five times more likely to report income from employment than from illegal activities (pp. 233–234). Research published in 2003 on 6,000 adolescent clients found that the rate of convictions fell from 37% in the 18 months prior to treatment to 24% in the 18 months following treatment; felony convictions dropped by 56% and misdemeanors decreased by 30% (p. 239). According to a 2004 study, pregnant women receiving treatment for chemical dependencies were 66% less likely to give birth to low birth weight babies and reported five times greater reduction in arrest rates in the 2 years following treatment than those who had not (cited in Albert, 2004, pp. 244, 246). A 2000 report found that clients who were recipients of Aid to Families with Dependent Children (AFDC) in the state more than doubled their average employment income in the 2 years following substance abuse treatment (p. 278).

In 2002, Wisconsin’s Adult Addictions Treatment Outcomes Measurement Pilot Project analyzed a sample population of 190 clients who had been enrolled in both public and private-pay substance abuse treatment facilities around the state between June 2000 and June 2001. Comparing data gathered at admission with that taken via telephone 4 to 6 months after discharge, the study found that 67% of the population had not used alcohol and 89% had not used drugs in the month prior to the follow-up interview. Treatment even benefited those who did not complete the full course of treatment: while at the follow-up 70% of completers reported abstinence, more than a half (46%) of noncompleters did so as well. Overall employment levels (full- and part-time) rose from 58% at admission to 62% at follow-up, and while about half (46%) had been arrested in the year before admission, only 15% had been arrested following treatment. A majority of clients (65%) were “very satisfied” with treatment, and 60% felt they had been “considerably” helped by services provided by the facility (Quirke, 2002).

On the basis of empirical data provided by both national and state research studies, it is clear not only that treatment reduces substance abuse, it produces an array of other positive outcomes for clients: less involvement in criminal activities, better mental and physical health and relationships with others, improved living circumstances, and greater productivity and chances for employment.

A Washington State report on 5,433 youth admissions to treatment found that, by the time of the 18-month follow-up, clients were five times more likely to report income from employment than from illegal activities.

Conclusion

Chapter 5

This chapter summarizes the 2004–05 TOADS outcomes evaluation and provides some qualitative data on clients’ treatment experiences. It also documents the economic, social, and public health burden of untreated substance abuse in the United States today and demonstrates the cost-effectiveness and multiple benefits of treatment over other types of punitive measures.

5.1 How successful is publicly funded substance abuse treatment in Tennessee?

As documented in this report, clients in the 2004–05 study population reported an abstinence rate of 68.6%, an increase from the previous 2 years. There were significant declines in the abuse of all substances: alcohol rates dropped from 63.0% at admission to 22.9% at follow-up; cocaine, from 40.6% to 9.7%; marijuana/hashish, from 33.7% to 6.3%; and opiates/narcotics, from 18.5% to 5.3%. I-SATE found even more dramatic decreases in the abuse of sedatives/hypnotics, from 8.8% to 1.7%; stimulants/amphetamines, 9.6% to 1.6%; hallucinogens, 0.2% to 0.0%; and inhalants, 0.5% to 0.0%.

In addition, the frequency with which clients abused substances also dropped: whereas at admission 66.1% of clients reported using substances daily, by the 6-month follow-up this rate had declined to 19.5%. Further, of the 13.8% who at admission reported abusing substances several times a week, 4.3% did so by the follow-up.

Fewer clients were unemployed at the 6-month follow-up (from 65.2% to 31.1%). Correspondingly, the percentage who held part-time jobs tripled, from 3.8% at admission to 12.9% at follow-up, and those clients who had full-time work tripled as well, from 15.0% to 46.0%. In addition, the percentage of those clients who reported living with immediate family increased dramatically, from 12.3% to 47.6%, and the vast majority (94.7%) of clients were not living with a substance abuser after treatment. The proportion of clients reporting being homeless dropped from 8.1% at admission to 0.7% at the follow-up.

Whereas 62.1% of clients had been arrested during the 2 years prior to admission, by the time of the 6-month follow-up only 9.9% had been arrested. In addition, the percentage of clients involved in domestic violence declined, both as perpetrators (from 15.6% to 1.8%) and as victims (from 22.0% to 2.5%).

A large majority (84.2%) of clients reported that they were in better physical health since treatment, with almost a half (49.5%) rating their current health status as either “excellent” or “very good.” Another third (32.6%) said their health was “good.”

After treatment, the lives of Tennessee residents improved in multiple ways: I-SATE found increased rates of abstinence and employment, together with reduced involvement in criminal activity and lower incidence of homelessness.

Between admission and the follow-up, client employment rates tripled, for both full-time (15.0% to 46.0%) and part-time work (3.8% to 12.9%).

5.2 What are clients' perceptions about their treatment experiences?

In the course of interviewing clients, I-SATE staff asked respondents a number of open-ended questions in order to find out about their treatment experiences. These questions included “What did you like best/least about this service?” and “What might have been done to enhance your treatment experience?”

Similar to 2002–03 and 2003–04, 35.5% of clients in the 2004–05 study population cited the counselors and staff as the best aspect of treatment. “They were informative and educational,” noted one, and others described facility personnel as “wonderful” and “excellent.” Another 15.6% of clients liked what they learned in the program about alcoholism and other types of substance abuse, particularly its implications for their immediate lives: such comments as “I had a chance to focus and rebuild” and “get my life back together” were typical. About a tenth (8.14%) of clients said they found their specific treatment protocol the best part of treatment, as it was effective in helping them abstain from substance abuse.

A number of clients liked the “open discussions” with counselors and other individuals enrolled in their program: “just being able to talk” was a common response. Some felt that the “other clients” and “community” they built were of greatest value. Some clients specifically cited the spiritual components of their treatment program.

A few clients found specific aspects of the treatment facility to be the highlight of treatment, such as the facility and food and the “safe, clean, peaceful” environment of the facility they attended.

Almost half of clients (46.0%) responded “nothing” when asked what might have been done to enhance their treatment experience. However, some respondents offered comments on various aspects of treatment, summarized as follows: 17.2% of these addressed the counselors and staff (e.g., “have more counselors for one-on-one counseling”); 14.5% concerned facilities and staff (e.g., “better food”); 5.1% mentioned facility policies (e.g., “more strict rules”); and 1.2% commented on treatment duration (e.g., “longer stay”). About 1% noted isolated problems with other clients, and .06% found the limited contact with family difficult, suggesting that they would have appreciated more “family time” and “group meetings with family members involved.”

The positive overall responses demonstrate that publicly funded facilities in Tennessee are serving those state residents in need.

5.3 What is the burden of untreated substance abuse in the United States?

The Schneider Institute for Health Policy reports that the United States spends \$414 billion a year in costs related to substance abuse, a figure that encompasses the financial burden upon the health care, criminal justice, and social welfare systems as well as losses in productivity (Schneider Institute for Health Policy, 2001). The costs associated with drug abuse rose almost 6% annually from 1992 to 1998 (Office of National Drug Control Policy, 2001, p. 2). Related health costs rose 2.9%, productivity losses went up 6%, and law enforcement and social wel-

As in 2002–03 and 2003–04, the study population in 2004–05 cited facility counselors and staff as the “best aspect” of their treatment.

According to the Schneider Institute, the United States spends \$414 billion a year in expenditures associated with substance abuse, encompassing the health care, criminal justice, and social welfare systems as well as losses in productivity.

fare rose 6.6% annually (pp. 4–5, 7). Still, the majority of the economic cost (55%) of substance abuse is borne not by abusers but by institutions, employers, families, and victims (U.S. Department of Health and Human Services, 2000, pp. 365–366). According to the Center for Substance Abuse Treatment, untreated alcohol and drug abuse costs every person in the United States on average \$1,050 a year (1999, p. 1).

Substance abuse has been associated with more fatalities than any other preventable health condition and has been cited as a risk in more than 72 acute and chronic medical problems (Center for Substance Abuse Treatment, 1999, p. 1). Alcohol abusers use medical facilities far more frequently than nondrinkers and are hospitalized four times the number of days because of alcohol-related injuries (Schneider Institute for Health Policy, 2001, p. 58). In large urban hospitals, one to two fifths of patients have ailments such as liver and heart disease and particular cancers caused or aggravated by drinking alcohol to excess (U.S. Department of Health and Human Services, 2000, pp. 9–10). Nearly 100,000 people die every year because of alcohol consumption. Another 25,000 deaths annually may have been the result of diseases caused by illicit drug use (Schneider Institute for Health Policy, 2001, pp. 50, 54).

Hospital emergency rooms have been overwhelmed by alcohol- and drug-related admissions. SAMHSA’s Drug Abuse Warning Network (DAWN) estimated in the second half of 2003 there were 141,343 emergency room visits involving alcohol or alcohol/drug abuse in a patient younger than 21 and 332,046 emergency room visits were related to drug abuse alone, more than half involving multiple drugs. About one quarter (26%) of all emergency room admissions related to suicide attempts involved alcohol (Substance Abuse and Mental Health Services Administration, 2004a, pp. 11–12). At the current rate, the cost of untreated substance abuse to the Medicaid program will likely exceed \$1 trillion in the next 20 years (Center for Substance Abuse Treatment, 1999, p. 1).

Substance abuse also impairs the financial health of the nation. American companies spend more than \$100 billion a year on costs related to alcohol and drug abuse as a result of missed workdays, reduced productivity, higher insurance rates, and injuries and damages incurred on the job (as cited in New York State Office of Alcoholism and Substance Abuse Services, 1998, p. 16). For example, substance abusers were more likely to have missed work in the past month or to have changed employment at least two times in the past year (Schneider Institute for Health Policy, 2001, p. 72). According to the U.S. Small Business Administration, each untreated substance-abusing worker costs an employer \$640 a year—compared with just \$22–50 per worker annually for drug-free workplace programs (Center for Substance Abuse Treatment, 1999, pp. 2–3).

In the end, however, it is the criminal justice programs that bear the heaviest burden. The National Center on Addiction and Substance Abuse at Columbia University reports that in 1998 over three fourths (77%) of the cost associated with these programs—adult corrections, juvenile justice, and the judiciary system—is related to substance abuse (2001, p. 15).

According to DAWN (the Drug Abuse Warning Network), in 2003 more than three hundred thousand emergency room visits were related to drug abuse.

A 2001 study conducted in New York found that nontreated substance abusers were arrested at 20 times the rate of treated abusers.

The National Center on Addiction and Substance Abuse estimated that in 1998, substance abuse and addiction cost the states \$81.3 billion in expenses incurred by the criminal justice, social and child welfare, and public health systems.

Research has clearly shown untreated substance abuse is linked to criminal activity. At least half of adults arrested for serious crimes test positive for drugs (Schneider Institute for Health Policy, 2001, p. 66). Researchers in New York found that nontreated abusers were arrested at 20 times the rate of treated abusers (Appel et al., 2001), and Greenfeld (1998) found that 10% of robberies, 21% of aggravated assaults, and 30% of sexual assaults were committed under the influence of alcohol (p. 4). According to the Center for Substance Abuse Treatment, half of perpetrators of domestic violence are substance abusers, and more than three quarters of all child abuse cases involve parental addiction (1999, p. 1).

Too much of the public's resources are directed toward the expenses of untreated substance abuse. In 1998, states spent an estimated \$81.3 billion on costs incurred by the criminal justice, social and child welfare, and public health systems as a result of substance abuse and addiction, a proportion of their budget that matched expenditures earmarked for higher education. Only \$3 billion of the total, however, went toward prevention and treatment (National Center on Addiction and Substance Abuse, 2001, p. 10), which has consistently and reliably been shown to significantly reduce the personal and societal impact of substance abuse.

Treatment not only helps reduce the problems and pain experienced by substance abusers, their families, and the community at large, but many cost-effectiveness studies by health economists and public policy specialists have also demonstrated that treatment has a financial advantage. One recent meta-analysis of 109 published and 17 unpublished economic evaluations performed between 1990 and 2004 conducted by the University of Pennsylvania's Treatment Research Institute revealed that, across the board, "substance abuse treatment yields positive net economic benefits" (Belenko, 2005, p. vi). These savings can often be dramatic: a study in Chicago comparing the cost of substance abuse-related consequences for 1,326 clients at admission with follow-ups over a 48-month period found that the average total cost decreased from \$19,108 to an average of \$6,671 per client 4 years after admission. In Washington State, analysis of five residential programs revealed an average net economic benefit of \$21,329 per client (Belenko, 2005, p. vi).

In addition, research has shown that among possible alternatives, treatment is the most cost-effective solution. The Institute of Medicine has estimated the yearly expenses associated with substance abuse offenders in the legal system as follows: \$2,722 to \$12,467 for treatment, \$16,691 for probation, \$39,600 for incarceration, and \$43,200 for untreated addiction (as cited in Schneider Institute for Health Policy, 2001, p. 111).

There are further economic benefits to be gained from helping substance abusers return to healthy and productive lives: for example, the National Center on Addiction and Substance Abuse has shown that treating and training just 10% of the nearly 1.2 million jailed and imprisoned persons in the United States who abuse alcohol and/or drugs would lead to increased earnings of \$8.26 billion from the first year of employment after inmate release (2001, p. 81).

A 2005 meta-analysis of 126 outcome evaluations conducted by the University of Pennsylvania's Treatment Research Institute concluded that "substance abuse treatment yields positive net economic benefits."

5.4 Does substance abuse treatment lead to cost savings for individual states?

Several states have found significant savings as a result of their substance abuse treatment programs. Oregon, for example, has found that treatment lowers state expenses for corrections, health, and welfare spending, ultimately saving \$5.62 for each dollar spent toward treatment (as cited in the National Center on Addiction and Substance Abuse, 2001, p. 82). Since fewer clients enrolled in the Illinois Statewide Treatment Outcomes Project (ISTOP) were receiving public assistance at follow-up than at admission, the state projected a \$33 million annual savings if public assistance costs were eliminated throughout the treatment population (Bruni, Jacob, & Robb, 2001, p. 3). Clients who undergo treatment often experience significant increases in their personal financial status; ISTOP documented that clients' monthly income rose an average of \$195. This impact was seen also in Washington State, where those who received treatment earned approximately \$145 more per month than did their counterparts who did not receive treatment (as cited in Alterman, Langenbucher, & Morrison, 2001, p. 171). Treatment also lowers clients' individual health care costs; according to Luchansky and Longhi's 1997 study, such expenses were about \$4,500 less than similar costs for untreated clients over a 5-year period (as cited in Alterman, Langenbucher, & Morrison, 2001, p. 170).

Similarly, the state of Tennessee has found that treatment has clear financial advantages over other alternatives. The average annual cost to treat each client in a state facility is \$2,670. This is a good investment, considering that since 1988 I-SATE has consistently found an abstinence rate of about 60% in the follow-up population (Kedia, 2002). Given the estimated yearly cost of approximately \$43,000 in related expenses to taxpayers as a result of untreated substance abuse (as cited in Schneider Institute for Health Policy, 2001, p. 111), the state's effective substance abuse treatment yields considerable benefits to Tennessee taxpayers. The research conducted by I-SATE demonstrates that treatment is both a financially prudent and effective way to help solve the personal and social problems created by substance abuse, such as rising criminal justice expenses, health care expenditures, and productivity losses.

Based on the latest figures, Tennessee spent over \$931 million on issues related to substance abuse (National Center on Addiction and Substance Abuse, 2001, p. 71). Yet only one penny of each dollar was devoted to treatment, prevention, and research. Other alcohol- and drug-related consequences absorbed the remaining 99 cents—costs related to public programs negatively affected by substance abuse such as the criminal justice system (37% of the total), health care services, and child and family assistance. Research suggests that if state and federal financial support of treatment and prevention of drug and/or alcohol abuse were expanded, even more clients would receive the many benefits of treatment, not just reduction of or abstinence from substance abuse and criminal activities but also greater employment, improved familial relationships, and better physical and mental health.

The average annual cost to treat each client in a substance abuse treatment facility in Tennessee is \$2,670, compared with an estimated \$43,000 yearly expense to taxpayers for untreated substance abuse.

References

- Albert, David H. (2004). *Tobacco, alcohol, and other drug abuse trends in Washington State: 2004 report*. Olympia: Washington State Department of Social and Health Services, Division of Alcohol and Substance Abuse.
- Alterman, A. I., Langenbucher, J., & Morrison, R. L. (2001). State-level treatment outcome studies using administrative databases. *Evaluation Review*, 25(2), 162–183.
- Anspach, D. F., & Ferguson, A. S. (2005). *Outcome evaluation of Maine's adult drug treatment court program*. Retrieved June 16, 2005, from <http://maine-gov-images.informe.org/dhhs/bds/osa/pubs/correct/2005/MEADTCPart-1Part2.pdf>
- Appel, P. W., Joseph, H., Kott, A., Nottingham, W., Tasiny, E., & Habel, E. (2001). Selected in-treatment outcomes of long-term methadone maintenance treatment patients in New York State. *The Mount Sinai Journal of Medicine*, 68(1), 55–61.
- Baltimore Substance Abuse Systems, Inc. (2002). *The Baltimore drug and alcohol treatment outcomes study*. Retrieved November 29, 2004, from <http://www.bsasinc.org/StepsToSuccessExecSummary.htm>
- Belenko, S. (2005). *Economic benefits of drug treatment: A critical review of the evidence for policy makers*. Retrieved June 13, 2005, from http://www.adpana.com/EconomicBenefits_2005Feb.pdf
- Brolin, M. F. (2000, June). *Substance abuse treatment outcomes and system improvements, Bureau of Substance Abuse Services, Massachusetts Department of Public Health*. Retrieved October 12, 2004, from <http://www.mass.gov/dph/bsas/publications/forms/outcomes.pdf>
- Bruni, M., Jacob, B., & Robb, S. (2001). *The effectiveness of substance abuse treatment in Illinois: Results of the Illinois Statewide Treatment Outcomes Project*. Chicago: Illinois Department of Human Services, Office of Alcoholism and Substance Abuse.
- Bureau of Alcohol and Drug Abuse Services. (2004). *Administrative and program requirements and scopes of services*. Nashville: Tennessee Department of Health.

- Center for Substance Abuse Treatment (CSAT). (1999, January). Effective treatment saves money. *Substance Abuse in Brief*, 1–4.
- Community Health Research Group, University of Tennessee-Knoxville. (2000, June). *Tennessee ATOD survey: Assessing adults' need for alcohol and other drug treatment services, statewide and regionally, Tennessee*. Knoxville, TN: Author.
- Connecticut Department of Mental Health and Addiction Services. (2003). *Getting better: A study of addiction services in Connecticut*. Retrieved October 27, 2003, from <http://www.dmhas.state.ct.us/oppas/TOPPSII.pdf>
- Flynn, P. M., Craddock, S. G., Hubbard, R. L., Anderson, J., & Etheridge, R. M. (1997). Methodological overview and research design for the Drug Abuse Treatment Outcome Study (DATOS). *Psychology of Addictive Behaviors*, 11, 230–243.
- Flynn, P. M., Simpson, D. D., Anglin, M. D., & Hubbard, R. L. (2001). Comment on “Nonresponse and selection bias in treatment follow-up studies” [Letter to the editor]. *Substance Use and Misuse*, 36(12), 1749–1751.
- Gerstein, D. R., & Johnson, R. A. (2000). Nonresponse and selection bias in treatment follow-up studies. *Substance Use and Misuse*, 35(6–8), 971–1014.
- Greenfeld, L. A. (1998). *Alcohol and crime: An analysis of national data on the prevalence of alcohol involvement in crime*. Retrieved October 30, 2003, from the Office of Justice Programs website: <http://www.ojp.usdoj.gov/bjs/pub/pdf/c.pdf>
- Hawaii Department of Health, Alcohol and Drug Abuse Division. (2001). *Public health resources: Alcohol and drug abuse*. Retrieved October 13, 2004, from <http://www.hawaii.gov/health/substance-abuse/prevention-treatment/treatment/adtrtwo.htm>
- Heflinger, C. A., & Flowers, A. (2002, March-April). Teen substance abuse: Treatment lessons learned from TennCare. *Behavioral Health Management*, 22(2), 10.
- Iowa Consortium for Substance Abuse Research and Evaluation (SCARE), Iowa Department of Public Health. (2004). *Outcomes monitoring system, Iowa project: Year six report*. Iowa City: Author.
- Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (2003). *Monitoring the future: National results on adolescent drug use. Overview of key findings, 2002*. Bethesda, MD: National Institute of Drug Abuse.
- Kedia, S. (2002, October). Substance abuse treatment effectiveness in Tennessee. *TAADAS Times*, p. 2.

- Kedia, S. (2004). Substance abuse patterns in Tennessee from 1998 to 2002. *The SAT Report*, 1(1), 1–4.
- Kedia, S. & Perry, S. (2005). Factors associated with client-collateral agreement in substance abuse post-treatment self-reports. *Addictive Behaviors*, 30(6), 1086–1099.
- Mee-Lee, D., Shulman, G. D., Fishman, M., Gastfriend, D. R., & Griffith, J. H. (Eds.). (2001). *ASAM patient placement criteria for the treatment of substance-related disorders (ASAM PPC-2R)*. Chevy Chase, MD: American Society of Addiction Medicine, Inc.
- Metsch, L. (2002). *The importance of substance abuse treatment in welfare-to-work transitions*. Winston-Salem, NC: Substance Abuse Policy Research Center.
- National Association of State Alcohol and Drug Abuse Directors (NASADAD). (2001). *Alcohol and drug treatment effectiveness: A review of state outcome studies*. Retrieved June 15, 2005, from <http://www.nasadad.org/Departments/Research/TreatmentEffectivenessFinalReport.pdf>.
- National Center for Health Statistics. (2005). *Early release of selected estimates based on data from the January-September 2004 National Health Interview Survey (NHIS)*. Retrieved June 20, 2005, from http://www.cdc.gov/nchs/data/nhis/earlyrelease/200506_09.pdf
- National Center on Addiction and Substance Abuse (CASA). (2001, January). *Shoveling up: The impact of substance abuse on state budgets*. Retrieved October 14, 2004, from <http://www.casa.columbia.org/pdshopprov/files/47299a.pdf>
- New York State Office of Alcoholism and Substance Abuse Services (OASAS). (1998). *The costs and consequences of addiction and the benefits of prevention and treatment*. Retrieved October 30, 2003, from http://www.oasas.state.ny.us/pio/cc_1998.pdf
- Office of Applied Studies, Substance Abuse and Mental Health Services Administration. (2005). Substance use during pregnancy: 2002 and 2003 update. *The NSDUH Report* (June 2): 1–3. Available from <http://www.oas.samhsa.gov>
- Office of Applied Studies, Substance Abuse and Mental Health Services Administration. (2004a). Gender differences in substance abuse dependence and abuse. *The NSDUH Report* (October 29): 1–3. Available from <http://www.oas.samhsa.gov>
- Office of Applied Studies, Substance Abuse and Mental Health Services Administration. (2004b). Adolescent treatment admissions: 1992 and 2002. *The DASSIS Report* (October 16): 1–3. Available from <http://www.oas.samhsa.gov>

- Office of Applied Studies, Substance Abuse and Mental Health Services Administration. (2004c). Treatment admissions in urban and rural areas involving abuse of narcotic painkillers: 2002 update. *The DASIS Report* (August 6): 1–3. Available from <http://www.oas.samhsa.gov>
- Office of Applied Studies, Substance Abuse and Mental Health Services Administration. (2002). Black admissions to substance abuse treatment. *The DASIS Report* (March): 1–3. Available from <http://www.samhsa.gov/oas/facts.cfm>
- Office of National Drug Control Policy. (2001, September). *The economic costs of drug abuse in the United States, 1992-1998* (Publication No. NCJ-190636). Retrieved July 7, 2002, from http://www.whitehousedrugpolicy.gov/publications/pdf/economic_costs98.pdf
- Office of National Drug Control Policy. (2004). *Pulse Check: Drug markets and chronic users in 25 of America's largest cities*. Washington, DC: Executive Office of the President, Office of National Drug Control Policy.
- Portney, L. G., & Watkins, M. P. (2000). *Foundations of clinical research: Applications to practice* (2nd ed.). Upper Saddle River, NJ: Prentice Hall Health.
- Quirke, M. (2002). *An initial look at the effectiveness of treatment for alcohol and drug use disorders in Wisconsin: Executive summary of the "Wisconsin Adult Addictions Treatment Outcomes Measurement Pilot Project."* Retrieved June 10, 2005, from <http://dhfs.wisconsin.gov/subst Abuse/Publications/Reports/Txoutcomes.pdf>
- Schildhaus, S., Gerstein, D., Brittingham, A., Cerbone, F., & Dugoni, B. (2000). Services Research Outcomes Study (SROS): Overview of drug treatment population and outcomes. *Substance Use and Misuse*, 35(12–14), 1849–1877.
- Schneider Institute for Health Policy, Brandeis University. (2001). *Substance abuse: The nation's number one health problem*. Princeton, NJ: Robert Wood Johnson Foundation.
- Simpson, D. D., Joe, G. W., & Broome, K. M. (2002). A national 5-year follow-up of treatment outcomes for cocaine dependence. *Archives of General Psychiatry*, 59, 538–544. Retrieved October 24, 2003, from <http://www.datos.org/adults/adults-5yrout.html>
- South Carolina Department of Alcohol and Other Drug Abuse Services. (2003, May). Personal communication.
- Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services. (1997). *The National Treatment Improvement Evaluation Study (NTIES): Highlights*. Retrieved October 27, 2003, from <http://www.health.org/govstudy/f027/>

- Substance Abuse and Mental Health Services Administration, Office of Applied Studies, U.S. Department of Health and Human Services. (2000). *Treatment Episode Data Set (TEDS), 1993-1998*. Retrieved October 8, 2004, from <http://www.trebach.com/conference-2001/TEDSRRepo.pdf>
- Substance Abuse and Mental Health Services Administration, Office of Applied Studies, U.S. Department of Health and Human Services. (2004a). *Drug Abuse Warning Network (DAWN), 2003: Interim national estimates of drug-related emergency department visits*. Retrieved June 14, 2005, from http://dawninfo.samhsa.gov/files/DAWN_ED_Interim2003.pdf
- Substance Abuse and Mental Health Services Administration, Center for Substance Abuse Treatment. (2004b). *Uniform application FY 2005, Substance Abuse Prevention and Treatment Block Grant*. Retrieved October 8, 2004, from <http://tie.samhsa.gov/documents/pdf/FY2005SAPTBG.pdf>
- Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services. (2004c). *Results from the 2003 National Household Survey on Drug Abuse*. Retrieved October 14, 2004, from <http://www.oas.samhsa.gov/NHSDA/2k3results.htm#7.3>
- Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services. (2004d). *SAMHSA News, 12* (March-April). Retrieved February 17, 2005, from http://alt.samhsa.gov/samhsa_news/VolumeXII_2/article1.htm
- U.S. Department of Health and Human Services. (2000, June). *Tenth special report to the U.S. Congress on alcohol and health: Highlights from current research*. Retrieved November 3, 2002, from <http://www.niaaa.nih.gov/publications/10report/intro.pdf>
- Walker, R., Logan, T. K., Bradshaw, G., Leukefeld, C., Goltz, M., & Stevenson, E. (2003). *Kentucky substance abuse treatment outcome study* (CDAR Technical Report No. 2004-03). Lexington, KY: University of Kentucky Center on Drug and Alcohol Research.
- Wright, D., & Sathe, N. (2005). *State estimates of substance use from the 2002–2003 National Surveys on Drug Use and Health* (DHHS Publication No. SMA 05-3989, NSDUH Series H-26). Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies.

Tennessee Agencies Funded by the Bureau of Alcohol and Drug Abuse Services

1. Agape, Inc. www.agapeinc.org	Knoxville	(865) 525-1661
2. Buffalo Valley, Inc. www.buffalovalley.com	Hohenwald	(800) 447-2766
3. Care of Savannah, Inc.	Savannah	(731) 925-8619
4. Carey Counseling Center, Inc. http://www.bhillc.org/careyexternalweb/	Paris	(731) 642-0521
5. Centerstone Community Mental Health Centers, Inc. www.centerstone.org	Nashville	(615) 463-6600
6. Child and Family Tennessee www.child-family.org	Knoxville	(865) 524-7483
7. Cocaine and Alcohol Awareness Program, Inc. (CAAP) http://caapincorporated.com/	Memphis	(901) 272-2227
8. Comprehensive Community Services, Inc. (CCS)	Johnson City	(423) 928-6581
9. Council for Alcohol and Drug Abuse Services, Inc. (CADAS) www.cadas.org	Chattanooga	(423) 756-7644
10. E. M. Jellinek Center, Inc.	Knoxville	(865) 525-4627
11. The Florence Crittenton Agency, Inc. http://www.discoveret.org/fca/	Knoxville	(865) 602-2021
12. Fortwood Center, Inc.	Chattanooga	(423) 266-6751
13. Foundations Associates http://www.dualdiagnosis.org/	Nashville	(615) 256-9002
14. Frayser-Millington North Shelby Mental Health Center, Inc.	Memphis	(901) 353-5440
15. Frontier Health www.frontierhealth.org	Gray	(423) 467-3600
16. Grace House of Memphis	Memphis	(901) 722-8460
17. The Government of Knox County	Knoxville	(865) 215-5310
18. Harbor House www.harborhousememphis.org	Memphis	(901) 743-1836
19. Helen Ross McNabb Center www.mcnabbcenter.org	Knoxville	(865) 637-9711
20. Hope of East Tennessee, Inc. www.hopeofet.org	Oak Ridge	(865) 482-4826

21. Jackson Area Council on Alcoholism and Drug Dependency (JACO) www.jacoa.org	Jackson	(731) 423-3653
22. Knoxville-Knox County Community Action Committee http://www.knoxcac.org/	Knoxville	(865) 546-3500
23. Meharry Medical College dba Lloyd C. Elam Mental Health Center www.mmc.edu/MMC/VisCtr/Home/Buildings/Elam.html	Nashville	(615) 327-6609
24. Memphis City Schools Mental Health Center http://www.memphis-schools.k12.tn.us/admin/communications/Dept_Curriculum/DEC/Mental_Health_Center.html	Memphis	(901) 325-5810
25. Memphis Recovery Centers, Inc. www.memphisrecovery.com	Memphis	(901) 272-7751
26. Metropolitan Government of Nashville and Davidson County	Nashville	(615) 340-5602
27. Midtown Mental Health Center http://www.midtownmentalhealth.org/	Memphis	(901) 577-9470
28. New Directions, Inc.	Memphis	(901) 327-4244
29. New Hope Recovery Center www.newhoperecovery.com	Morristown	(423) 581-2411
30. The Pathfinders, Inc. www.pathfinderstn.org	Gallatin	(615) 452-5688
31. Pathways of Tennessee, Inc.	Jackson	(731) 935-8200
32. Parkwest Medical Center http://www.fsparkwest.com/fspw-home.cfm	Louisville	(865) 970-9800
33. Place of Hope	Columbia	(931) 388-9406
34. Professional Counseling Services, Inc. http://bhillc.org/index.htm	Covington	(901) 476-8967
35. Quinco Community Mental Health Center, Inc. http://www.bhillc.org/quincoweb/	Bolivar	(731) 658-6113
36. Renewal House, Inc. http://www.renewalhouse.org/index.html	Nashville	(615) 255-5222
37. Samaritan Recovery Community, Inc. http://www.samctr.org/	Nashville	(615) 244-4802
38. Serenity Recovery Center, Inc. http://www.serenityrecovery.org/	Memphis	(901) 521-1131
39. The Synergy Foundations, Inc.	Memphis	(901) 332-2227
40. T.A.M.B. of Jackson Tennessee, Inc.	Jackson	(731) 427-7238
41. The Tony Rice Center, Inc. www.tonyricecenter.com	Shelbyville	(931) 685-0957
42. Volunteer Behavioral Healthcare System	Chattanooga	(423) 756-2740
43. Whitehaven Southwest Mental Health Center, Inc.	Memphis	(901) 259-1920

**Institute for Substance Abuse Treatment Evaluation (I-SATE)
The University of Memphis**

316 Manning Hall
Memphis, Tennessee 38152-3390
Phone: (901) 678-1753
Fax: (901) 678-0707
www.isate.memphis.edu

**Bureau of Alcohol and Drug Abuse Services
Tennessee Department of Health**

William R. Snodgrass Tennessee Tower
26th Floor, 312 8th Avenue North
Nashville, Tennessee 37247-4401
Phone: (615) 741-1921
Fax: (615) 532-2419
www2.state.tn.us/health/A&D

**Tennessee Association of Alcohol and Drug Abuse Services
TAADAS Statewide Clearinghouse**

One Vantage Way, Suite B-240
Nashville, Tennessee 37228
Phone: (615) 780-5901
Fax: (615) 780-5905
www.tnclearinghouse.com
Redline Phone: (800) 889-9789

