



KTOS ANNUAL OUTCOMES REPORT

2012

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KTOS Annual Follow-up Report 2012

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The Kentucky Substance Abuse Treatment Outcome Study 2012 Follow-up Findings report is available as a PDF file on the University of Kentucky Center on Drug and Alcohol Research website at <http://cdar.uky.edu/bho>

EXECUTIVE SUMMARY

The 2012 Kentucky Substance Abuse Treatment Outcome Study (KTOS) report presents findings on outcomes for 1,225 adults who received treatment in publicly funded community-based substance abuse treatment programs in Kentucky in FY 2010 and who completed a follow-up interview in FY 2011. Clients in this study participated in a variety of treatment modalities: residential inpatient, outpatient, intensive outpatient, case management, detoxification, and other services such as longer term transitional living and halfway houses. Report findings support continued funding of substance abuse treatment programs which improve the lives of clients and greatly reduce the cost of untreated substance abuse to society. State funded substance abuse programs in Kentucky are required by Kentucky Regulated Statute (222.465) to collect data on substance abuse clients as they enter treatment. KTOS is an important part of the Division of Behavioral Health's performance-based measurement of treatment outcomes in Kentucky's communities.

Clients in the FY 2010 KTOS follow-up sample were on average 33 years old, white (90%), and over half were male (54%). The sample reported high levels of interpersonal victimization with more women than men reporting each category of exposure to emotional, physical, and sexual abuse. Over half of the sample were charged with crimes before entering treatment and had spent time in jail in the past 12 months. Almost 9 of 10 individuals were regular tobacco users at intake. Over half of the sample reported using alcohol to intoxication and over half reported use of non-prescribed opiates at intake to treatment. Despite this snapshot which shows a bleak picture of alcohol abuse, illicit

drug use, criminal justice system involvement, and victimization, 12-month follow-up outcomes for the sample were very positive.

This report's findings show that clients in Kentucky benefit from substance abuse treatment in multiple ways: achieving abstinence, reducing the frequency of their substance use, increasing their employment and income, decreasing their involvement with the criminal justice system, and increasing their recovery supports.

ABSTINENCE

Abstinence rates for the sample at follow-up were significantly improved after treatment. Over three-fourths of clients reported no illicit drug use or alcohol use at follow-up. Tobacco use remained high at follow-up.

EMPLOYMENT

Full-time employment rates increased significantly from intake (29%) to follow-up (36%) as did the proportion of days clients reported being paid for work (7/30 days at intake to 10/30 at follow-up).

CRIMINAL JUSTICE SYSTEM INVOLVEMENT

Significant decreases in arrests, particularly for drug offenses, DUI, property offenses, and parole/probation violations were seen at follow-up for this sample. Men and younger individuals were more likely to be incarcerated before follow-up. Individuals who used illicit drugs during the follow-up period were 2.5

times more likely to be incarcerated during that same period compared to individuals who abstained from illicit drug use by follow-up. Individuals who were referred to treatment by the criminal justice system were less likely to use alcohol or illicit drugs by follow-up than individuals from other referral sources.

PROTECTIVE FACTORS AGAINST RELAPSE

Significantly, more clients reported use of AA/NA recovery self-help groups at follow-up. In addition, the average number of people reported as supporting the client in recovery jumped from 8 to 36 at follow-up.

COST OF DRUG AND ALCOHOL ABUSE

Calculating the cost of treatment for KTOS clients and comparing that cost to the overall societal costs of drug and alcohol abuse, we find there is a savings of \$4.24 for every dollar spent on treatment controlling for other important factors.

The integration of tobacco cessation programs into substance abuse treatment programs should be a priority as programs offering tobacco cessation interventions are still in the minority

For every dollar spent on treatment for this sample of clients who were in treatment in FY 2010, the avoided costs can be estimated as \$4.24.

INTRODUCTION

The 2012 Kentucky Substance Abuse Treatment Outcome Study (KTOS) report presents findings on outcomes for 1,225 adults who received treatment in publicly funded community-based substance abuse treatment programs in Kentucky in FY 2010 and who completed a follow-up interview in FY 2011. Clients in this study participated in a variety of treatment modalities: residential inpatient, outpatient, intensive outpatient, case management, detoxification, and other services such as longer term transitional living and halfway houses. Report findings support continued funding of substance abuse treatment programs which improve the lives of clients and greatly reduce the cost of untreated substance abuse to society. State funded substance abuse programs in Kentucky are required by Kentucky Regulated Statute (222.465) to collect data on substance abuse clients as they enter treatment. KTOS is an important part of the Division of Behavioral Health's performance-based measurement of treatment outcomes in Kentucky's communities.

Abuse and dependence on drugs and alcohol is a chronic health disorder, which requires repeated intervention, continuous monitoring, and maintenance to achieve favorable results (Chalk, 2008). About 30-50% of diabetic persons follow prescribed medication schedules one year post-diagnosis, while 50-70% of persons with hypertension and persons with asthma fully adhered to medication regimen (McLellan et al., 2000). Compared with these chronic health disorder compliance rates, substance abuse treatment is successful, with 40-60% of individuals who received substance abuse treatment remaining abstinent one year following treatment.

Typically, substance abuse treatment programs have needed to show cost offsets whereby treatment costs are outweighed by short-term savings in other social costs. This formulation is extremely short-sighted and fails to account for the long term nature of addictive disease and the longer term gains to society from increased abstinence among substance abuse clients. The short-term cost offset studies have shown that substance abuse treatment yields savings of 4 to 10 times the cost of treatment (Harwood, 2008). Over the years, KTOS findings report short-term avoided costs ranging from \$3.50 to over \$5.00 offsets by every dollar spent on treatment.

Client substance abuse, employment, education, health, and criminal justice involvement factors were examined at intake and at follow-up. Intake data were collected by clinicians in the 14 community mental health centers that are under contract with the Kentucky Division of Behavioral Health to provide treatment services using federal Substance Abuse Treatment Block Grant funds as well as state general funds. Follow-up data is collected via telephone by the research team, which operates independently of the Division of Behavioral Health, at the University of Kentucky Center on Drug and Alcohol Research.

This report's findings show that clients in Kentucky benefit from substance abuse treatment in multiple ways: achieving abstinence, reducing the frequency of their substance use, increasing their employment and income, decreasing their involvement with the criminal justice system, and increasing their recovery supports.

STUDY METHOD

The KTOS evaluation uses a pre- and post-test research design, meaning that client data is collected face-to-face at treatment intake and compared to data collected during phone interviews at follow-up 12 months later. All publicly funded substance abuse treatment programs in Kentucky are required to collect intake data on individuals entering treatment. Pre-test client data are collected at intake by clinicians on-site via a structured web-based questionnaire. Clients choose to participate in the follow-up study voluntarily. Clinicians explained the follow-up study and asked clients about their interest in participating. Clients who agreed to participate were required to give informed consent using the electronic consent form on the web questionnaire approved by the University of Kentucky Medical Institutional Review Board (IRB) and the Cabinet for Health and Family Services IRB.

It was not possible to collect follow-up data for all clients who received treatment in FY 2010 because not all clients gave consent to be contacted for the follow-up study and because of budgetary and time constraints. Out of the 5,542 clients who completed an intake survey, 3,403 agreed to be contacted for the follow-up study. From this group of individuals who voluntarily agreed to be contacted for the follow-up study, the research team pulled the follow-up sample by first identifying individuals who had provided the minimum acceptable amount of contact information (e.g., two phone numbers or one phone number and one address), and then randomly selecting over half of the clients by intake month (n = 2,038).

Post-test data are collected by interviewers on the research team at the University of Kentucky Center on Drug and Alcohol Research via telephone 12 months after the intake survey. Out of the 2,038 individuals included in the sample, 371 were ineligible for participating in the follow-up interview for a variety of reasons (e.g., incarcerated, in residential treatment, deceased), which left 1,667 clients eligible for the follow-up, and of these clients, 1,225 completed a follow-up survey (see Appendix I). Thus, the follow-up rate was 73.5%. The remaining clients either refused (1.4%) to complete the follow-up interview, were never successfully contacted or if contacted, never completed the follow-up survey (24.8%). See Appendix I for more detailed information on (1) comparisons between consenting and non-consenting clients, (2) comparisons between clients who were selected into the sample to be followed up and those who were not, and (3) comparisons between clients who were followed up and clients who were not followed up.

To participate in the follow-up study, clients must volunteer and give informed consent. During the consent process, clients are informed that the research staff at the University of Kentucky has obtained a Certificate of Confidentiality from the U.S. Department of Health and Human Services to protect the research team from being forced to release client-identifying data to law enforcement or other government agencies. Identifying data are encrypted as the data are entered into the PDA or upon submission through the online data collection tools. Electronic data is stored on password protected computers and servers in secure facilities.

The data collection instrument for this study builds on the Addiction Severity Index (ASI) (McLellan, Kushner, Metzger, Peters, Smith, Grissom, Pettinati, & Argeriou, 1992) and uses selected items from the Center for Substance Abuse Treatment (CSAT) Government Performance Reporting Act (GPRA) (Mulvey, Atkinson, Avula, & Luckey, 2005). In addition, select items from the WHOQOL-100 are included to provide information about the client's health. Further, selected measures of chronic pain and adapted items from the Ohio Valley TBI Screen for traumatic brain injury have been incorporated into the instrument. The ASI substance abuse measures are used to calculate severity on an individual case level since the index thresholds have been found to predict alcohol and drug dependence. The Desire for Help subscale of the Texas Christian University Client Evaluation of Self and Treatment Intake version (TCU-CEST) subscale is included in the intake survey to assess motivation for treatment and recovery supports.

Most of the questions in the follow-up survey are identical to the baseline measures except for lifetime items, which are not repeated. Additional questions in the follow-up interview focused on eliciting clients' satisfaction with the treatment experience. Other additions to the follow-up survey are a measure of perceived stress (PSS; Cohen et al., 1983), a measure of subjective social standing (Adler et al., 2000), economic hardship (She & Livermore, 2007), and self-control (Brief Self-Control Scale [Brief SCS]; Tangney et al., 2004).

In addition to the intake and follow-up interviews, service utilization data for clients included in the follow-up study were obtained from the state's service event files that are used to report to the federal Treatment Episode Data Set (TEDS). These data were then matched to the state's cost reports for cost of each service event by unit of service. These cost data were used in the cost offset section of this report. Clients consented to the use of these data. Thus, treatment outcomes were examined using service event data and cost - per-client information for all treatment events.

DATA ANALYSIS

The study examines change from intake to follow-up using several major analytic approaches. First, change in the percentage of clients reporting abstinence from particular substances, various living arrangements, occupational statuses, education, and criminal justice system involvement was calculated using a z test for proportions to determine if the change was statistically significant.

Second, policy makers who have relied on these report findings indicated that calculations of percent change in numbers of clients reporting abstinence at intake and follow-up were important to understanding treatment effectiveness. This report presents not only differences in the number and percentage of clients reporting a condition or behavior, but also a calculation of the rate of change from intake to follow-up. So, for example, let's say 100 clients reported working full-time at intake and this represented 25% of all clients in the follow-up sample (n=400). At follow-up, 150 clients, or 37.5% of the 400 now report working full-time. The absolute *difference* between the percent at intake and follow-up is 12.5%, but the rate of change is 50% - that is, there was a 50% increase in clients employed fulltime (50 new clients working as a percent of the original 100). The calculation of the percent of change represents the *relative* change in a variable over time. It is essentially a *rate* of change calculation just like the one that people use to calculate the percent of raise they might get with a promotion. Percent of change is calculated based on n values at intake (n1) and 12-month follow-up (n2) using the formula: $[(n2 - n1)/n1] \times 100$. A positive percent change corresponds to an increasing trend, a negative percent change to a decreasing trend.

Third, this report makes use of recent research on the validity of the Addiction Severity Index (ASI) composite scoring, by examining change from intake to follow-up in the percentage of clients who met a cutoff score indicative of alcohol or drug dependence. The ASI composite thresholds have been positively correlated with DSM-IV diagnostic criteria for alcohol and drug dependence (Rikoon et al., 2006), which allows the research team to anchor findings in the clinical severity of substance use, based on client's self-reported substance use.

Fourth, multivariate analysis was used to examine associations between demographics, employment, health, criminal justice system involvement, recovery supports and abstinence during the 12-month follow-up period. Multivariate analysis, albeit more difficult to present to lay audiences in a comprehensible manner, allows associations between abstinence and key factors (such as employment status) to be explored, while controlling for the effects of other important factors such as gender, age, race, and substance use at intake.

For this study and sample size, change was presented as significant if it met a p value of at least <.01. Non-significant change data are represented for completeness, but differences should be read as artifactual or random differences rather than a pattern of significant change.

STUDY LIMITATIONS

Every research study has limitations and this study's findings must also be considered within the context of its limitations. First, a randomized sample selection method is not possible, thus the representativeness of the sample is limited, as are the generalizability of findings. To further address concerns about the representativeness of the sample, the characteristics of follow-up clients are compared each year to characteristics of all clients in the Kentucky treatment population, as well as all clients included in the intake sample for KTOS (see Appendix). Second, validity and reliability of self-reports of substance use are sometimes questioned, recent research supports earlier findings about the reliability and accuracy of self-reported substance use (Del Boca & Noll, 2000; Harrison, Martin, Enev, & Harrington, 2007; Rutherford, Cacciola, Alterman, McKay, & Cook, 2000; Shannon, Mathias, Marsh, Dougherty, & Liguori, 2007). Earlier studies found

the context of the interview influences reliability (Babor, Stephens, & Marlatt, 1987) and generally self-report even at the beginning of treatment, as well as during treatment, has been shown to be reliable (Rutherford, et al., 2000). Third, since treatment varies considerably from site to site, the KTOS study does not examine specific treatment-related effects nor does it analyze differences between programs or program types with regard to treatment outcomes. Furthermore, because of limitations in the service event data set, it is not possible to compare data for individuals who completed treatment and clients who terminated treatment early. Within the context of these limitations, this evaluation provides important information on the benefits to clients and Kentucky citizens of providing substance abuse treatment to individuals.

DESCRIPTION OF FOLLOW-UP SAMPLE AT INTAKE

DEMOGRAPHICS

A little more than a half of the FY 2010 KTOS clients were male (see Table 1). In FY 2010, the average age was 32.6. The majority of the sample was White (90.1%) and 40.4% had never been married. The vast majority of the sample reported living in a stable arrangement at intake.

TABLE 1. DEMOGRAPHIC CHARACTERISTICS OF THE FOLLOW-UP SAMPLE AT INTAKE (n = 1225)

	PERCENT
GENDER	
Male	53.5%
Female	46.5%
MEAN AGE	
(Min., Max.: 18-71 years)	32.6 years
RACE	
White	90.1%
Black/African American	7.6%
Multiracial	0.1%
Other race/ethnicity (e.g., Native American, Hispanic, Asian, other)	2.2%
MARITAL STATUS	
Never married	40.4%
Married	19.8%
Separated	7.6%
Divorced	21.0%
Cohabiting	9.6%
Widowed	1.6%
USUAL LIVING ARRANGEMENT IN THE PAST 12 MONTHS	
Stable living arrangement (alone, with partner, with children, family or friends)	91.5%
In a controlled environment	7.1%
No stable arrangement (street, shelter)	1.5%

Almost three-fourths of KTOS clients (72.2%) in the FY 2010 follow-up sample had a high school diploma/GED or higher level of education at intake. Less than one-third (29.3%) reported their usual employment status in the past 12 months was full-time work. A little less than one-fourth (24.2%) reported their usual employment in the past 12 months was unemployed, looking for work. The FY 2010 sample overall reported paid work only an average of 6.3 days out of the past 30 days. Of those who reported working at least one day in the past 30 days, clients reported an average of 17.4 days paid for working. The average monthly income KTOS clients reported was \$634. Just over one-half of clients reported having a valid driver's license and of those, 82.0% had an automobile for use.

TABLE 2. EDUCATION, EMPLOYMENT, AND INCOME AT INTAKE (n = 1225)

	PERCENT OR MEAN
HIGHEST LEVEL OF EDUCATION COMPLETED	
Less than GED or high school diploma	27.8%
GED or high school diploma	41.0%
Some vocational/technical school to graduate studies	31.2%
EMPLOYMENT	
Usual employment status in the past 12 months	
Employed full-time	29.3%
Employed part-time including irregular, seasonal)	20.6%
Unemployed, looking for work	24.2%
Unemployed, not looking for work (retired, disabled, student, in a controlled environment)	25.9%
Mean # of days paid for working in the past 30 days	6.3 days
Of those who were paid for work at least one day in the past 30 days (n = 443)	
Mean # of days paid for working	17.4 days
INCOME	
Mean income from all sources in the past 30 days	\$634
TRANSPORTATION	
Has a valid driver's license	54.5%
Of those with a valid driver's license (n = 668)	
Has an automobile available for use	82.0%
Of those with an automobile available for use (n = 528)	
Owens the automobile	75.4%

LIFETIME INTERPERSONAL VICTIMIZATION

Interpersonal victimization was commonly reported in the lives of FY 2010 KTOS clients (see Table 3). Significantly more women reported experiencing each type of victimization (e.g., emotional, physical, and sexual) in their lifetime compared to men. Over 23% of male clients and almost 61% of female clients reported having experienced emotional abuse in their lifetime. Of those who reported emotional abuse, nearly half of males were emotionally abused by an adult family member. Two-thirds of women who experienced emotional abuse reported that an intimate partner perpetrated the abuse (65.4%), which was significantly more than the percent of men who experienced emotional abuse by an intimate partner (20.5%). Of the women who experienced emotional abuse, 41.2% reported the emotional abuse was perpetrated by an adult family member. Among those individuals who reported emotional abuse in their lifetime, significantly more men than women reported a peer perpetrated the abuse.

Less than one-half of men (45.8%) and about three out of five women (62.1%) reported experiencing physical abuse in their lifetime. For women, the most commonly reported perpetrator was an intimate partner (75.1%), which was a significantly higher percentage than men (17.7%). For men, over half (55.3%) reported the physical abuse was perpetrated by an adult who was not a family member or intimate partner. Significantly more men reported physical abuse by a peer compared to women (14.7% vs. 3.7%).

Finally, 8.1% of men and 43.5% of women in the KTOS follow-up sample reported lifetime sexual abuse. For both groups, the largest perpetrator categories were adult family members (35.8% for men and 42.7% for women), and adults who were not family members or intimate partners (45.3% for men and 48.0% for women). Significantly, more women who experienced sexual abuse reported the perpetrator was an intimate partner compared to men who experienced sexual abuse.

TABLE 3. PERCENT OF CLIENTS REPORTING AT INTAKE LIFETIME INTERPERSONAL VICTIMIZATION (N = 1225)

	MEN n = 655	WOMEN n = 570
EMOTIONAL ABUSE**	23.8%	60.9%
Of those who reported any emotional abuse (n = 542), percent of clients who reported abuse was perpetrated by:	n = 195	n = 347
Adult family member	48.2%	41.2%
Intimate partner**	20.5%	65.4%
Other adult who is not a family member or intimate partner*	36.9%	23.9%
Sibling	20.5%	15.0%
Peer**	25.6%	8.6%
Someone else	2.1%	1.7%
PHYSICAL ABUSE**	45.8%	62.1%
Of those who reported any physical abuse (n = 654), percent of clients who reported abuse was perpetrated by:	n = 300	n = 354
Adult family member	31.0%	28.2%
Intimate partner**	17.7%	75.1%
Other adult who is not a family member or intimate partner**	55.3%	17.8%
Sibling	12.0%	9.0%
Peer**	14.7%	3.7%
Someone else	4.5%	2.5%
SEXUAL ABUSE**	8.1%	43.5%
Of those who reported any sexual abuse (n = 301), percent of clients who reported abuse was perpetrated by:	n = 53	n = 248
Adult family member	35.8%	42.7%
Intimate partner*	0.0%	15.7%
Other adult who is not a family member or intimate partner	45.3%	48.0%
Sibling	3.8%	10.1%
Peer	11.3%	4.0%
Someone else	11.3%	5.2%

*p < .01, **p < .001.

LEGAL AND CRIMINAL STATUS

A little over one-third of clients (34.7%) were admitted to a substance abuse treatment program via a referral by the criminal justice system, 17.1% were referred based upon a DUI, and 13.6% were referred by a state children or adult protective agency. There were significant differences in referrals by gender. Significantly more men than women were referred by the criminal justice system (39.4% vs. 29.3%) and based on a DUI (22.1% vs. 11.2%). Further, significantly more women than men were referred by a state child or adult protective agency (25.4% vs. 3.2%).

In addition, 14.2% of FY 2010 KTOS clients reported being in a drug court program at intake, 32.4% were on probation, and 3.9% were on parole.

TABLE 4. REFERRAL TO SUBSTANCE ABUSE TREATMENT AND LEGAL STATUS AT INTAKE (n = 1225)

	PERCENT
ADMISSION/REFERRAL REASON	
Criminal justice system	34.7%
DUI charge	17.1%
State child or adult protective agency	13.6%
Among women (n = 570) the percent whose admission was prompted by pregnancy	4.7%
LEGAL STATUS	
In Drug Court	14.2%
On probation	32.4%
On parole	3.9%

Over half (58.9%) of the KTOS follow-up sample reported having been charged with a crime in the 12 months prior to intake. The most common charges were for drug crimes (22.1%), DUI (17.9%), property crimes (10.4%), and for various other crimes, such as disorderly conduct, public intoxication, failure to comply with court orders (18.7%).

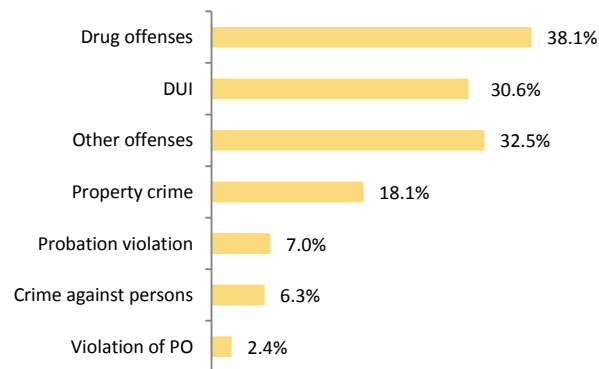
TABLE 5. PERCENT OF CLIENTS WITH SELF-REPORTED ARRESTS IN THE 12 MONTHS BEFORE INTAKE (n = 1225)

	PERCENT OF SAMPLE (n = 1225)
ANY CHARGE	58.9%
OF THOSE WITH AN ARREST	(n = 679) ^a
Mean number of arrests	1.8 arrests
DRUG CHARGE	22.1%
DUI	17.9%
PROPERTY CRIME	10.4%
CRIMES AGAINST A PERSON	3.6%
PROBATION OR PAROLE VIOLATION	5.8%
VIOLATION OF ORDER OF PROTECTION	1.9%
OTHER CRIMES (e.g. contempt, criminal mischief, disorderly conduct, endangering welfare of minor, failure to pay child support, failure to comply with court order, moving violations, public intoxication, trespassing, resisting arrest)	18.7%

a—721 individuals reported arrests in the 12 months before intake; however data on the charges was only available for 679 of these individuals.

A person can be arrested for a crime, but not actually be charged for many months. Of those clients who reported an arrest in the 12 months prior to intake, 38.1% were arrested for a drug charge, 30.6% for a DUI, and 32.5% for other crimes like failure to comply with child support, court orders, and public intoxication.

FIGURE 1. OF THOSE CLIENTS ARRESTED IN THE PAST 12 MONTHS, THE PERCENT THAT REPORTED BEING ARRESTED FOR TYPES OF CRIMINAL OFFENSES (n = 679)



Of the entire follow-up sample, 58.0% were incarcerated for at least one day in the 12 months before intake, 25.9% were incarcerated for at least one day in the 30 days before intake, and 42.9% had convictions in the 12 months before intake. Those who reported being incarcerated in the 12 months prior to intake were incarcerated for an average of 51.2 days. Of those who reported being arrested in the 12 months before intake, 85.2% spent at least one day in prison or jail for an

average of 35.9 days incarcerated in the past 12 months. Of those who reported being arrested in the 12 months before intake, 38.7% were incarcerated in the 30 days before intake.

TABLE 6. INCARCERATION HISTORY AT INTAKE (n = 1225)

	PAST 12 MONTHS	PAST 30 DAYS
OF THE ENTIRE SAMPLE (n = 1225)		
% that were incarcerated at least one day	58.0%	25.9%
% with convictions in the past 12 months	42.9%	--
OF THOSE INCARCERATED		
	(n = 710)	(n = 317)
Mean # of days incarcerated	51.2 days	17.0 days
OF THOSE ARRESTED IN THE PAST 12 MONTHS (n = 721)		
% spending at least one day incarcerated	85.2%	38.7%
Mean # of days incarcerated	35.9 days	6.5 days

SUBSTANCE USE

In the 12 months before entering substance abuse treatment, 87.2% of KTOS clients reported using tobacco products (see Figure 2). In addition, 71.7% reported alcohol use and 55.1% reported using alcohol to intoxication. Just over half the follow-up sample reported marijuana use (51.7%), and illicit use of prescription opiates (53.6%). Almost 40% of KTOS clients reported using tranquilizers (including sedatives, benzodiazepines, hypnotics). Just under one-fourth of clients (23.8%) used cocaine in the 12 months before intake. Smaller numbers of clients reported using non-prescribed methadone (16.4%) and amphetamines (18.4%), with 14.5% using methamphetamine in the 12 months prior to entering treatment. A small percent reported heroin use (6.8%), barbiturates (5.5%), hallucinogens (4.8%), and inhalants (2.4%). Similar patterns of use were found for past 30-day measures of substance use except that fewer clients reported using each substance in the past 30 days compared to the past 12 months (see Figure 3). This may be due to client attempts to reduce substance use prior to treatment entry or the fact that 12 month measures capture occasional use, while 30 day measures focus more on regular use patterns.

FIGURE 2. PERCENT OF CLIENTS REPORTING USE OF SUBSTANCES IN THE 12 MONTHS BEFORE INTAKE (n=1225)

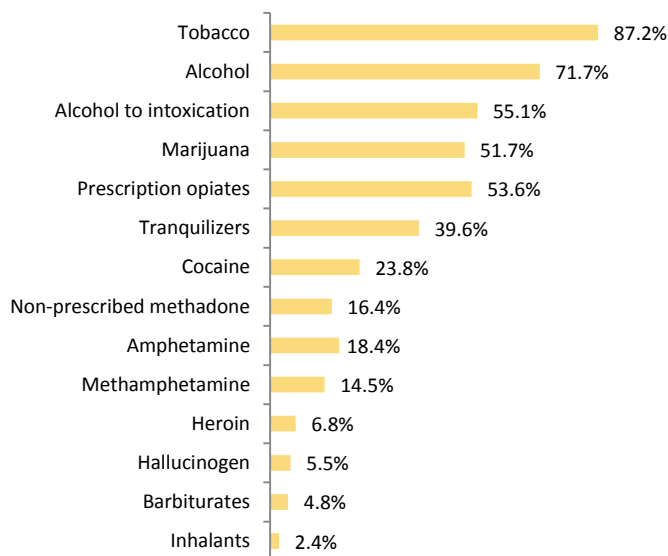
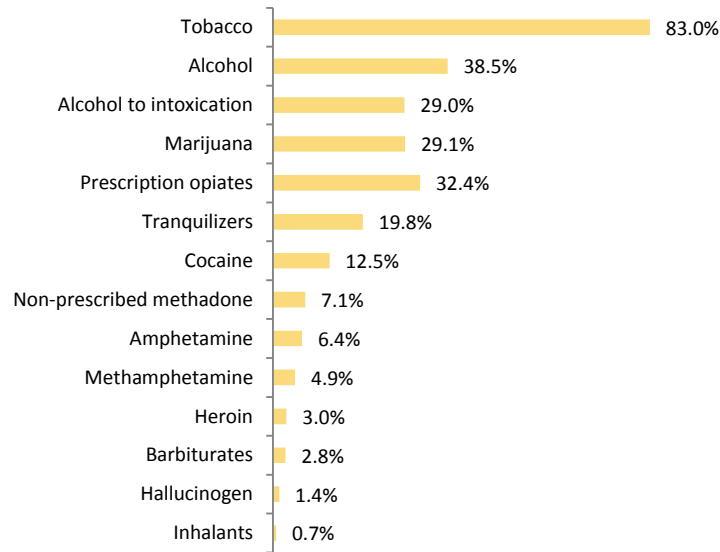


FIGURE 3. PERCENT OF CLIENTS REPORTING USE OF SUBSTANCES IN THE 30 DAYS BEFORE INTAKE (n=1225)



CRITERIA FOR ALCOHOL OR DRUG DEPENDENCE

About 56% of the KTOS follow-up sample reported having been in substance abuse treatment before this current treatment admission with an average of 2.6 prior treatment episodes (see Table 7). An episode of treatment includes intake, assessment, treatment sessions (i.e., medical and non-medical detoxification, outpatient counseling, intensive outpatient, case management, crisis stabilization, therapeutic rehabilitation, and supported employment), and a discharge record. The episode length varies and may also include mental health treatment services for clients with co-occurring depression, anxiety, or other mental health issues.

The Addiction Severity Index (ASI) provides a method for analyzing data from client responses to examine whether or not the individual would most likely meet DSM IV-TR criteria for dependence on drugs or alcohol (Rikoon, Cacciola, Carise, Alterman & McLellan, 2006). ASI composite scores (CS) were compiled for each client in the follow-up sample (See Table 7). More than one third of KTOS clients (38.3%) met or surpassed the ASI CS cutoff for alcohol dependence (0.17) and two out of five (41.8%) met or surpassed the cutoff score for drug dependence (0.16) at intake. Nearly two-thirds of KTOS clients (64.5%) had an ASI composite score (CS) that met or surpassed DSM-IV criteria for alcohol or drug dependence. These average cutoff scores include clients with scores of 0 on the composites. There were 430 clients with scores of 0 for alcohol and 227 on the drug composite score.

TABLE 7. SUBSTANCE ABUSE TREATMENT HISTORY, AND RECENT SUBSTANCE USE PROBLEMS

	PERCENT OR MEAN
SUBSTANCE ABUSE TREATMENT HISTORY	n = 1225
% that had been in substance abuse treatment before current admission	55.8%
AMONG THOSE REPORTING PRIOR TREATMENT (N = 680)	
Mean # of times in treatment	2.6 times
RECENT SUBSTANCE USE PROBLEMS	n = 1090 ^a
Mean ASI CS for alcohol (Score equal to or greater than .17 is indicative of alcohol dependence)	.18 CS
Mean ASI CS for drug use (Score equal to or greater than .16 is indicative of drug dependence)	.16 CS
Percent of clients with ASI CS equal to or greater than cutoff score for ...	
alcohol dependence	38.3%
drug dependence	41.8%
alcohol or drug dependence	64.5%

^a—Individuals who were in a controlled environment all 30 days before intake were excluded from this analysis.

CHANGES IN SUBSTANCE USE FROM INTAKE TO FOLLOW-UP

TOBACCO

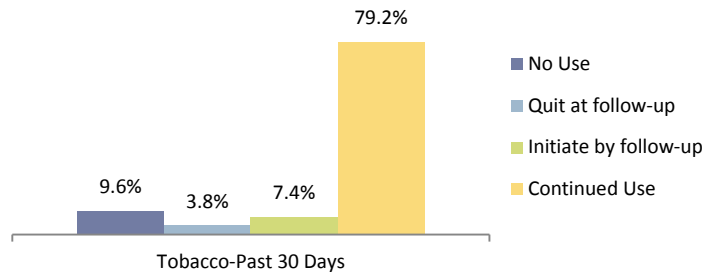
The majority of clients reported using tobacco in the past 30 days at intake (83.0%) and follow-up (86.6%). Only 13.4% of FY 2010 KTOS clients were abstinent from tobacco at follow-up (see Table 8).

TABLE 8. PERCENT OF CLIENTS REPORTING TOBACCO ABSTINENCE IN THE PAST 30 DAYS

	ABSTINENT AT INTAKE		ABSTINENT AT FOLLOW UP	
	n	Valid %	n	Valid %
TOBACCO				
Men (n = 655)	112	17.1%	84	12.8%
Women (n = 570)	96	16.8%	80	14.0%
Total (n = 1225)	208	17.0%	164	13.4%

Figure 4 presents another way to look at tobacco use pre-treatment and post-treatment. Less than 10% of KTOS clients remained abstinent from tobacco products at intake and follow-up while the majority (79.2%) reported past-30-day use of tobacco at intake and follow-up (see Figure 4). Further, only 3.8% of clients used at intake but did not use tobacco at follow-up (i.e., quit), while 7.4% of clients initiated use at follow-up (i.e., initiators).

FIGURE 4. PERCENTAGE OF CLIENTS IN TOBACCO USE GROUPS



Among the clients who reported using tobacco products at intake and follow-up (i.e., continued use), the number of days of use in the past 30 days increased significantly from 26.9 days at intake to 29.4 days at follow-up (see Table 9).

TABLE 9. CHANGE IN NUMBER OF DAYS IN THE PAST 30 DAYS CLIENTS USED TOBACCO FROM INTAKE TO FOLLOW-UP, AMONG THOSE WHO CONTINUED USE

	INTAKE	FOLLOW-UP
TOBACCO		
Men (n = 524)	26.9	29.1**
Women (n = 446)	26.8	29.7**
Total (n = 970)	26.9	29.4**

^a—Significance established using paired t-tests; *p < .01, **p < .001.

INCREASES IN ALCOHOL ABSTINENCE

Table 10 shows that 58.2% of KTOS clients were alcohol abstinent at intake. At follow-up, 66.8% of clients were abstinent from alcohol. Among the individuals who reported drinking alcohol, drinking to intoxication is used to measure alcohol

misuse. At intake, 68.9% of clients reported not using alcohol to intoxication and 79.7% reported they were not drinking alcohol to intoxication by follow-up.

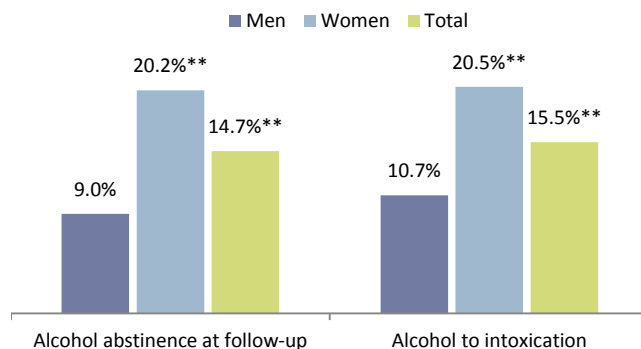
TABLE 10. PERCENT OF CLIENTS REPORTING ALCOHOL ABSTINENCE IN THE PAST 30 DAYS

	ABSTINENT AT INTAKE		ABSTINENT AT FOLLOW UP	
	n	Valid %	n	Valid %
ALCOHOL				
Men (n = 578)	310	53.6%	338	58.5%
Women (n = 507)	322	63.5%	387	76.3%
Total (n = 1085)	632	58.2%	725	66.8%
ALCOHOL TO INTOXICATION				
Men (n = 575)	375	65.2%	415	72.2%
Women (n = 507)	371	73.2%	447	88.2%
Total (n = 1082)	746	68.9%	862	79.7%

Note. Individuals who were in a controlled environment all 30 days before the intake or follow-up survey were excluded from this analysis

There was a 9.0% increase in the number of male clients reporting past-30-day alcohol abstinence at follow-up compared to intake; however, this change was not statistically significant. The percent of women reporting alcohol abstinence increased 20.2% and, overall, the percent of clients reporting alcohol abstinence significantly increased by 14.7%. About 10.7% more men and 20.5% more women reported not using alcohol to intoxication at follow-up compared to intake.

FIGURE 5. PERCENT OF CHANGE IN PAST 30-DAY ALCOHOL ABSTINENCE FROM INTAKE TO FOLLOW-UP (n=1085)



^a—Significance established using z test for proportions; *p < .01, **p < .001.

INCREASES IN OVERALL ILLICIT DRUG ABSTINENCE

Questions about illicit drug use in the past 12 months and past 30 days were asked about ten primary drug types including: marijuana, cocaine, amphetamines, heroin, non-prescribed methadone, prescription opiates, barbiturates, tranquilizers/sedatives/benzodiazepines, hallucinogens, and inhalants. The number of types of drugs that clients reported using was computed for each time frame (Table 11). For the entire sample, the average number of types of illicit drugs used in the past 12 months decreased by 56.5% from 2.3 drug types at intake to one at follow-up (Table 11). In the past

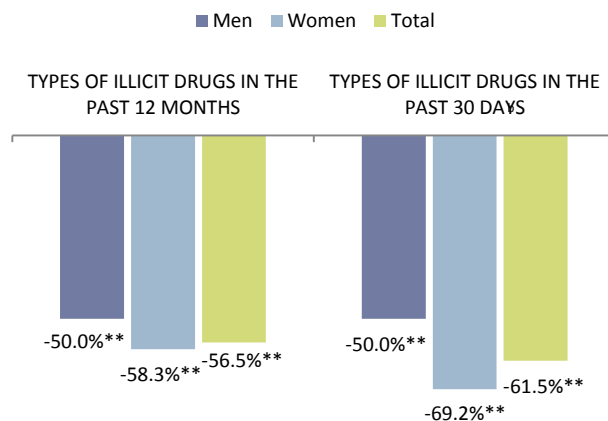
30 days, the average number of illicit drug types decreased 61.5% from 1.2 illicit drug classes to 0.5 drug types at follow-up.

TABLE 11. NUMBER OF DIFFERENT ILLICIT DRUG TYPES CLIENTS USED IN THE PAST 12 MONTHS AND PAST 30 DAYS FROM INTAKE TO FOLLOW-UP

NUMBER OF TYPES OF ILLICIT DRUGS USED	INTAKE	FOLLOW-UP
PAST 12 MONTHS		
Men (n = 655)	2.2	1.1
Women (n = 570)	2.4	1.0
Total (n = 1225)	2.3	1.0
PAST 30 DAYS^a		
Men (n = 578)	1.2	0.6
Women (n = 507)	1.3	0.4
Total (n = 1085)	1.2	0.5

^a—Individuals who were in a controlled environment all 30 days before the intake or follow-up survey were excluded from this analysis.

FIGURE 6. PERCENT OF CHANGE IN THE NUMBER OF TYPES OF ILLICIT DRUGS CLIENTS USED IN THE PAST 12 MONTHS AND PAST 30 DAYS FROM INTAKE TO FOLLOW-UP (n=1085)^a



^a—Significance established using paired sample t-tests.

^b—Individuals who were in a controlled environment all 30 days before the intake or follow-up survey were excluded from the analysis.

*p < .01, **p < .001.

A sizeable minority of clients (43.8%) reported not using illicit drugs at intake and at follow-up (i.e., were abstinent from drug use at both interview points). Over three-fourths (75.8%) of clients reported being abstinent from all illicit drugs by follow-up (see Table 12).

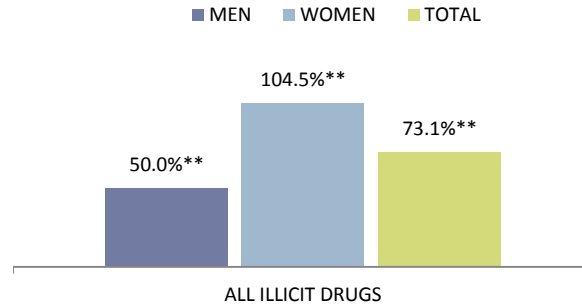
TABLE 12. PERCENT OF CLIENTS REPORTING ABSTINENCE FROM ALL ILLICIT DRUGS IN THE PAST 30 DAYS

	ABSTINENT AT INTAKE		ABSTINENT AT FOLLOW UP	
	n	Valid %	n	Valid %
ALL ILLICIT DRUGS				
Men (n = 578)	274	47.4%	411	71.1%
Women (n = 507)	201	39.6%	411	81.1%
Total (n = 1085)	475	43.8%	822	75.8%

Note. Individuals who were in a controlled environment all 30 days before the intake or follow-up survey were excluded from this analysis.

Going from 475 clients reporting drug abstinence in the past 30 days at intake to 822 at follow-up means a 73.1% increase in the percent of clients who were abstinent from illicit drug use. There was also a 104.5% increase in abstinence for women and a 50.0% increase in abstinence from illicit drug use in the past 30 days for men (See Figure 7).

FIGURE 7. PERCENT OF CHANGE IN CLIENTS REPORTING ABSTINENCE FROM ALL ILLICIT DRUGS IN THE PAST 30 DAYS FROM INTAKE TO FOLLOW-UP (n=1085)



INCREASES IN ABSTINENCE BY DRUG TYPE

MARIJUANA

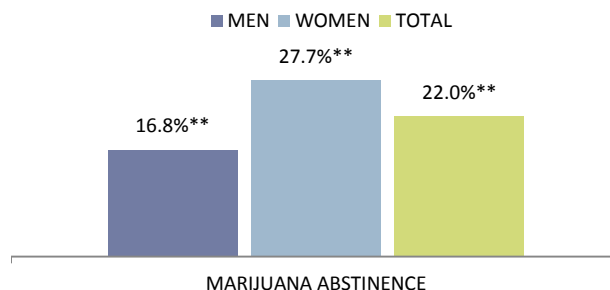
The majority of clients (68.8%) reported no marijuana use in the past 30 days at intake. By follow-up, 83.9% of clients reported no marijuana use in the past 30 days, which represents a 22.0% increase in marijuana abstinence from intake to follow-up (see Table 13 and Figure 8). Seven out of 10 women (70.0%) reported marijuana abstinence at intake, and at follow-up 89.3% women were abstinent at follow up, representing a 27.7% increase in women who were abstinent from marijuana. Among men, there was a 16.8% increase from intake to follow-up in the percent reporting marijuana abstinence.

TABLE 13. PERCENT OF CLIENTS REPORTING MARIJUANA ABSTINENCE IN THE PAST 30 DAYS

	ABSTINENT AT INTAKE		ABSTINENT AT FOLLOW UP	
	n	Valid %	n	Valid %
MARIJUANA				
Men (n = 578)	392	67.8%	458	79.2%
Women (n = 506)	354	70.0%	452	89.3%
Total (n = 1084)	746	68.8%	910	83.9%

Note. Individuals who were in a controlled environment all 30 days before the intake or follow-up survey were excluded from this analysis.

FIGURE 8. PERCENT OF CHANGE IN CLIENTS REPORTING MARIJUANA ABSTINENCE IN THE PAST 30 DAYS FROM INTAKE TO FOLLOW-UP (n=1084)



^a—Significance established using z test for proportions; *p < .01, **p < .001.

TRANQUILIZERS/SEDATIVES/BENZODIAZEPINES AND BARBITURATES

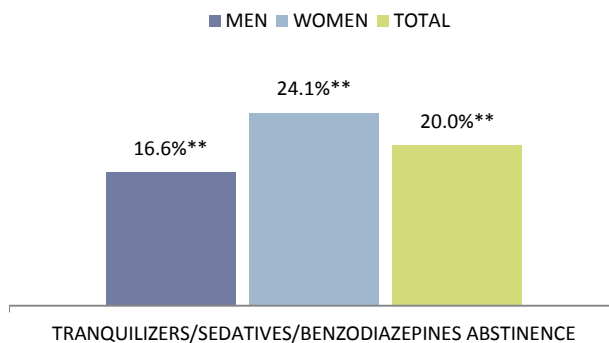
About three out of four clients (77.4%) reported no past 30-day use of tranquilizers, sedatives, or benzodiazepines at intake (see Table 14). At follow-up, 92.9% of clients reported no past 30-day use of this class of drugs, which is a 20.0% increase in abstinence from intake to follow-up. Most KTOS clients (97.1%) were abstinent from barbiturates at intake and by follow-up 99.2% were abstinent from barbiturates.

TABLE 14. PERCENT OF CLIENTS REPORTING TRANQUILIZERS/SEDATIVES/BENZODIAZEPINES AND BARBITURATES ABSTINENCE IN THE PAST 30 DAYS

	ABSTINENT AT INTAKE		ABSTINENT AT FOLLOW UP	
	n	Valid %	n	Valid %
TRANQUILIZERS, SEDATIVES, BENZODIAZEPINES				
Men (n = 578)	458	79.2%	534	92.4%
Women (n = 507)	382	75.3%	474	93.5%
Total (n = 1085)	840	77.4%	1008	92.9%
BARBITURATES				
Men (n = 578)	568	98.3%	572	99.0%
Women (n = 507)	485	95.9%	504	99.4%
Total (n = 1085)	1054	97.1%	1076	99.2%

Note. Individuals who were in a controlled environment all 30 days before the intake or follow-up survey were excluded from this analysis

FIGURE 9. PERCENT OF CHANGE IN CLIENTS REPORTING TRANQUILIZERS/SEDATIVES/BENZODIAZEPINES ABSTINENCE IN THE PAST 30 DAYS FROM INTAKE TO FOLLOW-UP (n=1085)



^a—Significance established using z test for proportions; *p < .01, **p < .001.

OPIATES

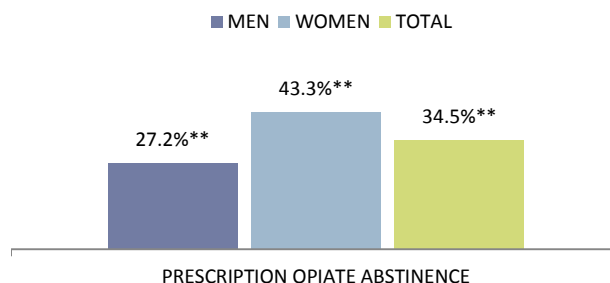
The vast majority of clients were abstinent from heroin and non-prescribed methadone at intake and follow-up (see Table 15). Because the vast majority was abstinent from heroin and non-prescribed methadone with nearly all clients reporting abstinence at follow-up, percent change was not calculated for these classes of drugs. Even though the majority of clients reported abstinence from prescription opiates at intake (65.0%), there was a significant increase from intake to follow-up in the percent of clients reporting abstinence (87.5%), representing a 34.5% increase (see Figure 10). The percent increase in prescription opiate abstinence was highest for women, a 43.8% increase.

TABLE 15. PERCENT OF CLIENTS REPORTING HEROIN, NON-PRESCRIBED METHADONE, AND PRESCRIPTION OPIATE ABSTINENCE IN THE PAST 30 DAYS (n = 1085)

	ABSTINENT AT INTAKE		ABSTINENT AT FOLLOW UP	
	n	Valid %	n	Valid %
HEROIN				
Men (n = 578)	559	96.7%	570	98.6%
Women (n = 507)	494	97.4%	504	99.4%
Total (n = 1085)	1053	97.1%	1074	99.0%
NON-PRESCRIBED METHADONE				
Men (n = 578)	538	93.1%	558	96.5%
Women (n = 507)	467	92.1%	494	97.4%
Total (n = 1085)	1005	92.6%	1052	97.0%
ILLICIT USE OF PRESCRIPTION OPIATES				
Men (n = 577)	386	66.9%	491	85.1%
Women (n = 507)	319	62.9%	457	90.1%
Total (n = 1084)	705	65.0%	948	87.5%

Note. Individuals who were in a controlled environment all 30 days before the intake or follow-up survey were excluded from this analysis. Also, data was missing on opiate use at follow-up for one client.

FIGURE 10. PERCENT OF CHANGE IN CLIENTS REPORTING PRESCRIPTION OPIATE ABSTINENCE IN THE PAST 30 DAYS FROM INTAKE TO FOLLOW-UP (n=1085)



^a—Significance established using z test for proportions; *p < .01, **p < .001.

COCAINE

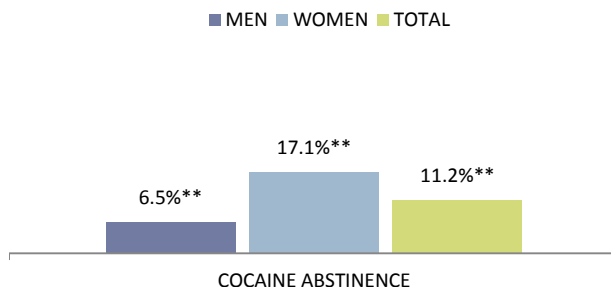
The majority of clients (87.0%) reported abstinence from cocaine in the past 30 days at intake, while 96.8% reported abstinence at follow-up (see Table 16). This represents an 11.2% increase in the number of clients reporting cocaine abstinence at follow-up compared to intake (see Figure 11). Compared to men, significantly fewer women were cocaine abstinent at intake. However, by follow-up there was no longer any significant difference in cocaine abstinence by gender.

TABLE 16. PERCENT OF CLIENTS REPORTING COCAINE ABSTINENCE IN THE PAST 30 DAYS

	ABSTINENT AT INTAKE		ABSTINENT AT FOLLOW UP	
	n	Valid %	n	Valid %
COCAINE				
Men (n = 578)	523	90.5%	557	96.4%
Women (n = 506)	420	83.0%	492	97.2%
Total (n = 1084)	943	87.0%	1049	96.8%

Note. Individuals who were in a controlled environment all 30 days before the intake or follow-up survey were excluded from this analysis. Also, data was missing on cocaine use at follow-up for one client.

FIGURE 11. PERCENT OF CHANGE IN CLIENTS REPORTING COCAINE ABSTINENCE IN THE PAST 30 DAYS FROM INTAKE TO FOLLOW-UP (n=1084)



^a—Significance established using z test for proportions; *p < .01, **p < .001.

AMPHETAMINES

Ninety-three percent of clients reported not using amphetamines in the past 30 days at intake with a slight increase at follow-up to 97.9% of all clients (see Table 17).

TABLE 17. PERCENT OF CLIENTS REPORTING AMPHETAMINE ABSTINENCE IN THE PAST 30 DAYS

	ABSTINENT AT INTAKE		ABSTINENT AT FOLLOW UP	
	N	Valid %	n	Valid %
AMPHETAMINE				
Men (n = 578)	543	93.9%	564	97.6%
Women (n = 507)	469	92.5%	498	98.2%
Total (n = 1085)	1012	93.3%	1062	97.9%

Note. Individuals who were in a controlled environment all 30 days before the intake or follow-up survey were excluded from this analysis.

Low percentages of clients who were not in a controlled environment all 30 days before intake reported methamphetamine use in the past 30 days at intake (4.9%) and follow-up (1.4%).

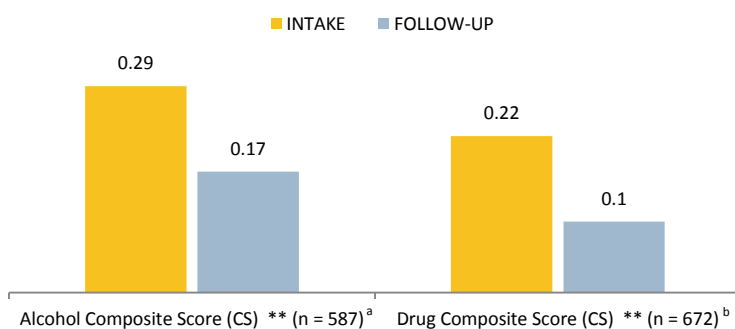
CHANGES IN ADDICTION SEVERITY INDEX ALCOHOL AND DRUG COMPOSITE SCORES

While 418 clients in this sample (34.1%) remained abstinent for the 12 months after treatment, the majority continued to report some use of drugs or alcohol. Among those who continued to use substances, the Addiction Severity Index composite score (ASI CS) was calculated to estimate the severity of their use. ASI composite measures for alcohol and drug problems were included in the intake and follow-up surveys. Composite scores (CS) gauge problem severity with scores ranging from 0 (no problem) to 1 (extreme severity). The composite factors in not only the frequency of past 30-day substance use, but also the degree of distress and problems associated with the use, the cost of substance use (for alcohol) and the perceived need for treatment for the problem. The ASI CS is typically used in research studies and is less often used for clinical purposes. However, some research studies have explored the application of the ASI to clinical settings by comparing the ASI's relationship to well-validated and reliable clinical measures of alcohol and drug dependence (Lehman, Myers, Dixon, & Johnson, 1996; Rikoon et al., 2006). Rikoon et al. (2006) found that the ASI alcohol and drug CS were correlated to the diagnostic criteria for alcohol and drug dependence in two clinical populations. The authors found that using the following cutoff scores resulted in a high level of sensitivity and specificity of the composite scores in predicting alcohol and drug dependence: 0.17 (alcohol CS), and 0.16 (drug CS).

To obtain a sense of change in substance dependence over time, individuals who were abstinent from alcohol at both intake and follow-up were excluded from the analysis on change in alcohol CS from intake to follow-up. The same holds true for the analysis on change in drug CS from intake to follow-up. Thus the analysis for change does include clients with ASI scores beneath the threshold for dependence, but it excludes those who were abstinent at both intake and follow-up. The analysis also excludes individuals who were in controlled environments at either or both points in time.

Clients' responses to intake and follow-up questions were used to calculate ASI-based alcohol and drug CS. The mean scores at each time frame are presented in Figure 12 for the sample. Mean alcohol and drug CS significantly decreased from intake to follow-up.

FIGURE 12. MEAN ASI ALCOHOL AND DRUG COMPOSITE SCORES AT INTAKE AND FOLLOW-UP



a—The following numbers of cases were not included in the analysis of change in alcohol CS for the following reasons: 494 individuals reported abstaining from alcohol at intake and follow-up, 140 individuals reported being in a controlled environment all 30 days before the intake or follow-up, and 4 individuals had data missing from at least one of the variables included in the computation of the alcohol CS.

b— The following numbers of cases were not included in the analysis of change in drug CS for the following reasons: 408 individuals reported abstaining from drugs at intake and follow-up, 140 individuals reported being in a controlled environment all 30 days before the intake or follow-up, and 5 individuals had data missing from at least one of the variables included in the computation of the drug CS.

*p < .01, **p < .001.

CHANGE IN SUBSTANCE ABUSE SEVERITY

To examine changes in overall severity of substance use, clients were categorized into one of two groups based on their CS: (1) a composite score **below** the cutoff score for dependence, (2) a CS **equal to or greater** than the CS score for dependence. A CS that is less than the cutoff score indicates that the client is not experiencing problems that would likely meet DSM-IV criteria for dependence, while a CS that is equal to or greater than the cutoff score indicates that the client is experiencing problems that likely meet criteria for substance dependence. Scores for intake and follow-up were not computed for clients who were in a controlled environment all 30 days for each respective time. Additionally, scores were not calculated for individuals who reported abstinence from that substance at both intake and follow-up.

There were 279 individuals who reported abstinence from alcohol and illicit drugs in the 30 days before intake and the 30 days before follow-up. Of the remaining 946 individuals who reported use of alcohol and/or drugs at either intake or follow-up, 73.8% (n = 698) met the CS threshold that is consistent with DSM criteria for alcohol or drug dependence at intake. Nearly one out of five individuals (19.1%, n = 181) met the CS score suggesting both alcohol and drug dependence (not depicted in Figure). By follow-up, only 37.7% (n = 357) met the CS corollary for DSM alcohol or drug dependence.

Table 18 shows the increase in the percentage of clients with alcohol and drug CS that were **below** the cutoff score at intake to follow-up. There were significant increases in the percentages of clients (men, women, and the total sample) with alcohol and drug CS below the cutoff score indicative of dependence.

TABLE 18. PERCENT OF ALCOHOL-USING CLIENTS WITH ALCOHOL CS *BELOW* THE CUTOFF SCORE FOR ALCOHOL DEPENDENCE AT INTAKE AND FOLLOW-UP^a

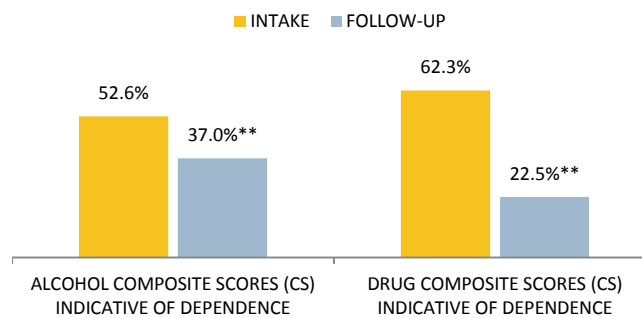
	CS <i>BELOW</i> CUTOFF SCORE AT INTAKE		CS <i>BELOW</i> CUTOFF SCORE AT FOLLOW UP	
	n	Valid %	n	Valid %
ALCOHOL CS				
Men (n = 354)	171	48.3%	216	61.0%
Women (n = 233)	107	45.9%	154	66.1%
Total (n = 587)	278	47.4%	370	63.0%
DRUG CS				
Men (n = 348)	139	39.9%	273	78.4%
Women (n = 324)	122	37.7%	248	76.5%
Total (n = 672)	261	38.8%	521	77.5%

Note. Individuals who were in a controlled environment all 30 days before intake and individuals who reported abstinence from the particular substance at both intake and follow-up were not included in the analysis.

^a—Significance established using z test for proportions; *p < .01, **p < .001.

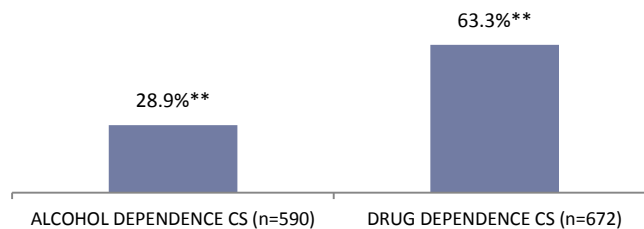
Figure 13 shows the percent of alcohol or drug using clients with CS scores suggestive of alcohol or drug dependence at intake and follow-up. There was a significant decrease from intake to follow-up in the number of clients meeting the CS score for alcohol dependence (52.6% vs. 37.0%). The decrease in the percent of clients with a CS suggestive of drug dependence was even greater, from 62.3% at intake to 22.5% at follow-up.

FIGURE 13. PERCENT OF ALCOHOL OR DRUG-USING CLIENTS WITH ASI CS MEETING THE CUTOFF SCORE FOR DEPENDENCE AT INTAKE AND FOLLOW-UP^a



^a—Significance established using z test for proportions; *p < .01, **p < .001.

FIGURE 14. PERCENT OF REDUCTION FROM INTAKE TO FOLLOW-UP IN CLIENTS MEETING CRITERIA FOR CS SCORE FOR ALCOHOL AND DRUGS AT FOLLOW-UP

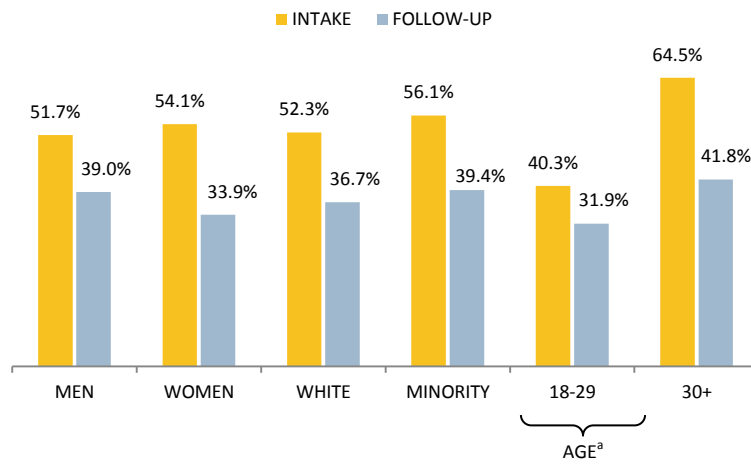


^a—Significance established using z test for proportions; *p < .01, **p < .001.

There was no difference in alcohol CS by gender or race at intake or follow-up. At intake significantly more individuals 30 years or older had an alcohol CS indicative of alcohol dependence compared to individuals who were 18 to 29 years old

(see Figure 15). However, by follow-up there was no difference by age group in the percent of clients with an alcohol CS indicative of dependence.

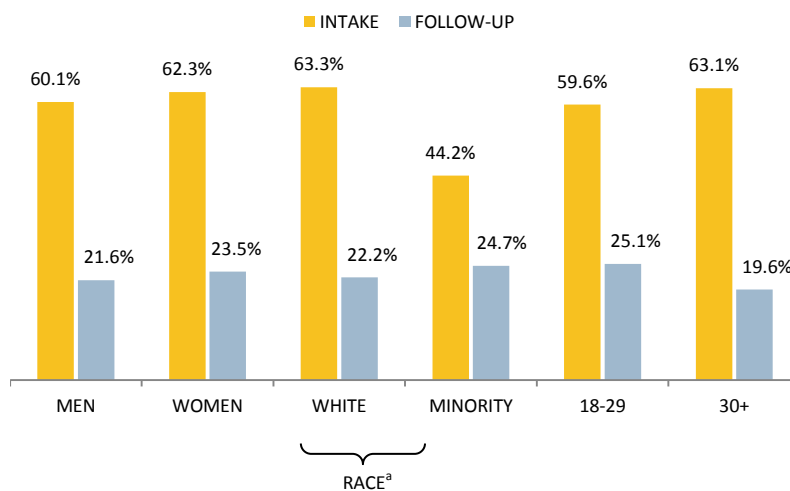
FIGURE 15. PERCENT OF ALCOHOL-USING CLIENTS WITH AN ALCOHOL CS INDICATIVE OF DEPENDENCE AT INTAKE AND FOLLOW-UP BY DEMOGRAPHIC FACTORS (n = 587)



^a—Indicates that there was a statistically significant difference in percent of clients with alcohol CS equal to or greater than the cutoff score at intake and follow-up by group. Chi square tests were conducted.

There were no significant differences at intake or follow-up in the percent of clients having drug CS scores indicative of dependence by gender or age group (see Figure 16). Significantly more White individuals met criteria for drug dependence at intake compared to individuals of other races. By follow-up there was no difference in the percent of Whites and non-Whites who met criteria for drug dependence.

FIGURE 16. PERCENT OF CLIENTS WITH ASI DRUG CS EQUAL TO OR GREATER THAN THE CUTOFF SCORE FOR DRUG DEPENDENCE AT INTAKE AND FOLLOW-UP BY DEMOGRAPHICS (n = 672)



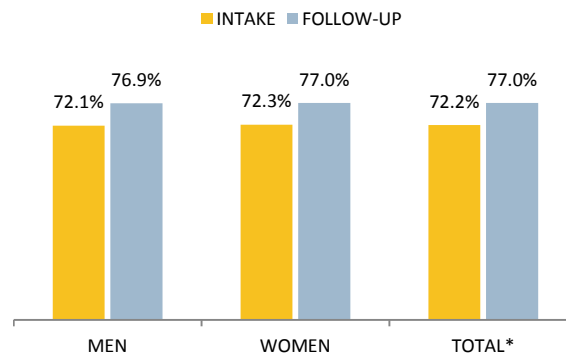
^a—Indicates that there was a statistically significant difference in percent of clients with alcohol CS equal to or greater than the cutoff score at intake by group. Chi square tests were conducted.

CHANGES IN EDUCATION, EMPLOYMENT, AND INCOME FROM INTAKE TO FOLLOW-UP

CHANGES IN EDUCATION

At intake, 72.2% of clients reported having completed their high school diploma or GED. By follow-up, this percent had significantly increased to 77.0%. The increase in the percentage of clients achieving their high school diploma or GED was not significant for men and women separately (see Figure 17).

FIGURE 17. CHANGE IN EDUCATION FROM INTAKE TO FOLLOW-UP^a



^a—Significance established using z test for proportions; *p < .01, **p < .001.

CHANGES IN EMPLOYMENT

For the sample overall, there was a significant increase from intake to follow-up in the percent of clients reporting full-time employment (by 24.2%). The percent of clients who reported being unemployed (not looking for work because they were retired, disabled, in school, a homemaker/caretaker, or in a controlled environment) decreased, but not significantly from 25.8% to 21.7%. The number of clients that reported being unemployed and looking for work decreased by 11.1%, from 24.3% at intake to 21.6% at follow-up. This group of individuals represents the most at-risk of the whole class of persons not employed. There was also a slight decrease from intake to follow-up in the number of clients who reported being employed part-time in irregular or day work.

Significantly more men were employed full-time at intake and at follow-up compared to women. At both intake and follow-up, significantly more women reported they were unemployed while not looking for work and unemployed but looking for employment.

TABLE 19. CHANGE IN PERCENT OF CLIENTS EMPLOYED FROM INTAKE TO FOLLOW-UP^{a,b}

	INTAKE	FOLLOW-UP
EMPLOYED FULL-TIME**		
Men (n = 655)	36.3%	46.6%
Women (n = 569)	21.3%	24.8%
Total (n = 1224)	29.3%	36.4%
EMPLOYED PART TIME		
Men (n = 655)	13.7%	11.5%
Women (n = 569)	10.7%	15.8%
Total (n = 1224)	12.3%	13.5%
EMPLOYED PART TIME, IRREGULAR OR DAY WORK		
Men (n = 655)	11.0%	8.4%
Women (n = 569)	5.1%	4.9%
Total (n = 1224)	8.3%	6.8%
UNEMPLOYED, NOT LOOKING FOR WORK (RETIRED, DISABLED, STUDENT, or HOMEMAKER)		
Men (n = 655)	20.8%	16.6%
Women (n = 569)	31.6%	27.6%
Total (n = 1224)	25.8%	21.7%
UNEMPLOYED, LOOKING FOR WORK		
Men (n = 655)	18.2%	16.9%
Women (n = 569)	31.3%	26.9%
Total (n = 1224)	24.3%	21.6%

a—Employment status was missing for one person at follow-up.

b—Significance established using z test for proportions; *p < .01, **p < .001.

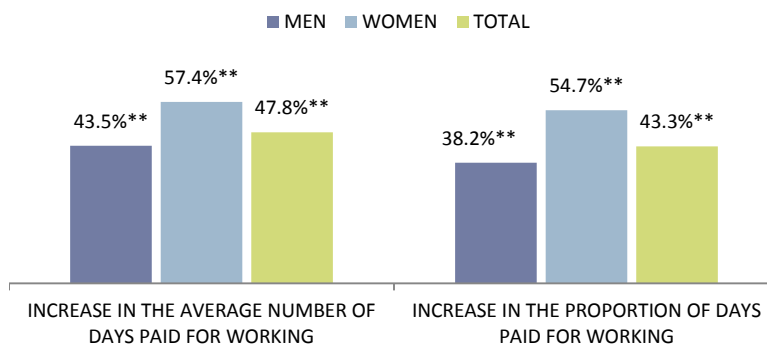
At intake, KTOS clients reported working an average of 6.7 days out of the past 30 days. At follow-up, this average increased by 47.8% to 9.9 days. In addition, the proportion of days clients reported being paid while not in a controlled environment (jail, detention, hospital) increased significantly (by 43.3%), from 23.3% at intake to 33.4% at follow-up. Women showed the greatest percent increase (54.7%) in the proportion of days not in a controlled environment that they worked in the past 30 days.

TABLE 20. CHANGE IN DAYS PAID FOR WORK IN THE PAST 30 DAYS FROM INTAKE TO FOLLOW-UP^a

	INTAKE	FOLLOW-UP
AVERAGE PAID DAYS OF WORK IN THE PAST 30 DAYS		
Men (n = 576)**	8.5 days	12.2 days
Women (n = 506)**	4.7 days	7.4 days
Total (n = 1082)**	6.7 days	9.9 days
PROPORTION OF DAYS PAID FOR WORK		
Men (n = 576)**	29.6%	40.9%
Women (n = 506)**	16.1%	24.9%
Total (n = 1082)**	23.3%	33.4%

^a Individuals who were in a controlled environment all 30 days before the intake or follow-up survey were excluded from this analysis.

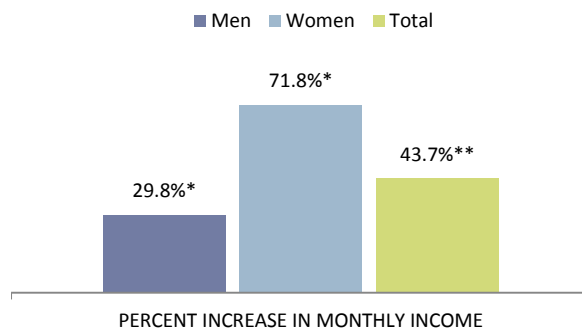
FIGURE 18. PERCENT OF CHANGE IN THE DAYS PAID FOR WORK FROM INTAKE TO FOLLOW-UP^a (n=1082)



a—Significance established using paired samples t tests.
*p < .01, **p < .001.

Monthly income was reported by 1,152 clients at intake and follow-up. Of these 1,152 individuals, 132 were in a controlled environment all 30 days before intake or follow-up. Reported monthly income increased significantly from intake to follow-up for individuals who were not in a controlled environment all 30 days before intake or follow-up. At intake, clients reported an average income of \$679 for the past 30 days and at follow-up, this number increased by 43.7% to \$976. This significant increase in monthly income was also found for men and women separately.

FIGURE 19. PERCENT OF CHANGE IN MONTHLY INCOME FROM INTAKE TO FOLLOW-UP (n= 1020)



CHANGES IN INVOLVEMENT IN THE CRIMINAL JUSTICE SYSTEM

REDUCED ARRESTS

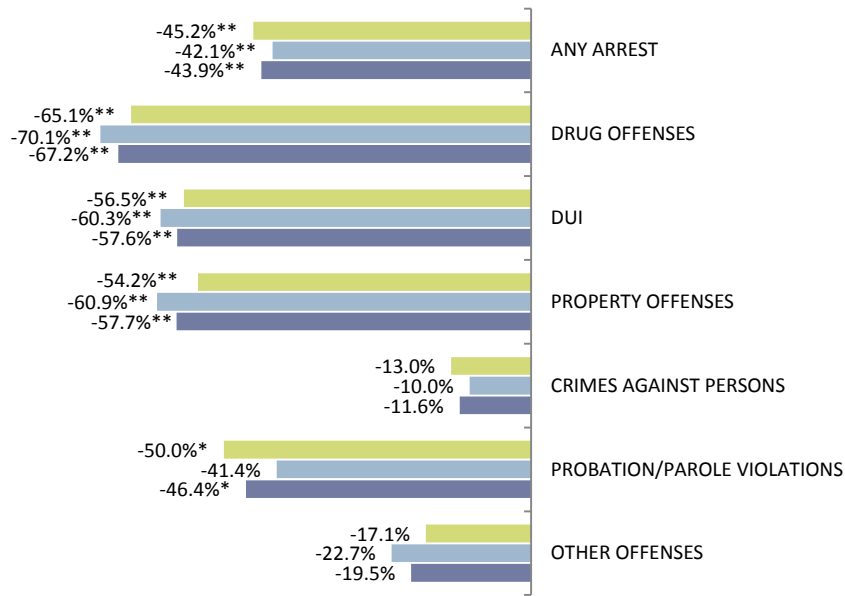
Over half (58.9%) of clients reported an arrest in the 12 months before treatment intake. At follow-up, this percentage had decreased by 43.9% to 33.0% (see Table 21 and Figure 20). Specifically, the percent of clients who reported having been arrested for drug offenses in the past 12 months decreased by 67.2% from 22.0% at intake to 7.2% at follow-up. The percent of clients reporting DUI offenses decreased by 57.6% from intake to follow-up. There was also a 57.7% decrease in property offenses as the percent of clients reporting offenses dropped from 10.5% at intake to 4.4% at follow-up. The percent of KTOS clients reporting probation or parole violations decreased by 46.4% from intake to follow-up as well. The percent of clients reporting crimes against a person or other offenses did not significantly change from intake to follow-up. The percent of clients reporting other offenses did not change significantly from intake to follow-up.

TABLE 21. PERCENT OF CLIENTS REPORTING ARRESTS IN THE 12 MONTHS BEFORE INTAKE AND THE 12 MONTHS BEFORE FOLLOW-UP

	INTAKE	FOLLOW-UP
ANY ARRESTS		
Men (n = 654)	63.9%	35.0%
Women (n = 569)	53.1%	30.8%
Total (n = 1223)	58.9%	33.0%
DRUG OFFENSES		
Men (n = 638)	23.8%	8.3%
Women (n = 539)	19.9%	5.9%
Total (n = 1177)	22.0%	7.2%
DUI		
Men (n = 638)	23.0%	10.0%
Women (n = 539)	11.7%	4.6%
Total (n = 1177)	17.8%	7.6%
PROPERTY OFFENSES		
Men (n = 638)	9.2%	4.2%
Women (n = 539)	11.9%	4.6%
Total (n = 1177)	10.5%	4.4%
CRIMES AGAINST PERSONS		
Men (n = 638)	3.6%	3.1%
Women (n = 539)	3.7%	3.3%
Total (n = 1177)	3.7%	3.2%
PROBATION/PAROLE VIOLATION		
Men (n = 638)	6.3%	3.1%
Women (n = 539)	5.4%	3.2%
Total (n = 1177)	5.9%	3.1%
OTHER OFFENSES		
Men (n = 638)	19.3%	16.0%
Women (n = 539)	18.0%	13.9%
Total (n = 1177)	18.7%	15.0%

Note. Data on arrests for specific criminal offenses was not available for 42 individuals at intake because of a programming error. Other cases are not included in this analysis because participants declined to answer or did not know how to answer questions about arrests at follow-up.

FIGURE 20. PERCENT OF DECREASE IN PERCENT OF CLIENTS REPORTING ANY ARRESTS IN THE 12 MONTHS BEFORE INTAKE TO THE 12 MONTHS BEFORE FOLLOW-UP^a (n = 1177)



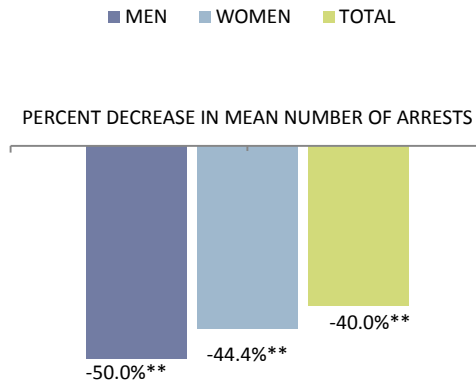
a—Significance established using z test for proportions.
*p < .01, **p < .001.

The mean number of arrests in the past 12 months significantly decreased from intake to follow-up for the entire sample and for men and women separately (see Table 22 and Figure 21).

TABLE 22. CHANGE FROM INTAKE TO FOLLOW-UP IN NUMBER OF ARRESTS IN THE PAST 12 MONTHS

	INTAKE	FOLLOW-UP
NUMBER OF ARRESTS IN THE PAST 12 MONTHS		
Men (n = 641)***	1.2	0.6
Women (n = 540)***	0.9	0.5
Total (n = 1181)***	1.0	0.6

FIGURE 21. PERCENT OF DECREASE IN MEAN NUMBER OF ARRESTS IN THE 12 MONTHS BEFORE INTAKE TO THE 12 MONTHS BEFORE FOLLOW-UP (n = 1181)^a



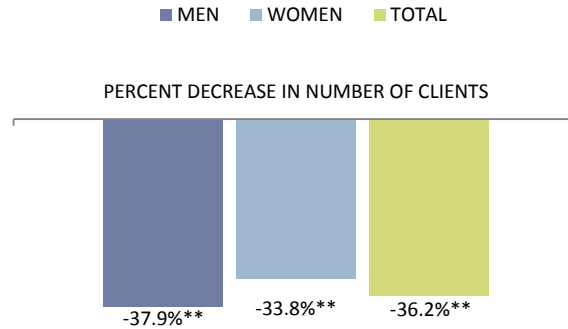
REDUCED INCARCERATION

The majority of clients (58.0%) reported spending at least one night in jail or prison in the 12 months before treatment intake. At follow-up, 37.0% reported having spent at least one night in jail in the past 12 months which is a 36.2% decrease from intake.

TABLE 23. CHANGE IN INCARCERATION TIME FROM INTAKE TO FOLLOW-UP

	INTAKE	FOLLOW-UP
SPENT AT LEAST ONE NIGHT IN JAIL OR PRISON IN THE PAST 12 MONTHS		
Men (n = 654)	64.1%	39.8%
Women (n = 539)	51.0%	33.7%
Total (n = 1223)	58.0%	37.0%

FIGURE 22. PERCENT OF CHANGE IN CLIENTS SPENDING AT LEAST ONE NIGHT IN JAIL OR PRISON FROM INTAKE TO FOLLOW-UP (n=1223)



c—Significance established using z test for proportions.
*p < .01, **p < .001.

RISK AND PROTECTIVE FACTORS FOR SUBSTANCE USE RECOVERY

Measures of risk factors for substance use recovery included physical health issues and social exposure to substance use. Chronic pain rates increased significantly from 33.6% at intake to 40.4% at follow-up. This could also be interpreted as clients working through their recovery enough to identify and begin seeking treatment for previously undiagnosed medical problems that were overlooked due to substance abuse. Having sustained a head injury during their lifetime was reported by 39.7% of clients at intake (see Table 23).

TABLE 23. RISK FACTORS FOR SUBSTANCE USE RECOVERY AT INTAKE AND FOLLOW-UP (n=1225)

RISK FACTORS TO RECOVERY	INTAKE	FOLLOW-UP
HEALTH		
Has chronic physical pain (lasting 3 months or longer)***	33.6%	40.4%
	LIFETIME	PAST 12 MONTHS
		n = 1223 ^a
History of head injury (with loss of consciousness or hospitalization)	39.7%	7.3%

a—Two cases had missing values on head injury at follow-up.

Protective factors for recovery are reported in Table 24. An increase was seen in client use of mutual-help recovery groups like alcoholics anonymous (AA) or narcotics anonymous (NA). For those who attended recovery meetings, the average number of monthly attendance increased from 10.6 meetings at intake to 15.2 meetings at follow-up – a 43.4% increase in frequency of attendance.

There was no significant change from intake to follow-up in the percent of clients who reported they had contact with persons who were supportive of their recovery (see Table 24).

TABLE 24. PROTECTIVE FACTORS FOR SUBSTANCE USE RECOVERY AT INTAKE AND FOLLOW-UP (n=1224)

PROTECTIVE FACTORS FOR RECOVERY	INTAKE	FOLLOW-UP
AA/NA RECOVERY SELF-HELP GROUP ATTENDANCE		
Attended AA/NA recovery self-help meetings in the past 30 days***	35.7%	49.8%
For all those who have used recovery groups in the past 30 days	(n = 438)	(n = 609)
Mean # of times attended in the past 30 days	10.6 times	15.2 times
SUPPORTIVE INTERACTIONS WITH OTHERS		
Had contact with people who were supportive of his/her recovery in the past 30 days	87.8%	88.1%
Average number of people client can count on when needed ^a ***	7.8	35.6

a—60 cases had missing data on the question about number of persons the client could count on at intake or follow-up.

Table 25 displays what clients believed would be most helpful to them in their recovery process. More than one-third (35.8%) reported the support of family and/or friends would be most helpful. Employment was reported as being most helpful for recovery by 17.5% of clients. Other people in recovery was reported by 13.6% as most helpful to the client's recovery. Counseling was reported by 13.5% as the most helpful support for recovery. Mutual-help recovery groups were reported as most helpful by 11.9% of the clients.

TABLE 25. PERCENT OF CLIENTS REPORTING WHO OR WHAT WILL BE MOST HELPFUL IN THEIR RECOVERY (n=1196)^a

	PERCENT
Support of family and friends	35.8%
Employment	17.5%
Other people in recovery	13.6%
Counseling	13.5%
Mutual help recovery	11.9%

^a For the other categories (e.g., support from co-workers/employers, children, does not have a problem, other) fewer than 4% answered yes.

ABSTINENCE DURING FOLLOW-UP

REFERRAL TO TREATMENT

Referral to community-based substance abuse treatment by the criminal justice system is common (Farabee & Leukefeld, 2001). The majority of KTOS clients have been referred to treatment by the criminal justice system or due to DUI charges. We know from previous years' analyses that individuals who are referred to substance abuse treatment based on a DUI charge are more likely to be White, male, and to have employment (Walker et al., 2008).

Multivariate analyses were conducted to examine the relationship between demographics, intake substance use, criminal justice factors, and substance use during the follow-up period. Based on participants' self-reported alcohol and drug use during the 12-month follow-up period, groups were created to examine the association of abstinence with demographic, employment, and criminal justice factors. The three groups were:

- (1) Individuals who reported they abstained from alcohol and illicit drug use;
- (2) Individuals who used alcohol but abstained from illicit drugs; and
- (3) Individuals who reported using illicit drugs, regardless of whether they also reported using alcohol.

Thus, individuals who used alcohol but abstained from drugs, and individuals who used illicit drugs during the 12-month follow-up period were compared to individuals who abstained from alcohol and drugs during the follow-up period. Table 26 presents the factors that were significantly associated with substance use during the follow-up period, after controlling for the other factors. Table 26 presents only the variables that were significantly associated with abstinence during follow-up. However, the following variables were included in the multinomial regression: age, education, number of months used alcohol before intake, number of months used illicit drugs before intake, gender, race, employment status at follow-up, referred to treatment because of a DUI charge, referred to treatment by the criminal justice system.

TABLE 26. MULTINOMIAL REGRESSION OF SUBSTANCE USE DURING THE 12 MONTH FOLLOW-UP PERIOD BY TREATMENT REFERRAL STATUS

	OR	95% CI
ABSTAINED FROM DRUGS/ USED ALCOHOL		
Number of months used alcohol before intake**	1.126	[1.087, 1.167]
Type of referral to treatment: (reference cat. = not referred)		
Criminal justice system**	.496	[.339, .726]
DUI charge**	2.496	[1.592, 3.915]
USED ILLICIT DRUGS		
Age**	.957	[.942, .972]
Number of months used alcohol before intake**	1.081	[1.047, 1.116]
Number of months used drugs before intake**	.981	[.974, .989]
Male**	2.001	[1.483, 2.700]
Type of referral to treatment: (reference cat. = not referred)		
Criminal justice system**	.369	[.271, .503]
DUI charge	.876	[.560, 1.369]

*p < .01, **p < .001

The results show that individuals who were referred to treatment by the criminal justice system were less likely to use alcohol or illicit drugs. However, individuals who were referred to treatment because of a DUI charge were more likely to report using alcohol and abstaining from drugs during the follow-up than abstaining from all substances. The only other factor that was associated with using alcohol and abstaining from drugs during the follow-up period was number of months of alcohol use at intake. Individuals who used alcohol more months in the 12 months before intake were more

likely to report using alcohol but no illicit drugs in the follow-up period than to report abstaining from both alcohol and illicit drugs.

The following factors were significantly associated with using illicit drugs during the 12-month follow-up: age, alcohol use at intake, illicit drug use at intake, gender, and referral to treatment by the criminal justice system. In other words, compared to individuals who reported abstaining from alcohol and drugs during follow-up, individuals who reported using drugs during follow-up were younger, had used alcohol more months at intake, had used illicit drugs fewer months at intake, were more likely to be male, and were less likely to have been referred to treatment by the criminal justice system.

ABSTINENCE AND OTHER TREATMENT OUTCOMES

Treatment outcome studies generally place considerable emphasis on a handful of central outcomes – increased abstinence, decreased crime, and increased employment. These changes in behavior are generally presented independent of each other. However, in this report, we examined whether abstinence predicted differences in crime and employment at follow-up. The same three groups that were described in the previous section on referral to treatment and substance use at follow-up were included in this analysis to examine the relationship of abstinence at follow-up with other key treatment outcomes.

Fewer women than men reported using alcohol and abstaining from illicit drugs and using drugs (see Table 27). Significantly more men reported using alcohol and abstaining from drugs than abstaining from both alcohol and drugs. Individuals who reported using illicit drugs during the follow-up were significantly younger than individuals in the other two groups. No significant differences were found in race, education, employment status, proportion of days worked in the 30 days before intake and income in the 30 days before intake.

TABLE 27. DESCRIPTION OF INDIVIDUALS AT INTAKE BY ABSTINENCE STATUS AT FOLLOW-UP

	ABSTAINED FROM ALCOHOL & DRUGS (n = 419)	USED ALCOHOL/ ABSTAINED FROM DRUGS (n = 286)	USED ILLICIT DRUGS (n = 520)
GENDER**			
Male	45.6%	60.1%	56.2%
Female	54.4%	39.9%	43.8%
AGE**	33.5	35.5	30.3
RACE			
White	90.6%	90.5%	89.4%
Minority	9.4%	9.5%	10.6%
HAS A HIGH SCHOOL DIPLOMA OR GED	68.3%	71.7%	75.6%
EMPLOYMENT STATUS			
Full time	27.7%	31.8%	29.2%
Part time	16.7%	24.8%	21.3%
Retired, disabled, student, homemaker	29.6%	21.0%	25.6%
Unemployed, looking for work	26.0%	22.4%	23.8%
PERCENT OF DAYS IN THE PAST 30 DAYS CLIENT WAS PAID FOR WORK^a	21.4%	28.4%	21.6%
INCOME FROM ALL SOURCES IN THE PAST 30 DAYS	\$470	\$711	\$724

^a Individuals who were in a controlled environment all 30 days before the intake or follow-up survey were excluded from this analysis. *p < .01, **p < .001.

To better understand how abstinence is related to other treatment outcomes, multivariate analyses were conducted to examine the relationship of abstinence with employment, arrests, and incarceration during the follow-up.

The first analysis examined the relationship between abstinence during the 12-month follow-up and employment during the follow-up period, controlling for the effects of other important factors, such as gender, age, race, education, DUI referral, and employment status at intake (see Table 28). Abstinence from alcohol or illicit drugs was not related to employment at follow-up, controlling for the other factors. Factors that were significantly associated with employment during the follow-up period were age, gender, education, and employment status at intake. Younger individuals and women were less likely to be employed during the follow-up period. Individuals with at least a GED or high school diploma were more likely to be employed at follow-up. Expectedly, individuals who were employed at intake were significantly more likely to be employed at follow-up.

TABLE 28. LOGISTIC REGRESSION ANALYSIS OF DEMOGRAPHICS, ABSTINENCE DURING FOLLOW-UP, AND EMPLOYMENT IN THE FOLLOW-UP PERIOD (n = 1220)^a

	ODDS RATIO	99% CI
Used alcohol but abstained from illicit drugs during the follow-up period	1.092	[.679, 1.755]
Used illicit drugs during the follow-up period	.718	[.482, .1.069]
Age**	.957	[.940, .975]
Employment status at intake**	5.209	[3.678, 7.377]
Gender [0 = Male, 1 = Female]**	.457	[.319, .653]
Had a GED or HS diploma at follow-up	1.857	[1.235, 2.791]

a—5 cases had missing data on at least one of the variables included
 *p < .01, **p < .001.

Another important outcome to examine is arrests after treatment. The second analysis examined the relationship between abstinence during the 12-month follow-up and arrests during the follow-up period, controlling for the effects of other important factors, such as gender, age, race, education, employment status, DUI referral, and number of arrests in the 12 months before intake (see Table 29). Individuals who used illicit drugs were significantly more likely than individuals who abstained from all substances to be arrested during the follow-up period. Also, individuals who used alcohol but abstained from illicit drugs were significantly more likely to be arrested than individuals who abstained from all substances. Not surprisingly, more arrests at intake were associated with a greater likelihood of being arrested in the 12-month follow-up period. Finally, younger individuals were more likely to report being arrested during the 12-month follow-up period.

TABLE 29. LOGISTIC REGRESSION ANALYSIS OF DEMOGRAPHICS, ABSTINENCE DURING FOLLOW-UP, AND ARREST IN THE FOLLOW-UP PERIOD (n = 1176)^a

	ODDS RATIO	99% CI
Used alcohol but abstained from illicit drugs during the follow-up period**	2.362	[1.417, 3.938]
Used illicit drugs during the follow-up period**	4.136	[2.690, 6.362]
Number of arrests in the 12 months before intake**	1.238	[1.094, 1.403]
Age**	.964	[.946, .983]

a—49 cases had missing data on at least one of the variables included
 *p < .01, **p < .001.

The third analysis examined another important outcome of treatment: incarceration. The relationship between abstinence and incarceration (in jail or prison) during the follow-up period was examined, controlling for the effects of gender, age, race, education, employment status, DUI referral, and number of days incarcerated in the 12 months before intake. Table 30 shows that individuals who used illicit drugs during the follow-up period were significantly more likely to report being incarcerated than individuals who abstained from all substances. Individuals who used alcohol but abstained from illicit drugs were no less or more likely to report incarceration during the follow-up period than individuals who abstained from all substances. Other factors that were significantly associated with incarceration during the follow-up

period were gender, age, and number of days incarcerated in the 12 months before intake. Men and younger individuals were more likely to report being incarcerated. Finally, individuals who reported more days incarcerated in the 12 months before intake were more likely to be incarcerated at follow-up.

TABLE 30. LOGISTIC REGRESSION ANALYSIS OF DEMOGRAPHICS, ABSTINENCE DURING FOLLOW-UP, AND INCARCERATION IN THE FOLLOW-UP PERIOD (n = 1218)^a

	ODDS RATIO	99% CI
Used illicit drugs during the follow-up period**	2.479	[1.692, 3.632]
Number of days incarcerated in the 12 months before intake*	1.003	[1.001, 1.005]
Gender [0=Male, 1=Female]*	.695	[.495, .975]
Age**	.962	[.945, .979]

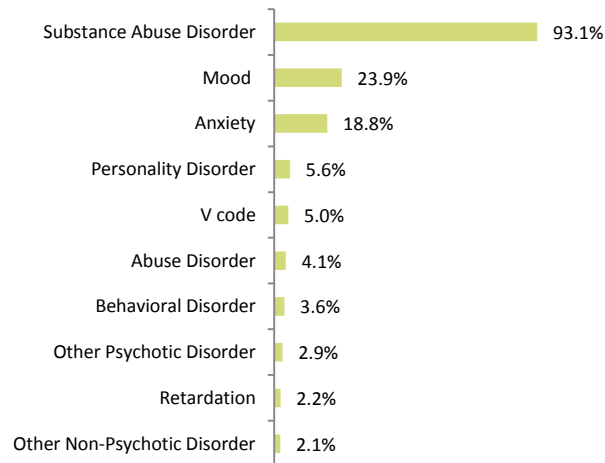
a—7 cases had missing data on at least one of the variables included. *p < .01, **p < .001.

CLINICAL SERVICE INFORMATION

The clinical service event data that community mental health center (CMHC) providers report to the Department for Behavioral Health, Developmental and Intellectual Disabilities (DBHDID) was matched to all but one of the clients who completed a follow-up survey . However, when we examined the diagnosis codes for the 1,224 cases, 12.1% (n = 148) had no diagnosis code listed. Thus diagnostic data was available for 1,076 follow-up clients.

Figure 23 below shows the percent of clients diagnosed with various categories of mental health disorders. Ninety-three percent of clients were diagnosed as having a substance use disorder (abuse or dependence). Clients can have multiple diagnoses for example, alcohol dependence and cannabis abuse. In addition, 23.9% had a mood disorder (such as depression or non-psychotic bipolar disorder), and 18.8% were diagnosed as having an anxiety disorder (such as generalized anxiety, panic disorder, or obsessive-compulsive disorder). Very few clients were diagnosed as having a sleep disorder, sexual disorder, learning disorder, V-Code for situational disorder, or dementia.

FIGURE 23. DSM-IV DIAGNOSES FOR KTOS CLIENTS IN TREATMENT DURING FY 2010-2011 (n = 1076)



Among the 1,224 KTOS follow-up clients whose survey data was matched to clinical services event data that CMHC providers report to the DBHDID, they received a total of 35,976 services between entry into treatment and the date of their follow-up survey. About 12% (n = 148) of these clients had no data on clinical services during the time period under review. Interestingly, these 148 cases are not exactly the same 148 cases that had no diagnosis codes in the data. One hundred thirty-six of these cases had no diagnosis codes, but 12 cases did have some services listed. Of the 1,224 clients, 56.2% received individual therapy services, 35.6% received group services, 27.2% received residential treatment services, 19.4% received non-medical detoxification, 19.1% received diagnostic services (including psychological testing, medical evaluation, psychiatric diagnostic evaluation, and other diagnostic services), and 17.4% received case management (substance abuse-related). More than one out of 10 (12.2%) received intensive outpatient substance abuse services. No individuals received substance abuse transitional services (see Figure 24).

FIGURE 24. PERCENTAGE OF CLIENTS RECEIVING EACH CATEGORY OF TREATMENT FOR THOSE RECEIVING SERVICES (n = 1224)

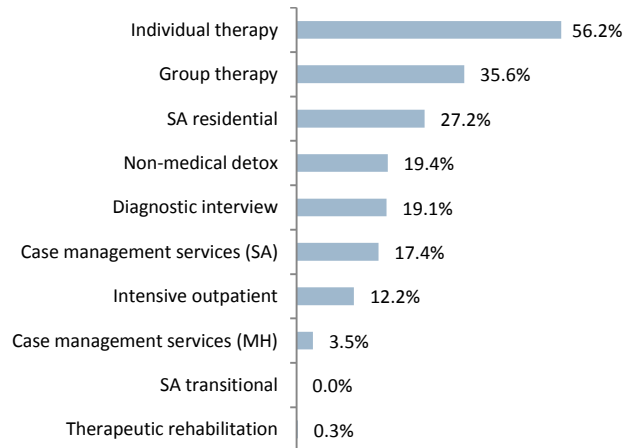


Figure 25 shows the average number of services received among those clients who received at least one of those service types. There was an average of 42.8 days of residential treatment, 23.7 intensive outpatient (substance abuse) services, and 20.5 group therapy services.

FIGURE 25. MEAN NUMBER OF CLINICAL SERVICES RECEIVED BY CLIENTS RECEIVING AT LEAST ONE OF THE SERVICE TYPES

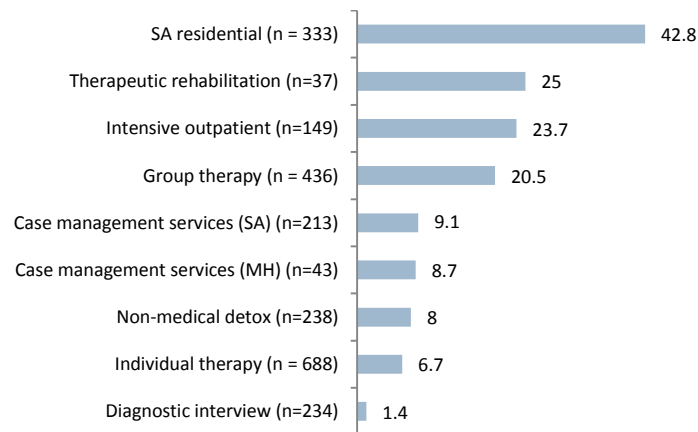
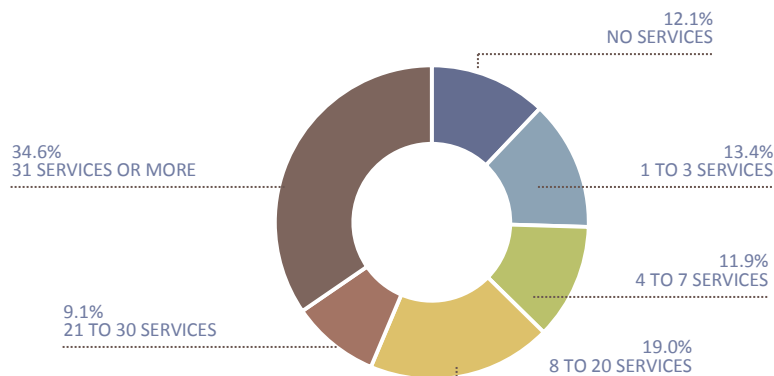


Figure 26 shows the range of the number of clinical services received by KTOS clients. A match could not be made for 1 case (i.e., client social security number did not exist in service event data set) and another 148 clients had no service event data.

FIGURE 26. RANGE OF NUMBER OF CLINICAL SERVICES (n = 1224)



As mentioned previously, 148 KTOS clients did not have data for clinical services and 423 clients (34.6%) received 31 services or more between the date of completion for the baseline survey and the follow-up survey. The following figures show a regional distribution of clients receiving no services (Figure 27) and clients receiving 31 services or more (Figure 28). Pennyroyal (with 32.4%) had the largest percent of KTOS clients with no data on clinical services, followed by Pathways (11.5%). The region with the greatest percent of clients receiving 31 or more clinical services was Seven Counties (19.4%) followed by Bluegrass with 15.1%.

FIGURE 27. PERCENT OF KTOS CLIENTS WITH NO DATA ON CLINICAL SERVICES BY CMHC REGION (n = 148)

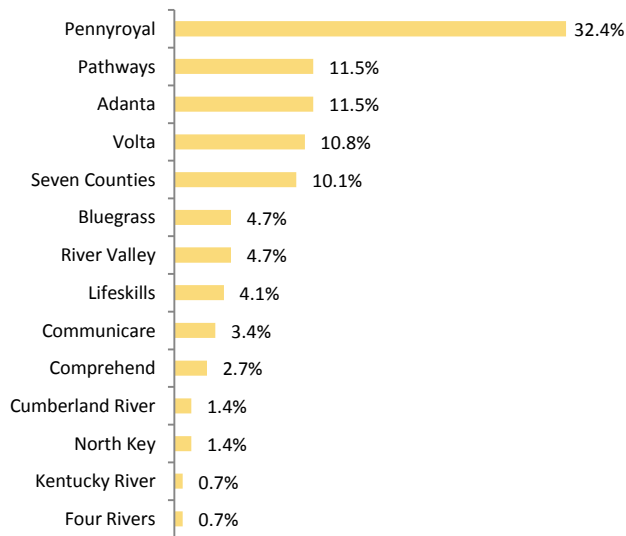
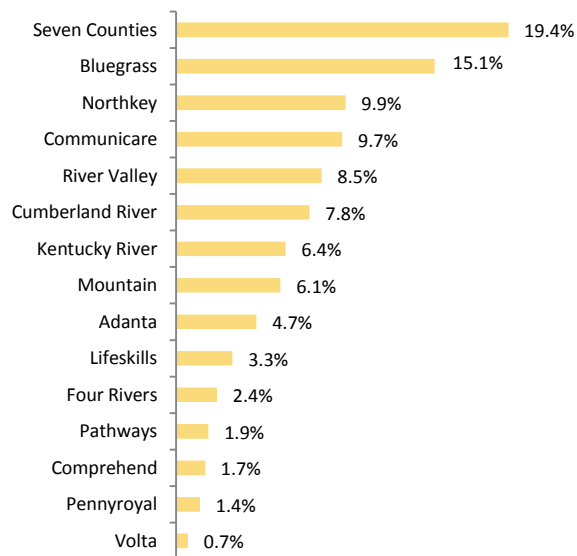


FIGURE 28. PERCENT OF KTOS CLIENTS WITH 31 OR MORE CLINICAL SERVICES BY CMHC REGION (n = 224)^a

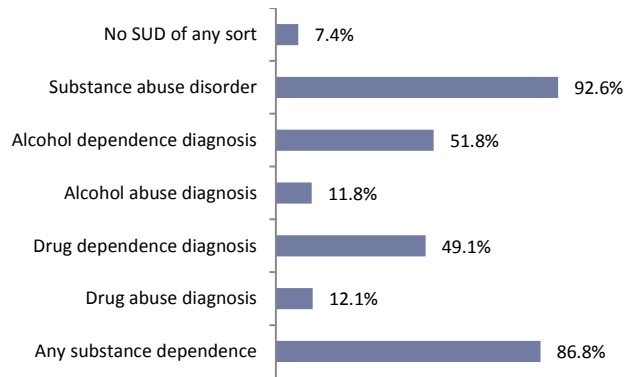


a—Region was missing for 4 cases

This report also examined the agreement between client self-reported substance use data with the diagnostic data that were actually used in treatment settings. First, it is important to note that 148 (12.1%) individuals whose KTOS data was matched with the service event data, had no diagnosis codes in the system. These individuals are not included in the data presented in Figures 29 and 30.

Figure 29 shows that among clients who presented data consistent with alcohol dependence using the ASI composite score and were able to be matched for services, just a little over one-half (51.8%) were actually diagnosed with alcohol dependence in the treatment setting. The vast majority (92.6%) were diagnosed with any substance abuse disorder, and 86.8% were diagnosed with alcohol or drug dependence.

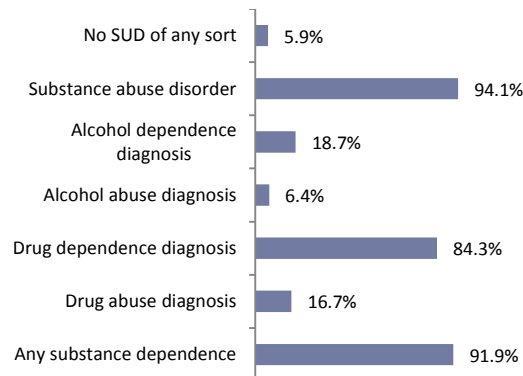
FIGURE 29. PERCENT OF CLIENTS MEETING ASI COMPOSITE FOR ALCOHOL DEPENDENCE AT BASELINE COMPARED TO ACTUAL DIAGNOSES IN TREATMENT (n=340)



*SUD = Substance Use Disorder – any type

The congruence between ASI composite score for illicit drug dependence compared to actual client diagnosis is presented in Figure 30. Among those with ASI composites suggesting drug dependence, only 5.9% did not have a diagnosis of a substance use disorder of any type, while 91.9% had a diagnosis of alcohol or drug dependence, and 84.3% had a diagnosis of drug dependence.

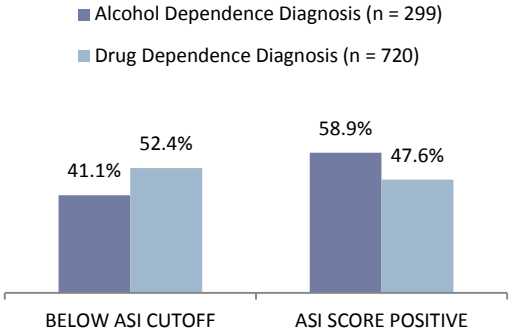
FIGURE 30. PERCENT OF CLIENTS MEETING ASI COMPOSITE FOR ILLICIT DRUG DEPENDENCE AT BASELINE COMPARED TO ACTUAL DIAGNOSES IN TREATMENT (n=407)



The data regarding congruence between ASI composite scores that are likely for dependence and actual diagnoses in treatment are similar for alcohol and drugs. The fact that 12.1% of the follow-up sample with matching service event data did not have any diagnosis codes in the data suggests that the data set is not complete for all clients.

Looked at another way, in Figure 31, the treatment diagnostic data suggest that among those clients diagnosed with alcohol dependence, about two out of five (41.1%) were missed by the self-reported information at intake. About half the clients diagnosed with drug dependence had self-report information below the ASI cutoff for drug dependence.

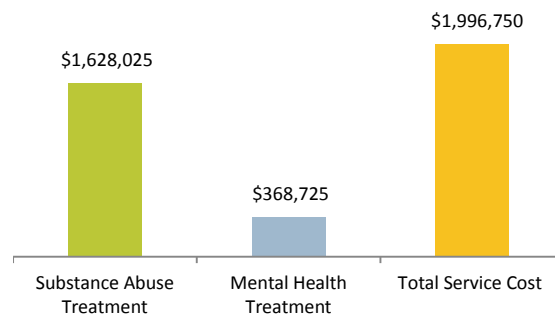
FIGURE 31. PERCENT OF CLIENTS DIAGNOSED WITH ALCOHOL OR DRUG DEPENDENCE AND ASI CUTOFF SCORES FOR DEPENDENCE AT INTAKE



COSTS OF SUBSTANCE USE

Overall, 991 of the 1,225 KTOS follow-up clients received 35,976 state-funded services including medical and non-medical detoxification, outpatient counseling, intensive outpatient, case management, crisis stabilization, a therapeutic rehabilitation, and supported employment. This study examines only the cost of state-funded treatment and does not include private payer sources such as employee assistance programs, other contracts, and private insurance which represent a small percentage of the total clients served in this sample of follow-up clients. A total of 991 follow-up clients received state-funded services including Medicaid services from their intake date to one year out. The cost of treatment services for these 991 clients was developed using cost report rates from the Kentucky Department of Behavioral Health, Developmental and Intellectual Disabilities. The cost of services were then expanded to include the 1,225 clients who had both specific substance abuse treatment (\$1,317,484, or \$1,329 per person) and mental health treatment (\$298,593, or \$301 per person). The combination of treatment cost for clients who received state-funded services was \$1,616,129 or \$1,630 per client, well below the cost per client amounts for predominantly outpatient treatment nationally. In 2005, a national study found per-client costs for outpatient treatment at \$2,389 (Beaston-Blaakman, Shepard, Horgan, & Ritter, 2007). In order to extrapolate this treatment cost to the entire follow-up sample, the per-client treatment cost for mental health and substance abuse services was multiplied by the total sample size (n=1,225) to arrive at a generalized total cost of \$1,996,750 for state-funded treatment services (see Figure 32).

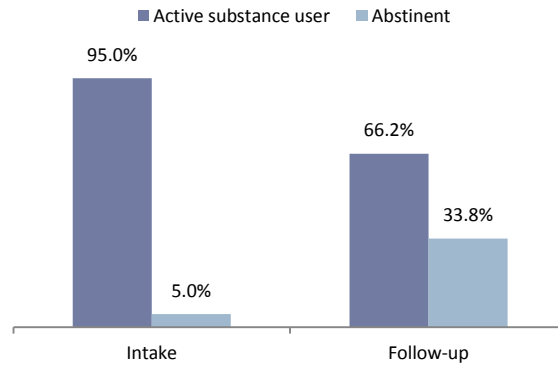
FIGURE 32. EXTRAPOLATED TOTAL COST OF STATE-FUNDED TREATMENT SERVICES AND TOTAL COST OF ALL TREATMENT (n=1225)



THE COST OF ALCOHOL AND DRUG ABUSE

In the FY 2010 treatment sample there were 1,211 clients who were not in a controlled environment for all of the 365 days before intake or follow-up. (We do not examine abstinence for those in controlled environments because of restricted opportunity for use). Among the 1,211, 60 reported being abstinent from drugs *and* alcohol in the 12 months prior to intake. At follow-up, the 1,211 were interviewed and 409 (33.8%) reported being abstinent from *both* drugs and alcohol for a net increase in abstinence of 349 individuals.

FIGURE 33. PERCENT OF INDIVIDUALS WHO WERE ABSTINENT FROM ALCOHOL AND DRUGS (n=1211)



a—12 cases were not included because the client was incarcerated all 365 days before intake or follow-up.
 b—One case had missing data for illicit drug use in the 12 months before follow-up.
 c—140 cases were not included because the client was in a controlled environment all 30 days before intake or follow-up.

The cost of one year’s treatment for all 1,225 cases was estimated at \$1,996,750 or \$1,630 per client. Thus, the cost of treatment for the 1,211 would be estimated at \$1,973,930. To examine the cost difference before and after treatment, the distribution of abstinent substance users must be examined from intake to follow-up. As shown in Table 31, the total annual substance abuse cost to society of \$24,283 for the 1,151 clients who were not abstinent at intake can be estimated at \$27,949,733. These societal costs include lost employment, costs of crime, incarceration, justice system, law enforcement and health services. By follow-up there were 349 more individuals who reported abstinence than at intake. The annual substance abuse-related societal costs among the 802 individuals who still reported substance use is estimated at \$19,474,966.

The increase in the number of individuals reporting abstinence at follow-up compared to intake suggests a difference in cost to society of \$8,474,767. In addition, if we subtract the cost of treatment from this amount, the net difference is \$6,478,017. This may also be expressed as a ratio by dividing the total cost to society (\$8,474,767) by the total treatment cost (\$1,996,750) such that for every dollar spent on treatment there is a \$4.24 cost offset.

TABLE 31. SUBSTANCE ABUSE COST TO SOCIETY AMONG CLIENTS NOT IN CONTROLLED ENVIRONMENTS AT INTAKE OR FOLLOW-UP (n=1225)

	SUBSTANCE USE AT INTAKE	SUBSTANCE USE AT FOLLOW-UP
NUMBER OF CLIENTS	1,151	802
ANNUAL SUBSTANCE ABUSE COST TO SOCIETY PER INDIVIDUAL	\$24,283	\$24,283
COST FOR TOTAL	\$27,949,733	\$19,474,966
COST DIFFERENCE FROM INTAKE TO FOLLOW-UP		\$8,474,767
TREATMENT COST		\$1,996,750
NET DIFFERENCE		\$6,478,017

CONCLUSIONS

Clients in the FY 2010 KTOS follow-up sample were on average 33 years old, white (90%), and over half were male (54%). The sample reported high levels of interpersonal victimization with more women than men reporting each category of exposure to emotional, physical, and sexual abuse. Over half of the sample were charged with crimes before entering treatment and had spent time in jail in the past 12 months. Almost 9 of 10 individuals were regular tobacco users at intake. Over half of the sample reported using alcohol to intoxication and over half reported use of non-prescribed opiates at intake to treatment. Despite this snapshot which shows a bleak picture of alcohol abuse, illicit drug use, criminal justice system involvement, and victimization, 12-month follow-up outcomes for the sample were very positive.

Abstinence

Abstinence rates for the sample at follow-up were significantly improved after treatment. Over three-fourths of clients reported no illicit drug use or alcohol use at follow-up. Tobacco use remained high at follow-up.

Employment

Full-time employment rates increased significantly from intake (29%) to follow-up (36%) as did the proportion of days clients reported being paid for work (7/30 days at intake to 10/30 at follow-up).

Criminal Justice System Involvement

Significant decreases in arrests, particularly for drug offenses, DUI, property offenses, and parole/probation violations were seen at follow-up for this sample. Men and younger individuals were more likely to be incarcerated before follow-up. Individuals who used illicit drugs during the follow-up period were 2.5 times more likely to be incarcerated during the same period compared to individuals who abstained from illicit drug use by follow-up. Individuals who were referred to treatment by the criminal justice system were less likely to use alcohol or illicit drugs by follow-up than individuals from other referral sources.

Protective Factors against Relapse

Significantly, more clients reported use of AA/NA recovery self-help groups at follow-up. In addition, the average number of people reported as supporting the client in recovery jumped from 8 to 36 at follow-up.

Cost of Drug and Alcohol Abuse

Calculating the cost of treatment for KTOS clients and comparing that cost to the overall societal costs of drug and alcohol abuse, we find there is a savings of \$4.24 for every dollar spent on treatment.

RECOMMENDATIONS

The integration of tobacco cessation programs into substance abuse treatment programs is recommended as programs offering tobacco cessation interventions are still in the minority (Friedmann, Jiang, & Richter, 2008; Fuller, 2007; McCool, Richter, & Choi, 2005). Empirical evidence suggests tobacco cessation efforts with adults do not negatively impact recovery (Reid et al., 2007), and in fact may be associated with more positive substance abuse treatment outcomes (Cooney et al., 2007; Friend & Pagano, 2005; Kohn et al., 2003; Prochaska, Delucchi, & Hall, 2004). Development of tobacco cessation programs for individuals in substance abuse treatment should be a priority to improve the overall behavioral health of individuals in treatment (Myers & Kelly, 2006).

APPENDIX I: LOCATING EFFORTS

TABLE A1. FINAL CASE OUTCOMES FOR FOLLOW-UP EFFORTS FY 2010

	Number of Records (n = 2038)	Percent
Ineligible for follow-up survey	371	18.2%
	Number of Cases Eligible for Follow-Up (n = 1667)	
Completed Follow-Up Surveys	1225	
Follow-up rate subtracting the ineligible cases		73.5%
Expired	413	20.3%
Expired rate subtracting the ineligible cases		24.8%
Refusal	29	1.4%
Refusal rate subtracting the ineligible cases		1.7%
Cases accounted for (records ineligible for follow-up + completed surveys + refusals/total number of records)	1625	79.7%

TABLE A2. REASONS CLIENTS WERE INELIGIBLE FOR FOLLOW-UP (N = 371)

	NUMBER	PERCENT
INCARCERATED	276	74.4%
IN RESIDENTIAL TREATMENT	63	17.0%
DECEASED	15	4.0%
HOSPITALIZED	4	1.1%
MILITARY SERVICE	1	0.3%
DID NOT SPEAK ENGLISH	3	0.8%
PROVIDED INVALID DATA	5	1.3%
OTHER REASON	4	1.1%
TOTAL	371	100%

COMPARISON OF CLIENTS WHO AGREED TO BE CONTACTED FOR THE FOLLOW-UP SURVEY AND CLIENTS WHO DID NOT AGREE TO BE CONTACTED FOR THE FOLLOW-UP SURVEY

Of the 5,542 baseline surveys completed in FY 2010, 3,403 (61.4%) individuals agreed at intake to be contacted for the follow-up survey and 2,139 individuals declined to be contacted for the follow-up survey. Table A3 shows the comparison of clients who agreed at intake to be contacted for the follow-up survey and clients who did not agree to be contacted for the follow-up survey. Individuals who agreed to be contacted were younger on average than individuals who did not agree to be contacted. Significantly fewer women declined to be contacted than agreed to be contacted. More individuals who were unemployed and not looking for work declined to be contacted for the follow-up survey than agreed to be contacted for the follow-up survey. There were no other demographic differences between those who agreed and those who did not agree to be contacted.

TABLE A3. DEMOGRAPHICS FOR CLIENTS WHO AGREED/DID NOT AGREE TO BE CONTACTED FOR THE FOLLOW-UP SURVEY

	AGREED TO BE CONTACTED FOR THE FOLLOW-UP SURVEY	
	NO n = 2139	YES n = 3403
AGE*	33.3 years	32.3 years
GENDER*		
Female	38.1%	42.4%
RACE		
White	91.7%	89.8%
African American	6.6%	8.0%
Other or multiracial	1.7%	2.2%
COMPLETED A HIGH SCHOOL DIPLOMA OR GED		
Yes	70.8%	69.3%
MARITAL STATUS		
Never married	37.4%	40.2%
Married	21.3%	19.7%
Cohabiting	8.3%	9.9%
Separated or divorced	31.5%	28.5%
Widowed	1.4%	1.5%
MEAN INCOME IN THE PAST 30 DAYS	\$634	\$636
USUAL EMPLOYMENT IN THE PAST 12 MONTHS*		
Employed full time	32.0%	31.1%
Employed part time	19.3%	19.3%
Unemployed, not looking for work	28.8%	25.4%
Unemployed, looking for work	20.0%	24.2%

*p < .01, **p < .001.

Significantly more of the individuals who agreed to be contacted for the follow-up survey had been in substance abuse treatment before the current admission than individuals who declined to be contacted for the follow-up survey (see Table A4). Significantly more individuals who agreed to be contacted reported using tobacco, alcohol to intoxication, and illicit drugs in the 12 months before intake. Also, significantly more individuals who agreed to be contacted reported using tobacco, alcohol, alcohol to intoxication, and illicit drugs in the 30 days before intake compared to individuals who did not agree to be contacted. Alcohol and drug CS were significantly different between those who agreed to be contacted and those who did not agree, with individuals who agreed to be contacted having higher alcohol and drug CS. Thus, individuals who agreed to be contacted for follow-up had more extensive and severe alcohol and drug use, in general, than individuals who did not agree to be contacted for follow-up.

TABLE A4. COMPARISON IN SUBSTANCE USE AT INTAKE BETWEEN THOSE WHO AGREED/DID NOT AGREE TO BE CONTACTED

	AGREED TO BE CONTACTED FOR THE FOLLOW-UP SURVEY	
	NO n =2139	YES n = 3403
EVER PARTICIPATED IN SUBSTANCE ABUSE TREATMENT BEFORE CURRENT ADMISSION*		
Yes	51.4%	55.5%
SUBSTANCE USE IN THE PAST 12 MONTHS		
Tobacco**	84.3%	87.8%
Alcohol	69.2%	70.4%
Alcohol to intoxication*	51.8%	56.1%
Illicit drugs**	69.9%	80.9%
SUBSTANCE USE IN THE PAST 30 DAYS		
Tobacco	81.4%	83.2%
Alcohol**	34.4%	39.1%
Alcohol to intoxication**	22.0%	29.4%
Illicit drugs**	41.2%	54.2%
Mean ASI alcohol CS**	.15	.18
Mean ASI drug CS**	.11	.16

*p < .01, **p < .001.

Significantly more individuals who declined to be contacted for the follow-up survey reported that their current admission to substance abuse treatment was due to a DUI offense compared to individuals who agreed to be contacted (see Table A5). Similarly, fewer individuals who agreed to be contacted were arrested for a DUI in the 12 months before intake compared to individuals who did not agree to be contacted. Arrests in the 12 months before intake were significantly different between the two groups for all of the criminal offenses except crimes against persons; however, unlike DUI offenses, more individuals who agreed to be contacted reported being arrested for drug offenses, property crimes, probation violations, and other offenses. In addition, significantly more individuals who agreed to be contacted reported being incarcerated in the 30 days before intake compared to individuals who did not agree to be contacted. Thus, individuals who agreed to be contacted reported more involvement with the criminal justice system, with the exception of DUI charges where individuals with DUI charges were less likely to agree to be contacted for the follow-up survey.

TABLE A5. COMPARISON OF CRIMINAL JUSTICE INVOLVEMENT AT INTAKE BETWEEN THOSE WHO AGREED TO BE CONTACTED FOR FOLLOW-UP AND THOSE WHO DID NOT AGREE TO BE CONTACTED FOR FOLLOW-UP

	AGREED TO BE CONTACTED FOR THE FOLLOW-UP SURVEY	
	NO n =2139	YES n = 3403
ADMISSION PROMPTED BY THE CRIMINAL JUSTICE SYSTEM	35.5%	37.5%
ADMISSION THE RESULT OF A DUI CHARGE**	24.8%	15.2%
ADMISSION PROMPTED BY THE DEPARTMENT OF COMMUNITY BASED SERVICES	13.2%	14.9%
ARRESTED AND CHARGED WITH AN OFFENSE IN THE PAST 12 MONTHS	58.8%	59.6%
DUI charge**	24.2%	17.1%
Drug charge**	16.5%	21.9%
Property crime**	7.4%	11.7%
Crime against persons	3.1%	3.7%
Probation violation**	4.6%	7.0%
Other charges*	15.5%	18.9%
INCARCERATED AT LEAST ONE DAY IN THE PAST 12 MONTHS	58.5%	61.2%
INCARCERATED AT LEAST ONE DAY IN THE PAST 30 DAYS**	19.8%	28.2%

*p < .01, **p < .001.

AMONG CLIENTS WHO AGREED AT INTAKE TO BE CONTACTED FOR FOLLOW-UP, COMPARISON OF CLIENTS WHO WERE SELECTED INTO THE SAMPLE TO BE FOLLOWED UP AND THOSE WHO WERE NOT SELECTED INTO THE SAMPLE

This section presents results of comparison of clients who were selected into the sample of clients to be followed up and those who were not selected into the sample, among those who agreed at intake to be contacted for the follow-up.

There were no statistically significant differences in demographics between individuals that were selected into the sample to be followed up compared to those who were not selected into the sample to be followed up (see Table A6).

TABLE A6. DEMOGRAPHICS FOR CLIENTS WHO WERE SELECTED/NOT SELECTED INTO THE SAMPLE TO BE FOLLOWED UP

	AMONG THOSE WHO AGREED TO BE CONTACTED (n = 3403), SELECTED INTO THE SAMPLE TO BE FOLLOWED UP	
	NO n =1365	YES n =2038
AGE	32.4 years	32.3 years
GENDER		
Female	42.6%	42.3%
RACE		
White	90.2%	89.6%
African American	7.5%	8.3%
Other or multiracial	2.3%	2.2%
COMPLETED A HIGH SCHOOL DIPLOMA OR GED		
Yes	69.4%	69.2%
MARITAL STATUS		
Never married	39.3%	40.8%
Married	19.9%	19.6%
Cohabiting	10.1%	9.7%
Separated or divorced	29.0%	28.2%
Widowed	1.7%	1.7%
MEAN INCOME IN THE PAST 30 DAYS	\$562	\$685
USUAL EMPLOYMENT IN THE PAST 12 MONTHS		
Employed full time	30.0%	31.8%
Employed part time	19.1%	19.5%
Unemployed, not looking for work	25.1%	25.6%
Unemployed, looking for work	25.8%	23.1%

*p < .01, **p < .001.

Among those who agreed to be contacted for the follow-up (n = 3403), there were no statistically significant differences in substance use at intake between those who were not selected into the follow-up sample and those who were selected into the follow-up sample (see Table A7).

TABLE A7. COMPARISON IN SUBSTANCE USE AT INTAKE BETWEEN THOSE WHO WERE SELECTED/NOT SELECTED INTO THE SAMPLE TO BE FOLLOWED UP

	AMONG THOSE WHO AGREED TO BE CONTACTED (n = 3403), SELECTED INTO THE SAMPLE TO BE FOLLOWED UP	
	NO n =1365	YES n =2038
EVER PARTICIPATED IN SUBSTANCE ABUSE TREATMENT BEFORE CURRENT ADMISSION		
Yes	56.2%	55.0%
SUBSTANCE USE IN THE PAST 12 MONTHS		
Tobacco	87.8%	87.7%
Alcohol	68.7%	71.5%
Alcohol to intoxication	56.0%	56.1%
Illicit drugs	80.4%	81.2%
SUBSTANCE USE IN THE PAST 30 DAYS		
Tobacco	83.9%	82.8%
Alcohol	39.8%	38.7%
Alcohol to intoxication	30.4%	28.7%
Illicit drugs	54.1%	54.4%
Mean ASI alcohol CS	.18	.18
Mean ASI drug CS	.15	.16

*p < .01, **p < .001.

There were no statistically significant differences on criminal justice system involvement variables between the two groups: those who were included in the sample to be followed up and those who were not included in the sample to be followed up (see Table A8). However, significantly fewer individuals who were referred to treatment by the Department of Community Based Services were selected into the follow-up sample than individuals who were not selected into the sample.

TABLE A8. COMPARISON OF CRIMINAL JUSTICE INVOLVEMENT AT INTAKE BETWEEN THOSE WHO WERE SELECTED/NOT SELECTED INTO THE SAMPLE TO BE FOLLOWED UP

	AMONG THOSE WHO AGREED TO BE CONTACTED (n = 3403), SELECTED INTO THE SAMPLE TO BE FOLLOWED UP	
	NO n =1365	YES n =2038
ADMISSION PROMPTED BY THE CRIMINAL JUSTICE SYSTEM	35.9%	38.6%
ADMISSION THE RESULT OF A DUI CHARGE	14.7%	15.5%
ADMISSION PROMPTED BY THE DEPARTMENT OF COMMUNITY BASED SERVICES**	18.2%	12.6%
ARRESTED AND CHARGED WITH AN OFFENSE IN THE PAST 12 MONTHS	58.3%	60.4%
DUI charge	17.2%	17.0%
Drug charge	21.6%	22.2%
Property crime	11.9%	11.6%
Crime against persons	3.6%	3.7%
Probation violation	7.1%	7.0%
Other charges	18.7%	19.1%
INCARCERATED AT LEAST ONE DAY IN THE PAST 12 MONTHS	61.2%	61.1%
INCARCERATED AT LEAST ONE DAY IN THE PAST 30 DAYS	27.6%	28.6%

*p < .01, **p < .001.

Among Clients Who Were Selected into the Sample to be Followed Up, Comparison of Those Who Completed a Follow-Up Survey and Those Who Did Not Complete a Follow-Up Survey

Table A9 shows the comparison of clients who completed the follow-up survey and those who did not complete the follow-up survey, among the clients who were selected into the sample (n = 2038). A higher percent of women completed the follow-up survey than did not complete the follow-up survey. Also, significantly more individuals who completed the follow-up survey reported that they had completed a high school diploma or GED at intake compared to those who did not complete a follow-up survey. The two groups did not differ on other demographics.

TABLE A9. DEMOGRAPHICS FOR CLIENTS WHO COMPLETED/DID NOT COMPLETE THE FOLLOW-UP SURVEY, AMONG THOSE WHO WERE SELECTED INTO THE FOLLOW-UP SURVEY

	AMONG THOSE SELECTED INTO THE SAMPLE TO BE FOLLOWED UP (n = 2038), COMPLETED THE FOLLOW-UP SURVEY	
	NO n = 813	YES n = 1225
AGE	31.8 years	32.6 years
GENDER**		
Female	36.0%	46.5%
RACE		
White	88.8%	90.1%
African American	9.2%	7.6%
Other or multiracial	2.0%	2.3%
COMPLETED A HIGH SCHOOL DIPLOMA OR GED**		
Yes	64.7%	72.2%
MARITAL STATUS		
Never married	41.5%	40.4%
Married	19.2%	19.8%
Cohabiting	9.8%	9.6%
Separated or divorced	27.7%	28.6%
Widowed	1.8%	1.6%
MEAN INCOME IN THE PAST 30 DAYS	\$576	\$579
USUAL EMPLOYMENT IN THE PAST 12 MONTHS		
Employed full time	35.7%	29.3%
Employed part time	17.8%	20.6%
Unemployed, not looking for work	25.2%	25.9%
Unemployed, looking for work	21.3%	24.2%

*p < .01, **p < .001.

Among those who were selected into the follow-up sample (n = 2038), individuals who completed the follow-up survey did not differ significantly from individuals who did not complete the follow-up survey on substance use at intake (see Table A10).

TABLE A10. COMPARISON IN SUBSTANCE USE AT INTAKE BETWEEN THOSE WHO COMPLETED/DID NOT COMPLETE A FOLLOW-UP SURVEY

	AMONG THOSE SELECTED INTO THE SAMPLE TO BE FOLLOWED UP (n = 2038), COMPLETED THE FOLLOW-UP SURVEY	
	NO n = 813	YES n = 1225
EVER PARTICIPATED IN SUBSTANCE ABUSE TREATMENT BEFORE CURRENT ADMISSION		
Yes	54.1%	55.5%
SUBSTANCE USE IN THE PAST 12 MONTHS		
Tobacco	88.5%	87.2%
Alcohol	71.3%	71.7%
Alcohol to intoxication	57.7%	55.1%
Illicit drugs	83.3%	79.8%
SUBSTANCE USE IN THE PAST 30 DAYS		
Tobacco	82.4%	83.0%
Alcohol	38.9%	38.5%
Alcohol to intoxication	28.2%	29.0%
Illicit drugs	56.3%	53.1%
Mean ASI alcohol CS	.18	.18
Mean ASI drug CS	.17	.15

*p < .01, **p < .001.

Significantly more individuals whose admission to substance abuse treatment was prompted by the criminal justice system did not complete a follow-up survey than did complete a follow-up survey (see Table A11). Additionally, significantly more individuals who did not complete a follow-up survey reported being incarcerated in the 12 months and the 30 days before intake compared to individuals who did complete the follow-up survey. There were no other statistically significant differences on criminal justice system variables between the individuals who completed the follow-up survey and those who did not complete the follow-up survey.

TABLE A11. COMPARISON OF CRIMINAL JUSTICE INVOLVEMENT AT INTAKE BETWEEN THOSE WHO COMPLETED A FOLLOW-UP SURVEY AND THOSE WHO DID NOT COMPLETE A FOLLOW-UP SURVEY

	AMONG THOSE SELECTED INTO THE SAMPLE TO BE FOLLOWED UP (n = 2038), COMPLETED THE FOLLOW-UP SURVEY	
	NO n =813	YES n =1225
ADMISSION PROMPTED BY THE CRIMINAL JUSTICE SYSTEM**	44.4%	34.7%
ADMISSION THE RESULT OF A DUI CHARGE	13.0%	17.1%
ADMISSION PROMPTED BY THE DEPARTMENT OF COMMUNITY BASED SERVICES	11.2%	13.6%
ARRESTED AND CHARGED WITH AN OFFENSE IN THE PAST 12 MONTHS	62.7%	58.9%
DUI charge	15.6%	17.9%
Drug charge	22.4%	22.1%
Property crime	13.4%	10.4%
Crime against persons	3.8%	3.6%
Probation violation	8.7%	5.8%
Other charges	19.8%	18.7%
INCARCERATED AT LEAST ONE DAY IN THE PAST 12 MONTHS**	65.9%	58.0%
INCARCERATED AT LEAST ONE DAY IN THE PAST 30 DAYS*	32.7%	25.9%

*p < .01, **p < .001.