Evaluation of the California Outcomes Measurement System (CalOMS)

Final Report 2008

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EXECUTIVE SUMMARY

During the past several years, the landscape of substance abuse problems and treatments has continued to change in the State of California. The emergence of new drug abuse problems (e.g., prescription drugs), the impact of precursor restrictions on the domestic production of methamphetamine and the compensatory increases in methamphetamine importation, the development and expanded use of medications for addiction, and the increasing awareness of the chronic nature of alcohol and other drug (AOD) conditions[1] have dramatically transformed the way we conceptualize treatment for addiction, what we expect from treatment, and how we evaluate treatment.

Given that most treatment for substance use disorders is provided through public funding, there is considerable interest in ensuring that treatment programs in California are using public dollars responsibly by performing efficiently (providing quality services) and producing positive client outcomes. As part of this effort to improve treatment accountability and outcomes, the California Department of Alcohol and Drug Programs (ADP) developed the California Outcomes Measurement System (CalOMS) for treatment, the first statewide data collection and management system implemented in all 58 counties to comprehensively measure AOD client outcomes. The CalOMS core data set includes questions on client functioning across medical, psychiatric, employment, legal, family/social, and alcohol and drug use areas. Treatment programs are responsible for collecting this core data from all clients at treatment admission and discharge.

One year after the implementation of CalOMS, the Integrated Substance Abuse Programs (ISAP) group from the University of California, Los Angeles (UCLA), conducted the first evaluation of CalOMS under the guise of four objectives:

Objective 1: Use CalOMS data to improve knowledge of AOD treatment services in California

Objective 2: Enhance the capability of county administrators to use CalOMS data to improve treatment service

Objective 3: Evaluate the quality and validity of CalOMS data

Objective 4: Develop recommendations for improvement of the CalOMS system

This final report is divided into eight chapters that address research questions specific to each of the four evaluation objectives. While information in each chapter is relevant to each of the four objectives, the first five chapters provide information that responds to Objective 1, Chapter 6 specifically addresses Objective 2, Chapter 7 is in response to Objective 3, and the last chapter responds to Objective 4.

Addressing these objectives will help ADP improve the quality and performance of AOD treatment services in California and maximize the usability of CalOMS data to enhance treatment policies and practices in California.

[1] The term “alcohol and other drug (AOD) use conditions” will be used interchangeably with “addiction” and “substance use disorders” (abuse and dependence), as these terms have all been used to define substance use disorders by the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition - DSM-IV* (American Psychiatric Association, 1994).

CHAPTER 1: CALOMS TREATMENT POPULATION

As part of the evaluation of the California Outcomes Measurement System (CalOMS), UCLA Integrated Substance Abuse Programs (ISAP) analyzed admission data collected from CalOMS in the fiscal year July 2006 to June 2007 to understand the impact of alcohol and drug (AOD) problems within the California publicly funded treatment system.[2] This chapter provides a comprehensive assessment of client admissions by documenting important sociodemographic, health status, and drug use factors associated with substance-abusing individuals entering treatment. In addition, given the differences associated with substance use disorders based on the substance used (i.e., opiates, alcohol, stimulants, and marijuana), the unique client characteristics associated with the various substances used is also discussed. A glossary of measures is included at the end of this chapter.

KEY HIGHLIGHTS: WHO RECEIVED SERVICES?

Clients Entering Treatment

- During fiscal year 2006-07 there were approximately 216,781 admissions with 168,670 unique clients[3] receiving treatment services in California.[4]

Sociodemographic Factors

- Almost two-thirds of admissions were male (64.2%) compared to 35.8% female. A higher proportion of female admissions occur in California compared to the rest of the United States (31.8%).
- Over half of the admissions (53.7%) were clients between 26 and 45 years old. Older adults aged 46 to 64 (21.4%) represented the second largest age group admitted to treatment, followed by the young adult group (18 to 25) (15.5%).
- Primary drugs differed by age groups: admissions for primary marijuana were dominated by youth groups 12-17 (38%) and 18-24 year olds (27.6%). Admissions for methamphetamine were mainly among middle-aged individuals 25-34 (35.5%), whereas cocaine/crack primary admissions were slightly older, ranging from 35 to 44 (35%). Most admissions for the 45-54 aged group were for primary alcohol use (32.9%) and opiate use (30.5%).
- The majority of admissions were White (43.4%) or Hispanic/Latino (33.9%), with fewer African American (15.2%), Asian/Pacific Islander (2.4%), and American Indian/Alaskan Native (1.6%) admissions. In national substance abuse data, Whites are also the majority treatment population, and Hispanics represent only 14% of the treatment population (SAMHSA, 2008).
- A substantial proportion of client admissions reported a criminal justice probation status (39.9%), with 10.6% of total client admissions under parole supervision. This is the first fiscal year in the history of ADP as a state department where over half of all admissions to treatment were involved with the criminal justice system.

Health Status Factors

- Having a lifetime mental illness diagnosis was reported by 21.3% of client admissions.
- Past HIV testing was reported by 66% of client admissions.
- Male client admissions were less likely to have had an HIV test than female client admissions (63% and 73%, respectively).
- HIV testing was lowest among Asian/Pacific Islander (51%) and Hispanic (61%) client admissions compared to White (70%) and African American (69%) client admissions.

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[2] All data reported in this chapter are all admission-based statistics and do not reflect unique clients.

[3] Of these unique clients, 80% had 1 admission, 14.6% had 2 admissions, 3.7% had 3 admissions, and the remaining 1.7% had 4 or more admissions.

[4] These numbers are preliminary and the final "fixed data set" as of December 2007. ADP shows 222,221 admissions for 172,401 unique clients.

Drug Use Factors

- Methamphetamine (including amphetamines) was the most commonly reported primary drug among client admissions (35.2%).
- A large proportion of client admissions reported a secondary drug (58.6%). Alcohol and marijuana were the most commonly reported (33.6% and 29.7%, respectively).
- Approximately half (50.5%) of the client admissions began using their primary substance as adolescents between the ages of 12 and 17.
- Among injection drug use admissions, 25.8% reported being infected with hepatitis C.

Substance Use Disorders by Client Characteristics

Opiates (Heroin and other opiates)

- The most common route of administration among primary opiate admissions was injection (73.5%).
- Most primary opiate client admissions reported using during the month prior to admission (81.7%), a trend similar to national admissions (83.2%).
- Almost one-quarter (23.6%) of primary opiate client admissions reported hepatitis C infection.
- Opiates were the most highly abused drugs among adult client admissions aged 45 to 64 (25%), followed by methamphetamine (24%) and alcohol (23%).
- Primary opiate and marijuana admissions were least likely to participate in social support activities (roughly 25%) compared to the other primary drug admissions.
- Primary opiate admissions were the least likely to have minor children under 17 years (31.3%) compared to the other primary substance admissions.

Alcohol

- Primary alcohol abuse was the second highest reported drug (18%) among female admissions.
- Primary alcohol abuse was most commonly reported among client admissions aged 65 years and older (38.9%).
- A quarter of primary alcohol admissions reported experiencing medical problems (24.7%), and 16.3% visited the emergency room in the month before treatment admission.
- Primary alcohol admissions had the highest rate of family conflict in the month before treatment (14.9%) relative to the other primary substance admissions.
- About 14.5% of primary alcohol admissions were on probation, which is higher than cocaine/crack and opiate primary admissions. Criminal justice involvement among primary alcohol client admissions included both arrests (10.9%) and jail time (13.4%) in the past month.

Stimulants (Methamphetamine/Amphetamine & Cocaine/Crack)

- A higher proportion of female admissions reported methamphetamine as their primary drug compared to male admissions (41.5% and 31.7%, respectively). This high proportion (43%) is by far the highest percentage of females in any of the primary drug categories (33.5% opiates, 32.6% alcohol, 33.5% cocaine/crack, and 28.6% marijuana).
- Methamphetamine is the top primary drug for both White (non-Hispanic) and Hispanic ethnic/racial admissions (40.3% and 39.2%, respectively); whereas the primary drug most reported among African American client admissions is cocaine/crack (39.1%).
- The most commonly abused drug among young adult (18-25) admissions was methamphetamine (46.6%).
- Both stimulant using groups (methamphetamine and cocaine/crack) client admissions had substantial criminal justice involvement: 22.1% of methamphetamine and 19.1% of cocaine/crack admissions had spent time in jail at last once in the previous month.
- Compared to other primary drug categories, admissions for primary methamphetamine were most likely to have young children under the age of 5 (53.8%) and report that their children

were living elsewhere due to court mandate or that their parental rights terminated (54.5% and 53.0%, respectively).
- Roughly 26.1% of primary cocaine/crack admissions reported a lifetime diagnosis of mental illness.
- Stimulant-using client admissions were less likely to have been tested for HIV (methamphetamine: 67% and cocaine/crack: 66%) compared to opiate admissions (73%).

Marijuana

- Primary marijuana use was most commonly reported among youth admissions under 18 (62.7%). Alcohol as the second most abused substance among these youth admissions (22.7%).
- Among young adult admissions (18-24), marijuana (25.5%) was reported as the second most abused drug.
- Criminal justice involvement in terms of spending time in jail during the month before treatment was reported among 18.6% of primary marijuana admissions.
- Primary marijuana client admissions were the second least likely of client admissions for primary drugs to participate in social support activities (24.6%).
- Primary marijuana admissions were the least likely to have their parental rights terminated (7.5%) compared to other primary drug admissions.

CLIENT ADMISSION CHARACTERISTICS

This section describes the sociodemographic, health status, and drug use factors of client admissions in the California alcohol and drug treatment system during fiscal year 2006 to 2007.

Sociodemographic Factors

Basic Demographic Characteristics

Gender, age, and race/ethnicity were examined at treatment admission (Table 1). Female admissions in California are higher than national female admissions (35.8% and 31.8%, respectively). Client admissions between 25 and 44 years old were most represented in treatment, followed by youth groups and older adults. The majority of client admissions were White (non-Hispanic) or Hispanic/Latino. The mean age of client admissions in California was 34.9 $\pm$ 12.3 years.

Table 1: Client Admission Basic Demographic Characteristics

	Total Admissions *N*=216,781
Gender	
Male	139,068 (64.2%)
Female	77,589 (35.8%)
Age (years)	
Mean Years	34.9 $\pm$ 12.3

12-17	18,938 (8.7%)
18-24	33,715 (15.6%)
25-34	54,315 (25.1%)
35-44	56,317 (26.0%)
45-54	41,792 (19.3%)
55 and older	11,639 (5.4%)
Race/Ethnicity[5]	
White	94,159 (43.4%)
Hispanic/Latino	73,437 (33.9%)
Black	33,003 (15.2%)
American Indian/Alaskan Native	3,355 (1.6%)
Asian/Pacific Islander	5,241 (2.4%)
Other	7,586 (3.5%)

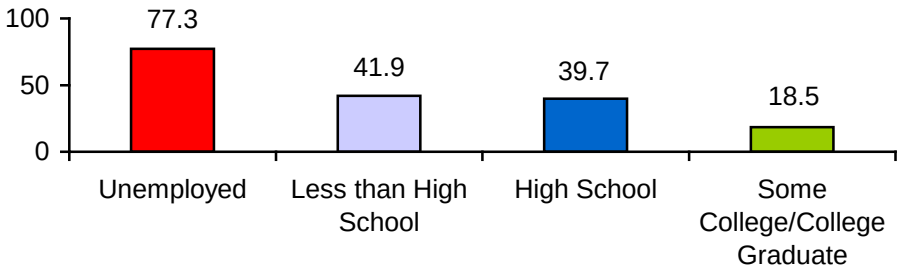
Source: CalOMS Data Fiscal Year July 2006 to December 2007

Other important sociodemographic factors assessed at treatment admission included employment/education, criminal justice involvement, living arrangements, social support, family relations, and parental status.

Employment & Education

Both employment and education status are largely related to substance abuse behaviors (Anglin & Hser, 1992). As highlighted in Figure 1, a substantial proportion of client admissions were unemployed (77.3%), with less than half (39.7%) finishing high school.[6] These findings are representative of national data, which report that close to 70% of admissions are unemployed and 44.2% completed high school (SAMHSA, 2008).

Figure 1: Employment & Educational Status

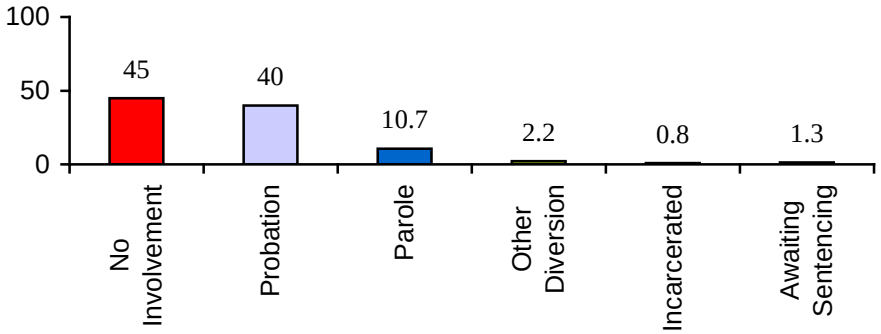


Criminal Justice Involvement

A large percentage of individuals with criminal justice involvement tend to also have problems with illicit drugs (Anglin & Hser, 1990). Figure 2 displays the extent of criminal justice involvement among client admissions. As can be seen, substantial proportions of admissions were on probation (40%) or parole (10.7%). About 12.6% of client admissions had been arrested, 17.1% had spent days in jail, and 2.6% spent time in prison during the month before treatment.

[5] CalOMS collects eight racial categories; however, for the purposes of this report, race categories were combined into six standard categories shown in Table 1.
[6] This statistic includes admission data for youth under 18. Chapter 2 describes data specific to youth 12-17 on measures of employment and education.

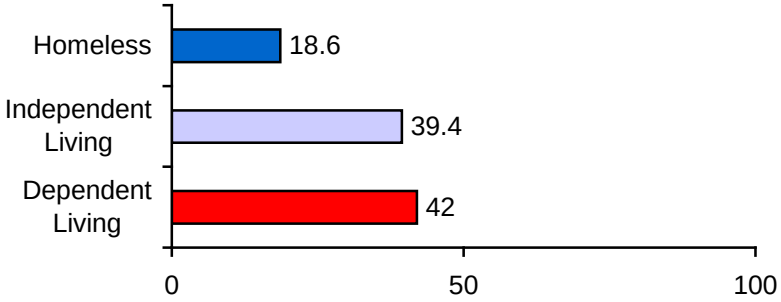
Figure 2: Criminal Justice Involvement



Living Arrangements

Living arrangements was measured as a three category variable (homeless, independent, and dependent living). Dependent living is defined as individuals who do not contribute to the cost of where they are living in any way, whereas independent living is defined as individuals who own their home, rent/live alone, live with roommates and pay rent or otherwise contribute financially to the cost of the home/apartment. Homelessness, defined as someone who is living on the street or in an emergency shelter, is a serious issue with substance abusing populations, with rates ranging from 40% to 65% (Kertesz et al., 2005). As shown in Figure 3, 18.6% of client admissions were homeless, 42% were living dependently,[7] and 39.4% were living independently.

Figure 3: Living Arrangements



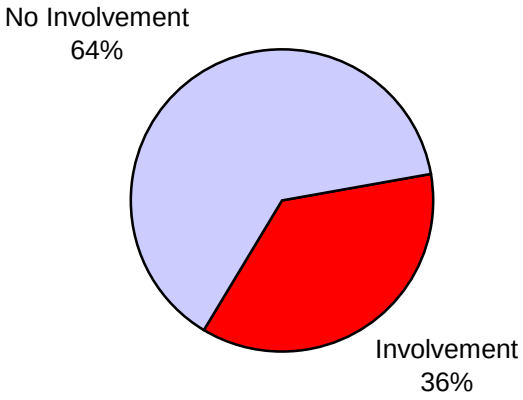
Involvement in Social Support

Increasingly, involvement in social support is being included as a critical component of a substance-abusing individual's recovery, both in meetings conducted as part of the treatment regime, and as a required or encouraged extracurricular treatment resource. The majority (63.6%) of client admissions had no prior involvement with social support activities, compared to

[7] This statistic includes admission data for youth under 18. Chapter 2 describes data specific to youth 12-17 on this measure of living situation.

36.4% reporting some form of involvement, including attending Alcohol Anonymous (AA) meetings, church support groups, and other recovery support meetings.

Figure 4: Involvement in Social Support



Serious Family Conflict

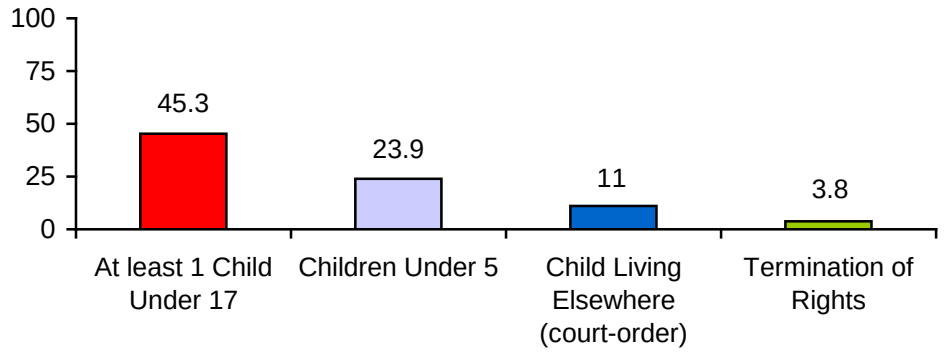
Interpersonal conflict with family members can have a negative impact on a drug user's functional status (Spitzer et al., 1995). CalOMS data indicate that among client admissions, 12.3% had serious family conflict in the month before treatment entry.

Parental Status & Dysfunction[8]

There are immeasurable impacts of alcohol and drug abuse on the family network. Substance-abusing parents risk jeopardizing the well-being of their children. Children who live in environments where drug use is present are at high risk for abuse and negligence as a result of the drug preoccupation, erratic behavior, and psychiatric instability of their drug-abusing parents (Daley et al., 2005). Four key variables of children and parental status measured by CalOMS include having at least one minor child (under the age of 17), having children under the age of 5, having a custody status of children living elsewhere, and having parental rights terminated. Among client admissions, 45.3% had at least 1 minor child (under the age of 17) and 23.9% had children under the age of 5. In terms of custody and parental rights, 11% did not have custody of their children (i.e., they reported that their children were living elsewhere because of a child protection order) and 3.8% had their parental rights terminated (Figure 5).

[8]There may be a possible over-count of client admissions with two measures that ask about minor children (under 17 and under 5 years old).

Figure 5: Parental Status & Dysfunction



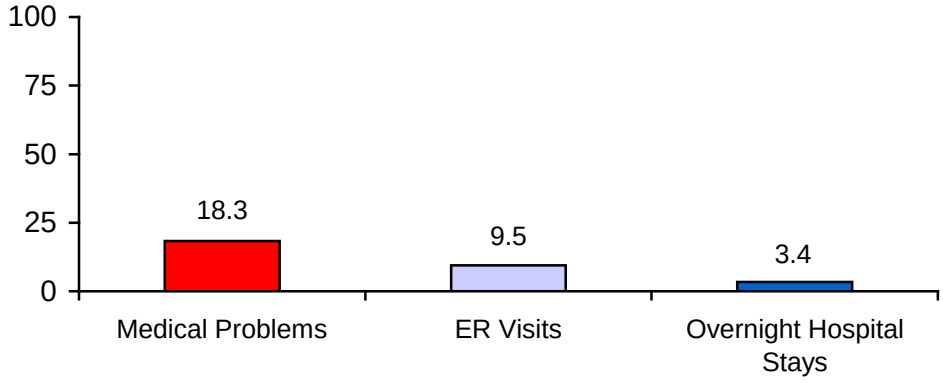
Health Status Factors

Important health status factors examined at treatment admission included medical health problems, medical treatment (including emergency room visits and overnight hospital stays in the previous month), the extent to which clients had been diagnosed with a mental illness or infectious disease (including tuberculosis, hepatitis, and sexually transmitted infections), and past testing for the human immunodeficiency virus (HIV).

Medical Problems & Treatment

Individuals seeking treatment for drug dependence typically report experiencing a number of physical health problems at the time of admission (Hardie, 2002). As shown in Figure 6, 18.3% of client admissions had experienced at least one medical problem in the month before treatment. Research shows that alcohol and drug dependence are ranked among the top causes for drug-related visits to emergency rooms (Velasquez et al., 2004), with an average of two drugs mentioned per emergency room episode. Figure 6 displays the percentage of client admissions reporting at least one emergency room (ER) visit or one overnight hospital stay in the past 30 days.

Figure 6: Medical Problems and Treatment in Past Month



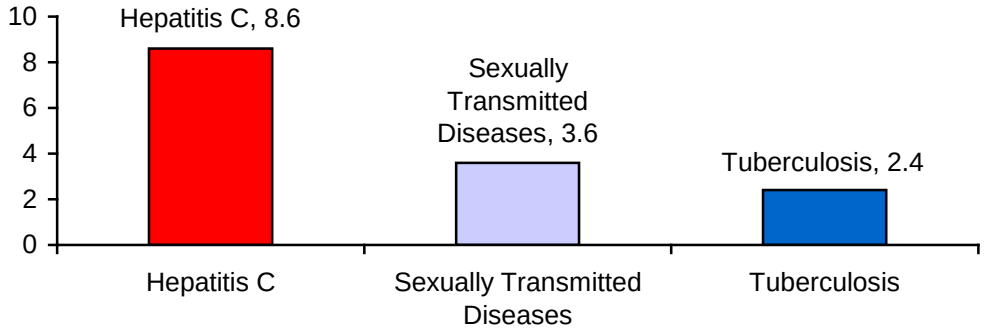
Individuals with Lifetime Mental Illness

The co-occurrence of mental and infectious diseases among drug abusing populations is of great public health concern. Approximately 21.3% of client admissions had reported a lifetime diagnosis of a mental illness.[9] This is not surprising given that serious mental health problems are common among illicit drug-abusing populations (Brooner et al., 1997). Based on previous work done by the Proposition 36, or Substance Abuse and Crime Prevention Act of 2000 (SACPA), evaluation, between 55% and 69% of individuals diagnosed with an alcohol or drug use disorder have also been diagnosed with a co-occurring mental health disorders.

Infectious Disease Status

Drug abusing populations also engage in risky behaviors, including injection drug use practices and unsafe sexual behaviors that place them at high risk for contracting and transmitting infectious diseases, such as HIV, the hepatitis viruses, TB, and other sexually transmitted infections (Lange et al., 1992). Figure 7 displays the number (and proportion) of client admissions with an infectious disease: tuberculosis (4,584; 2.4%), hepatitis C (16,488; 8.6%), and sexually transmitted diseases (6,896; 3.6%).

Figure 8: Infectious Disease Status



HIV Testing

The extent of HIV testing among client admissions was examined. Results showed that 66% of client admissions had past HIV testing, with male client admissions less likely to have an HIV test than female client admissions (63% vs. 73%, respectively). In addition, HIV testing was lowest among Asian/Pacific Islander (51%) and Hispanic (61%) admissions compared to Caucasian (70%) and African Americans (69%) admissions. Admissions among stimulant users (methamphetamine: 67%, and cocaine/crack: 66%) were less likely to have been tested for HIV than were heroin admissions (73%).

Drug Use Factors

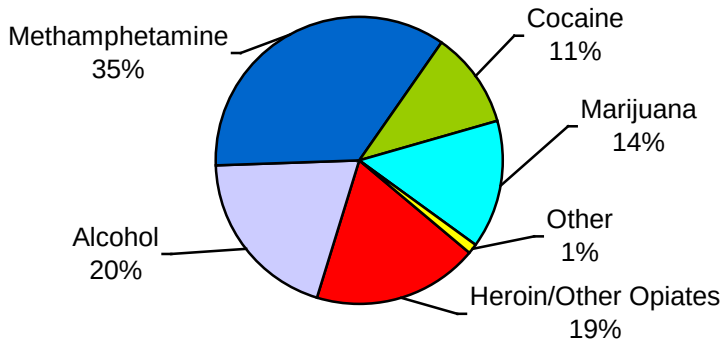
Important drug use factors examined among the clients at admission included primary and secondary drugs of abuse, primary plus secondary drug use, frequency of primary/secondary drug use in the previous month, age of first use of primary and secondary drugs, route of administration of primary and secondary drugs, injection in previous 30 days and previous 12 months, alcohol use (in addition to primary and secondary drug use), and previous treatment.

[9]A lifetime diagnosis of mental illness was determined by a "yes" response to the question, "Has the client ever been diagnosed with a mental illness?"

Primary Substance Use

When clients enter treatment they typically present various substance abuse patterns. At admission, clients are asked to describe their "primary substance" problem. Figure 9 highlights the primary substance abuse patterns reported among client admissions, with methamphetamine the most significant drug problem reported (35%), followed by alcohol (20%), heroin/other opiates (19%), marijuana (14%), and cocaine/crack (11%).

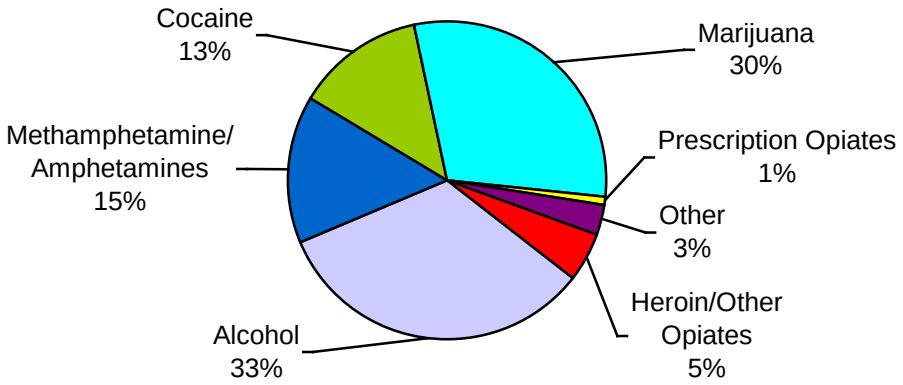
Figure 9: Primary Substance Use at Admission



Secondary Substance Use

A substantial proportion of client admissions (58.6%) reported a secondary drug problem (Figure 10). As highlighted, alcohol and marijuana were the two most commonly reported secondary drugs abused among client admissions (33% and 30%, respectively), which is also characteristic of national treatment admissions reported by Treatment Episode Data Set (TEDS).

Figure 10: Secondary Substance Use at Admission



Primary Plus Secondary Substance Use

The use of both primary and secondary substances together, referred to as "polydrug use"[10] is more common than abuse of alcohol alone or of a single drug (TEDS, 2006). Polydrug use is a concern as it can result in riskier health issues than would be experienced if only one substance was used. Current data allow for the examination of those who reported that both substances posed a problem to the user. Slightly over half of client admissions reported both a primary and a secondary substance of abuse (58.6%). This proportion is similar to the national level wherein 56% of all persons admitted to treatment in publicly funded facilities reported abuse of at least one substance in addition to their primary substance.

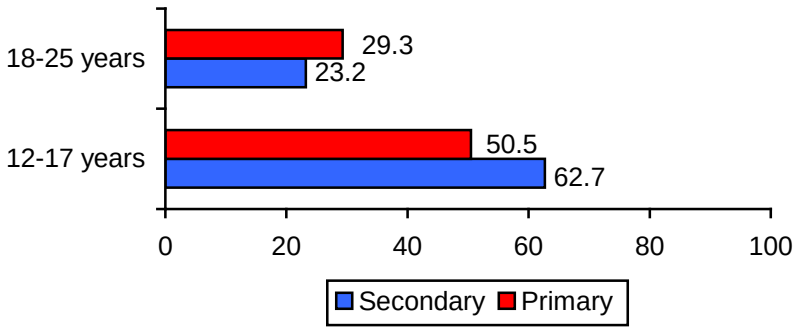
Frequency of Primary/Secondary Drug Use

Frequency of drug use is an important measure of the severity of an individual's drug or alcohol problem (Anglin et al., 1997). On average, client admissions reported using their primary substances of abuse 9.9 $\pm$ 12 days in the previous month at admission. Use of secondary substances averaged 6.5 +10 days (in the 30 days prior to treatment entry). There were client admissions that did not report the use of a primary or secondary drug (35.9% and 43.6%, respectively). Past studies indicate that clients who report no drug use upon entry is typically related to either having been recently released from jail or prison or discharged/transferred from a residential or detoxification treatment facility (Anglin et al., 1992).

Age of First Primary/Secondary Use

The age of first use is a particularly informative variable as it provides an assessment of history of primary and secondary drug use. On average, the age of first use of the primary substance among admissions was 19.8 years, and 18.2 years for secondary substance use. As shown in Figure 11, approximately half (50.5%) of client admissions began using their primary substance between 12 and 17 years old, whereas a greater proportion (62.7%) began using the secondary substance between this same age period. Nearly one-third (29.3%) of client admissions began using their primary substance during the ages of 18 to 24, with less (23.2%) admissions beginning to use a secondary substance during this age frame. Quite often, average age of first use of the secondary substance is younger than the average age of first use of the primary substance. This is a function of the type of substances most commonly reported as the secondary substances—namely alcohol and marijuana, which are typically first initiated at an early age.

Figure 11: Age of First Use



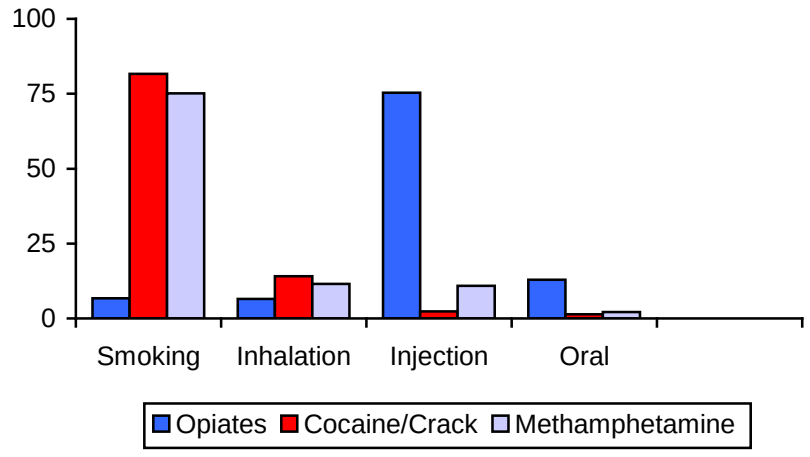
[10] Polydrug use refers to the use of more than one substance (SAMHSA, 2006).

Route of Administration

The route an individual uses to administer their primary and secondary substances of abuse is an important consideration in describing the severity of an individual's drug problem, given that the timing and intensity of the physiological effects of drug use are in large part dependent upon the route of administration (Rawson et al., 2006). The patterns of primary and secondary drug routes of administration were examined in aggregate as is done nationally. Smoking is ranked first and oral reported second as preferred routes of administration among client admissions. These patterns are slightly different to national trends in route, with 45% of primary drugs administered orally and smoking ranked second (33.2%). In addition, the national rate of inhalation of primary drugs is higher than California's (11.8% vs. 7.0%, respectively), whereas the rate of injection for primary drugs is higher in California (17.9%) than nationally (9.7%; SAMHSA, 2008). These differences may be indicative of differences in drug types or of higher drug problem severities in California.

While alcohol is almost exclusively used orally and marijuana is almost always smoked, the route of administration of cocaine, heroin, and methamphetamine varies among admissions (Figure 12). For methamphetamine, most admissions used the smoking route (75.1%), with 11.5% the intranasal route, 10.9% the injection route, and 2.1% the oral route. For cocaine/crack, smoking was the most preferred route (81.6%), followed by intranasal (14.1%), injection (2.3%), and oral (1.4%). The most common route reported by opiate admissions was injection (75.3%), followed by oral (12.9%), inhalation, and intranasal routes (6.7% and 6.5%, respectively).

Figure 12: Route of Administration by Primary Drug



Looking closer at route of administration, we examined the extent of any injection (needle) use in the previous 30 days and 12 months among admissions. Injection users are at great risk for infection and transmission of numerous life-threatening diseases, including HIV, hepatitis B and C viruses, and other health complications related to injection, including overdose, endocarditis, severe bacterial infections and skin abscesses (Levine & Brown, 2005). Among the admissions, 21.3% reported injecting drugs in the previous year (12 months) and 15.4% indicated injection use in previous month. Among injection client admissions, a quarter (25.9%) tested positive for hepatitis C. Research indicates that the longer an individual uses needles to inject drugs, the greater the likelihood of hepatitis C infection (Hagan & Des Jarlais, 2000).

Alcohol Use

It is important to understand alcohol use in drug-abusing populations, given the associations linked to other health and social issues (McKenna et al., 1996). Roughly 21.9% of client admissions reported alcohol use in addition to their primary and secondary drug use. This does not include admissions that reported alcohol as a primary or secondary problem.

Previous Treatment

Because drug users move through various stages of addiction and treatment careers, an important factor that needs to be considered when attempting to understand addiction as a chronic illness is history of previous treatment episodes (Anglin et al., 1997). Among client admissions, the average rate of previous treatment episodes was almost 2 $\pm$ 5.9.

SUBSTANCE USE DISORDERS

This section describes the unique client characteristics associated with the various substance use disorders—opiates, alcohol, stimulants, and marijuana.

Opiates

Opiates, sometimes referred to as narcotics, are a group of drugs that are medically used to treat pain, but also have a high potential for abuse. Heroin appears as a white or brown powder and accounts for 90% of opiate abuse in the United States. Other opiates, including morphine, oxycodone, and codeine are synthesized or manufactured and come in a variety of forms including capsules, tablets, syrups, solutions, and suppositories.

Sociodemographic Factors

Admissions for primary heroin and other opiates were predominately male (66.5%), a trend also seen nationally (61.1%; SAMHSA, 2008). Most opiate abusing clients were older, with an average age of 40.8 $\pm$ 11.5 years at admission and most admissions between the ages of 45 and 54 (30.5%). Fewer opiate users were between 25 and 34 years old (22%). About a quarter of primary opiate users were unemployed (74.3%), which is similar to the national level (77%; SAMHSA, 2008). About 34.6% of these clients had less than a high school education, which is comparable to the national figure (32%; SAMHSA, 2008). A substantial proportion of primary opiate abusing clients were on parole: 20.1% by the California Department of Corrections and Rehabilitation (CDCR) and 17.6% from other jurisdictions, with 8.8% on probation. In terms of criminal justice involvement, few opiate abusing clients reported arrests (8%) or days in jail (10%) in the month prior to admission. Close to a quarter (24.5%) of primary opiate clients reported engaging in some form of social support activity at treatment admission. Among opiate abusing clients, 14.3% had at least 1 child under 17 years old and 11.4% had children under the age of 5 years old. Custody and parental rights of opiate abusers was as follows: 8.2% reported that their children were living elsewhere (due to court orders) and 13.1% had their parental rights terminated.

Health Status Factors

A lifetime diagnosis of mental illness was reported among 21.8% of opiate abusers. About 19.1% of these clients reported experiencing medical problems in the previous month at admission, 9.3% reported receiving medical treatment via emergency rooms visits, and 3.6% stayed overnight in the hospital in the prior 30 days. Approximately 23.6% of primary opiate clients reported infection with hepatitis C and 4.1% indicated a positive status of tuberculosis.

Drug Use Factors

The largest percentage of primary opiate users reported that they began using opiates between the ages of 18 and 24 (40%). The mean rate of previous treatment episodes among primary opiate abusing clients was 2.9 ± 4.6. Most primary opiate abusers reported using in the 30 days prior to treatment, with an average of 19.1 days.

Alcohol

Although most Americans have used alcohol socially at some point in their lives, either lightly or moderately, heavy and frequent alcohol consumption (referred to as alcoholism) can have disastrous medical and social effects on individuals, families, and communities.

Sociodemographic Factors

The majority of treatment admissions for primary alcohol abuse were male (67.4%), White/Non-Hispanics (50.1%), followed by Hispanics (29.3%), and Blacks/African Americans (13.6%). On average, primary alcohol abusers were 37.6 ± 13.2 years old at admission, with 24.9% between the ages of 45 and54 and 27.6% between 35 and44 years old. About 22.2% of primary alcohol users were employed and 36.4% had less than a high school education. Approximately 14.5% of alcohol abusers were on probation, 11.2% on parole from the CDCR, and 11.2% on parole from other jurisdictions. Criminal justice involvement reported among primary alcohol clients included both arrests (10.9%) and jail time (13.4%) in the previous month at admission. In terms of social support involvement, 37.3% of primary alcohol clients reported engagement in some form of social support activity at treatment entry. Among alcohol abusing clients, 16.4% had children (at least one under 17 years old) and 13.1% had children under the age of 5. About 15.4% of alcohol abusing clients reported that their children were living elsewhere by a court mandate and 13.3% had their parental rights terminated.

Health Status Factors

Approximately 27.5% of primary alcohol clients reported a lifetime diagnosis of mental illness and 24.7% reported experiencing medical problems in the past month at admission. Many primary alcohol clients reported receiving medical treatment in the previous month at admission: 16.3% had emergency room visits and 6.2% had a hospital stay in the prior 30 days. Hepatitis C infection was present in 6.2% of primary alcohol admissions.

Drug Use Factors

Age of first use of primary alcohol abuse was most often between 12 and 17 (74.4%). Most primary alcohol abusers reported using alcohol in the 30 days prior to treatment admission (71.3%), with an average of 11.2 days in the past month. The mean rate of previous treatment episodes among primary alcohol abusing clients was 2.6 ± 9.6 days.

Stimulants

Two Schedule II central nervous system psycho-stimulants of major concern are cocaine (including crack) and methamphetamine (including other amphetamines). Chemically similar, these psycho-stimulants have a high potential for addiction. Although both stimulant drugs have similar psychoactive addictive properties and can be administered through similar routes of administration, there are important differences between these stimulant users bio-chemically, psychologically, and behaviorally.

Cocaine (including Crack)

Epidemiological historical data on cocaine and crack abuse show that it has been more problematic among African Americans and predominantly concentrated in urban and east coast areas. This trend is still seen today with treatment admission rates for cocaine among African Americans at the national level estimated at 52.2% in 2005 (SAMHSA, 2008) and in California

accounting for 55.6% of all admissions for that race/ethnicity. White/non-Hispanic and Hispanic primary cocaine/crack users accounted for 18.8% and 19.8%, respectively, of all admissions for that race/ethnicity.

Sociodemographic Factors

The majority of primary cocaine/crack clients were male (66.5%), which is representative of national trends (61.7%; SAMHSA, 2008). In terms of age, the average age of primary cocaine/crack abusers at admission was 40.8 $\pm$ 10.4 years, with most admissions between 35 and 44 (35%) or 45 and 54 (31.9%). Less than a fifth of primary cocaine/crack abusers were employed at admission (17.7%), which is lower than national estimates of 22.9% (SAMHSA, 2008); 41.8% of clients with primary cocaine/crack abuse had a high school education, which compares to the national level at 43.4% (SAMHSA, 2008). A criminal justice status of probation was reported by 10.2% of primary cocaine/crack users; 14.4% and 15.2% reported parole from the CDCR or another jurisdiction, respectively. Approximately 13.6% of clients with primary cocaine/crack abuse reported arrests and one-fifth (19.1%) reported jail days during the previous 30 days at admission. Over one-third of these clients reported engagement in some form of social support activity (38.2%). Among cocaine/crack abusing clients, 10.3% had at least 1 child under 17 years old and 8.5% had children under the age of 5 years old. Custody and parental rights of cocaine/crack abusers were as follows: 9.6% reported that their children were living elsewhere (given court orders) and 12.1% had their parental rights terminated.

Health Status Factors

Roughly 26.1% of primary cocaine/crack users reported a lifetime diagnosis of mental illness and 17.5% reported experiencing medical problems in the previous month, with 8.3% visiting emergency rooms and less than 5% of total admissions staying in a hospital.

Drug Use Factors

Most primary cocaine/crack clients started using cocaine/crack between 18 and 24 years old (36.7%); 25.6% started as young adults (25-34) and 25.5% as adolescents (12-17). A substantial proportion of primary cocaine/crack abusing clients (60.2%) reported using cocaine/crack in the month before treatment admission (with an average of 8.2 days), which is similar to the national proportion (70.25%; SAMHSA, 2008). The mean rate of previous treatment episodes among primary cocaine/crack abusing clients was 3.0 $\pm$ 9.0.

Methamphetamine (including Amphetamines)

Methamphetamine, commonly called “meth, speed, crystal, crank, ice, or tina” is a potent psycho-stimulant that has virtually become the nation’s largest homegrown drug problem, posing significant public health and safety challenges (Rawson et al., 2006). Data indicate that methamphetamine has largely been a West Coast phenomenon. The methamphetamine problem in California is substantial. Data over the last several years indicate that treatment admissions for methamphetamine in publicly funded programs have continued to increase as compared to other drugs, and with shifting demographics. Once considered a drug most commonly used only among White, mid-aged males, we are now seeing large proportions of females, Hispanic, and Asian/Pacific Islanders, and youth groups entering treatment for methamphetamine. In general, research shows that women are using methamphetamine at rates equal to men (Rawson et al., 2006). The National Association of Counties reports that more than 50% of inmates are being held on methamphetamine-related crimes in many counties throughout California (Kyle & Hansell, 2005).

Sociodemographic Factors

Although most admissions for primary methamphetamine abuse were male (57.8%), a substantial proportion were females (42.2%), which is by far the highest percentage of females in any of the primary drug categories (33.5% opiates, 32.6% alcohol, 33.5% cocaine/crack, and 28.6%

marijuana). White (Non-Hispanic) (49.8%) and Hispanic (37.8%) ethnic/racial clients mainly constituted most of these methamphetamine admissions (Nationally: 67.5% and 19.3%, respectively; SAMHSA, 2008). The average age of primary methamphetamine abusers at admission was 33 ± 9.6 years. As seen by age categories, most methamphetamine abusing clients were middle-aged between 25 and 34 (35.5%), followed by 35- to 44-year-olds (28.9%) and to a lesser extent 18- to 24-year-olds (19.3%). Most methamphetamine abusing clients were unemployed (75.7%), and 41.3% had less than a high school education. Criminal justice status at admission among primary methamphetamine clients included: 47.2% probation and 47.1% and 45.8% on parole from CDCR or another jurisdiction, respectively. Many of these clients reported having arrests (16%) and spending days in jail (22.1%) in the month before admission. About half of methamphetamine-abusing clients reported engaging in some form of social support activity (46.6%). Among methamphetamine abusing clients, a substantial proportion (48.5%) had children under 17 years old (at least 1) and many had children under the age of 5 (53.8%). In addition, a significant number of methamphetamine abusing clients reported that their children were living elsewhere due to a court order or had their parental rights terminated (54.5% and 53.0%, respectively). This is a serious problem as demonstrated by a survey by the National Association of Counties (''The Impact of Meth on Children'') which found methamphetamine as a major cause of out-of-home placements (40%).

Health Status Factors

Approximately 18.9% of primary methamphetamine clients reported a lifetime mental illness diagnosis, and 15.8% experienced medical problems in the previous month. Approximately 7.3% of these clients reported emergency room visits and 2.3% indicated having hospital stays in the Previous month.

Drug Use Factors

The largest percentage of methamphetamine clients (43.5%) began using methamphetamine as adolescents (between 12 and 17 years old). In terms of frequency of use at admission, slightly more than half (53.9%) of primary methamphetamine clients reported use in the 30 days prior to admission (with an average of 6 days), which is close to the national proportion of 55.4% (SAMHSA, 2008).The mean rate of previous treatment episodes among primary methamphetamine abusing clients was 1.2 ± 2.5, which is considerably lower than reported in other primary drug categories. More than for any other primary drug, methamphetamine clients are entering with years of use and no previous treatment.

Marijuana

Abuse and chronic dependence on marijuana can have serious short- and long-term physical health and social effects.

Sociodemographic Factors

The majority of primary marijuana client admissions were male (71.4%), which is similar to national trends (78%; SAMHSA, 2008). In terms of the racial/ethnic composition of primary marijuana admissions, the largest percentage were Hispanic (41.3%), followed by White/non-Hispanic (30%), and African American (20.4%). The average age of primary marijuana abusers was 23.8 ± 10.1 years at admission, with proportions ranging from 38% among 12 and 17 year olds and 27.6% among 18 to 24 year olds. Given that marijuana users are younger aged, it should be noted that data below on education, employment, parental status, living situation, and previous treatments may be reflective of this factor. Close to 20% of primary marijuana clients were employed (19.2%), which is lower than the national proportion (31.7%; SAMHSA, 2008). Only a quarter of primary marijuana abusers had obtained a high school education (26.5%),[11]

[11] This statistic includes admission data for youth under 18. Chapter 2 describes data specific to youth 12-17.

with is about the same amount at the national level (SAMHSA, 2008). Approximately 18.1% of primary marijuana users were on probation at admission; few were on parole from the CDCR or another jurisdiction (6.2% and 9.2%, respectively). In terms of criminal justice involvement, 12.1% of primary marijuana abusers reported arrests and 18.6% had experienced jail days in the 30 days prior to treatment admission. Roughly, 24.6% of primary marijuana clients reported engagement in some form of social support activity. Among marijuana abusing clients, 9.4% had at least 1 child[12] under the age of 17, and 12% had children under the age of 5. Approximately 11.2% of primary marijuana users reported that their children were living elsewhere (due to a court order) and 7.5% had their parental rights terminated.

Health Status Factors

About 14.5% of primary marijuana clients reported experiencing medical problems in the month prior to admission; 5.8% visited an emergency room and 1.7% had an overnight hospital stay in the 30 days prior to admission. Approximately 14% of these clients reported having a lifetime diagnosis of mental illness.

Drug Use Factors

Age of first use of marijuana among primary marijuana users was mostly during adolescence (between 12 and 17 years; 88.1%). Over half (60.6%) of primary marijuana clients reported using marijuana in the 30 days prior to admission, with an average of 7.5 days used. This is similar to national estimates (64%) (SAMHSA, 2008).The mean rate of previous treatment episodes[13] among primary marijuana abusing clients was less than 1 (0.6 ± 2).

SUMMARY: WHAT DOES THIS ALL MEAN?

Individuals entering the treatment system in California have a varied set of alcohol and drug problems, with complex sociodemographic, health, and drug use problems and issues that must be addressed at some point during the course of their treatment and recovery[14] experience. It has become increasingly important to look closely at a client's substance use disorder upon entrance into treatment, given the differential client characteristics associated with various substance use disorders (opiates, alcohol, stimulants, and marijuana). These differences serve to reflect the diversity of treatment needs among substance-abusing individuals in California. It is important for policy makers and leaders in the field of addiction to consider these issues, especially when attempting to determine and evaluate the impact associated with treatment. In addition, this information provides a foundation or baseline index of important client characteristics that need to be considered (by substance use disorder) when developing treatment benchmarks for critical performance and outcome measures[15] in California.

[12] This statistic includes admission data for youth under 18 and younger clients are less likely to be parents.
[13] This statistic includes admission data for youth under 18 and younger clients may be less likely to have had previous treatment episodes as compared to older aged clients.
[14] In this context, treatment is different from recovery. Recovery is defined as "when an individual has achieved substantial reductions in use of drugs and/or alcohol, as well as improvement in several other important functional outcome domains (family, employment, legal, etc.)." An outcome domain is an area of life function measured at the individual-level that is expected to be positively influenced by a treatment. Positive functioning in several of these outcome domains translates into recovery.
[15] Performance and outcome measures are discussed in Chapters 4 and 5 of this final report.

REFERENCES

Anglin, M. D., & Hser, Y. (1990). Treatment of drug abuse. In M. Tonry, & J. Q. Wilson (Eds.), *Drugs and crime, Vol. 13* (pp. 393-460). Chicago: University of Chicago Press.

Anglin, M.D., & Hser, Y.I. (1992). Drug abuse treatment. In R.R. Watson (Ed.), *Drug and alcohol abuse reviews Vol. 4*. Totowa, NJ: Humana Press.

Anglin, M.D., Hser, Y-I., & Grella, C.E. (1997). Drug addiction and treatment careers among clients in the Drug Abuse Treatment Outcomes Study (DATOS). *Psychology of Addictive Behaviors, 11*, 308-323.

Brooner, R.K., King, V.L., Kidorf, M., Schmidt, C.W., & Bigelow, G.E. (1997). Psychiatric and substance use comorbidity among treatment-seeking opioid abusers. *Archives of General Psychiatry, 54*(1), 71-80.

Daley, M., Shepard, D.S., & Bury-Maynard, D. (2005). Changes in quality of life for pregnant women in substance user treatment: Developing a quality of life index for the addictions. *Substance Use & Misuse, 40*(3), 375-94.

Hagan, H., & Des Jarlais, D.C. (2000). HIV and HCV infection among injecting drug users. *Journal of Mount Sinai Hospital of New York, 67*(5 & 6), 423-428.

Hardie, T.L. (2002). The genetics of substance abuse. *AACN Clinical Issues, 13*(4), 511-22.

Kertesz, S.G., Larson, M.J., Horton, N.J., Winter, M., & Saitz, & Samet, J.H. (2005). Homeless chronicity and health-related quality of life trajectories among adults with addictions. *Medical Care, 43*(6), 574-585.

Kyle, A.D., & Hansell, B. (2005). *The Meth epidemic in America: Two surveys of U.S. Counties*. Washington, DC: National Association of Counties.

Lange, W.R., White, N., & Robinson, N. (1992). Medical complications of substance abuse. *Postgraduate Medicine, 92*, 205-208, 211-214.

Levine, D.P., & Brown, P.V. (2005). Infections in injection drug users. In G.L. Mandell, J.E. Bennett, & R. Dolin (Eds), *Mandell, Douglas, and Bennett's principles and practice of infectious diseases* (6th ed. Vol. 2., pp. 3462-3476). Philadelphia: Churchill Livingstone.

McKenna, M., Chick, J., Buston, M., Howlett, H., Patience, D., & Ritson B. (1996). The SECCAT survey, I: the costs and consequences of alcoholism. *Alcohol & Alcohol Studies, 31*, 1-14.

Rawson R.A., Gonzales, R.G., & Ling, W. (2006). Methamphetamine abuse and dependence: An update. *Directions in Psychiatry, 26*(3), 221-236.

Spitzer, R.L., Kroenke, K., Linzer, M., Hahn, S.R., Williams, J.B., deGruy, F.V. 3rd, Brody, D., & Davies, M. (1995). Health-related quality of life in primary care patients with mental disorders. *Journal of American Medical Association, 274*, 1511-1517.

Substance Abuse and Mental Health Services Administration, Office of Applied Studies. (2008). Treatment Episode Data Set (TEDS). Rockville, MD: U.S. Department of Health and Human Services.

Velasquez, E.M., Anand, R.C., Newman, W.P. 3rd, Richard, S.S., & Glancy, D.L. (2004). Cardiovascular complications associated with cocaine use. *The Journal of the Louisiana State Medical Society, 156*(6), 302-310.

Glossary of Terms

Sociodemographic Factors

- Gender
- Race/Ethnicity
- Age
- Employment
- Education
- Criminal Justice Involvement - as measured by jail days, prison days, arrests, and parole and probation status.
- Living Arrangements - measured by homelessness, dependent and independent living situations.
- Family Support - measured by exposure to conflict with family.
- Parental Status - measured by having at least one child, children under age 5, number of children not living with parent and parental rights terminated.
- Social Support Involvement – measured by use of social support (i.e., AA)

Health Status Factors

- Lifetime Diagnosis with a Mental Illness
- Medical Problems – at least one medical problem in past 30 days
- Medical treatment – at least one emergency room visit or 1 overnight hospital stay in past 30 days
- Diagnosed with infectious diseases – past infection with tuberculosis, Hepatitis C, or sexually transmitted diseases

Drug Use Factors

- Primary Drug
- Secondary Drug
- Primary plus Secondary (polydrug) use
- Alcohol Use (if not primary/secondary drug)
- Age of First Use of Primary Drug/Secondary Drug
- Frequency of Primary/Secondary Drug Use in Past 30 Days
- Route of Administration – Primary Drug/Secondary Drug
- Injection (Needle) Use in past 30 days/12 months
- Prior Treatment Episodes

CHAPTER 2: PRIORITY GROUPS

There is no question that alcohol and illicit drug abuse and/or dependence[16] among some specific groups[17] of individuals pose complex and costly social and economic burdens to the treatment system. These groups include women (including females with minor children and pregnant females), certain age groups (youth, young adults, and older adults), individuals with criminal justice involvement, individuals with mental illness, and special needs groups (injection drug users, homeless/dependent living, and disabled individuals and veterans). For the purposes of this chapter, these groups will be referred to as "priority groups." Examining data collected from the California Outcomes Measurement System (CalOMS), this chapter presents a detailed description of individuals represented within each respective priority group who entered the California publicly funded treatment system during the July 2006 to June 2007 fiscal year.

Treatment admission data for individuals characterized within the priority groups (*N*=216,781) is examined separately by critical life areas that affect functioning, including sociodemographic characteristics, health status, and drug use factors, as defined in the Glossary of Terms at the end of this chapter.

Sociodemographic characteristics include gender, age, race/ethnicity, education, criminal justice involvement, living situation, and public assistance status. Research shows that these factors may differentially affect substance abuse patterns among priority groups. For example, studies have shown that women, in particular, are at higher risk for dependence and poorer outcomes than men.

Health status factors include lifetime mental health diagnosis, disability or veteran status, and past history of sexually transmitted diseases (STD). Assessing health status among alcohol and other drug (AOD) users is important, given that they suffer from a plethora of health problems (Stein, 1999). Nearly every bodily organ and system is affected by drug use. There are more deaths, illnesses, and disabilities due to drug problems than to any other preventable health condition (Levine & Brown, 2005).

Drug use factors that strongly influence the impact of drug use include the specific primary drug used, or "drug of choice," and injection drug use. Injection drug use is a dangerous practice often tied to increased risk of infection and transmission of infectious diseases and overdose.

KEY HIGHLIGHTS - PRIORITY GROUPS

SPECIAL POPULATIONS

Women

- Of the 216,781 treatment admissions in 2006-2007 in California, 36% were women 18 years or older. Of these, nearly 6% were pregnant, 54% had a minor child 17 years or younger, and 79% were of childbearing age (15 through 44 years).
- Forty-one percent of the admissions of women in general, and 57% of pregnant women's admissions, indicated methamphetamine as the primary drug of choice.
- A lifetime diagnosis of mental illness[18] was reported by nearly 30% of female admissions.

[16]The terms "abuse" and "dependence" will be used interchangeably, along with "addiction," as these terms have all been used to define substance use disorders by the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition - DSM-IV (American Psychiatric Association, 1994). Because the data collected by CalOMS does not provide a diagnosis, it is not possible to specify abuse versus dependence. However, from information collected in CalOMS, it is clear that a large majority of individuals in treatment would certainly meet criteria for dependence.

[17]Each priority group described in this chapter is defined using the CalOMS Treatment Data Dictionary. Please see the Glossary of Terms at the end of this chapter for key definitions as well as data tables for each priority group

[18] A lifetime diagnosis of mental illness was determined by a "yes" response to the question, "Has the client ever been diagnosed with a mental illness?"

Youth (17 and Younger)

- Of the 216,781 treatment admissions in California, 8.7% were youth (17 or younger)
- More than half (55.7%) of the youth admissions aged 12 to 17 were of Hispanic/Latino ethnic background.

Young Adults (18-24)

- Almost 16% of admissions were young adults (18–24 years old).

Older Adults (55 and over)

- Of treatment admissions in 2006–2007, 5.4% of admissions were older adults.
- Heroin/Other Opiates was reported as the most frequently used primary drug among older adults, followed by alcohol (38.1% and 32.9%, respectively).
- Injection drug use was reported by 35% of older adult admissions.

Admissions with a Lifetime Mental Illness

- Twenty-one percent of treatment admissions reported a lifetime mental illness diagnosis.
- Of treatment admissions in 2006–2007, 45% of admissions with a lifetime diagnosis of mental illness also had a disability.[19]

Admissions with Criminal Justice Involvement

- Fifty-five percent of treatment admissions reported criminal justice involvement. This is the first year in the history of the California Alcohol and Drug Program Administration (ADP) that over half the admissions were involved with the criminal justice system.
- Among admissions reporting involvement with the criminal justice system at admission, the majority were on probation (nearly 73%).

SPECIAL NEEDS GROUPS

Injectors

- Among the admissions entering treatment, nearly 20% were injection drug users.
- Injection drug use was reported by predominantly White admissions (more than half) or Hispanic/Latino admissions (about one-third).
- Most admissions reporting injection drug use were primary opiate users (71.6%).
- A lifetime mental illness diagnosis was common among injectors (24.8%).
- About 14% of pregnant female admissions reported primary injection drug use.

Homeless

- Among the 216,781 treatment admissions, about 19% were homeless and 42% were dependent on others for housing.
- Twenty-one percent of treatment admissions who were pregnant, substance abusing females were homeless, with similar rates among female admissions with minor children (19%).
- Homeless admissions were most frequently self-referred to treatment (40%), with 31% referred through the criminal justice system.
- A substantial proportion of homeless admissions reported injection drug use (23%).

Disabled

- Among the treatment admissions, nearly 17% reported a disability.

[19] Disability is determined by a "yes" response to the question, "Does the client have a disability?" The disabilities identified within CalOMS data definitions include visual, hearing, speech, mobility, mental, developmental, other disability (not AOD), and drug related.

- Roughly, 24% of admissions with a disability reported injection drug use.
- A substantial proportion (57%) of the admissions with a disability reported a lifetime diagnosis of mental illness.

Veterans

- Among the 216,781 treatment admissions, 4% had a veteran status.
- On average, veteran admissions were 46±10.7 years old.
- Most frequently, veteran admissions had a high school education (48%), with 38% having some college and/or graduate school.

SPECIAL POPULATIONS

There is no standard model or distinct paradigm that can definitively predict whether an individual will develop a substance abuse problem. However, researchers have examined characteristics and trends among individuals with substance use disorders in an effort to identify associated risk factors. With this knowledge, The National Institute on Drug Abuse (NIDA) through their Special Populations Office (SPO) has acknowledged the need to increase and improve the research efforts in preventing and treating substance abuse, particularly among women (including females with minor children and pregnant women), certain age groups (youth, young adults, and older adults), individuals involved with the criminal justice system, and individuals with co-occurring mental illness and substance use disorder. It is necessary to identify groups and individuals that may have higher risk or vulnerability to substance abuse in order to develop effective treatment interventions and preventative measures. In this chapter, a number of special population groups are identified and examined by sociodemographic, health status, and drug use factors.

WOMEN

There is a distinct gender difference in the substance use of men and women. In general, women advance more rapidly from use to regular use than do their male counterparts (Greenfield et al., 2007). Current literature on gender differences in substance abuse suggest that male-to-female ratios of prevalence estimates of drug use are narrowing in the United States, as the initiation of drug use is progressively taking place at similar rates among females and males, regardless of age (Zilberman et al., 2003).

Sociodemographic Factors

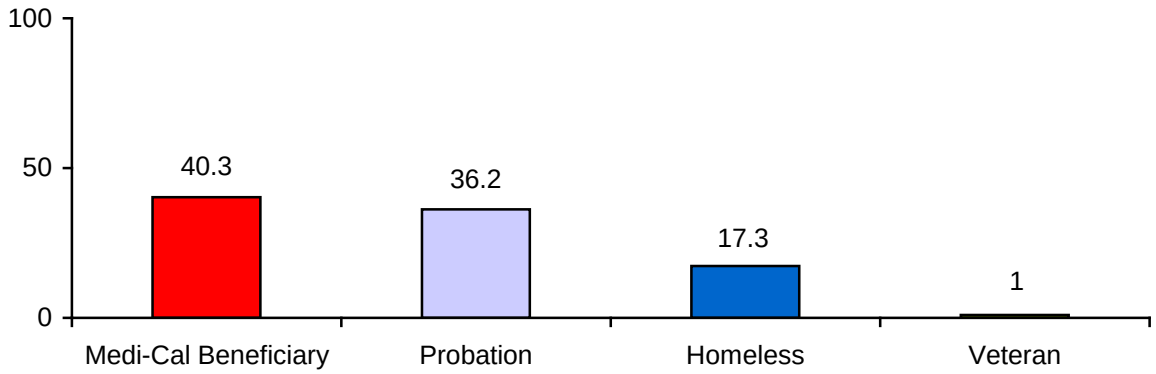
Of the 216,781 treatment admissions, approximately 36% were women aged 18 years or older; their average age was 34. The majority of these female admissions were women of childbearing age (15–44 years old). Female admissions were predominantly White (46.5%) or Hispanic/Latino (31%), followed by a smaller proportion of African Americans (15%). About 58% of the female admissions had a high school education. Close to half (47%) of the women entering treatment were involved with the criminal justice system; 36% were on probation. Nearly 6% of female admissions were under parole supervision. Nationally, there is evidence of an association between substance abuse and probation. In 2005, the proportion of male and female adults on probation that reported substance abuse or dependence was 39.7%, which was a considerably greater percentage than the proportion of adults who were abusing or dependent on substances but not on probation within the previous year (8.7%) (SAMHSA, 2008).

Although most of the female admissions were living as dependents or independently at admission (42% and 41%, respectively), close to 17% were homeless. Roughly, 40% of female admissions identified themselves as Medi-Cal beneficiaries, and approximately 10% were linked to a public assistance program.[20] Nationally, there were more Medicaid-paid admissions among women than among men (52% & 30%, respectively; SAMHSA, 2008). Very few women entering treatment were veterans (about 1%),

[20] Programs may include CalWorks, Parolee Services Network (PSN), or the Female Offender Treatment and Employment Program (FOTEP).

which is consistent with trends in veteran admissions reported at the national level (SAMHSA Treatment Episode Data - TEDS, 2004).

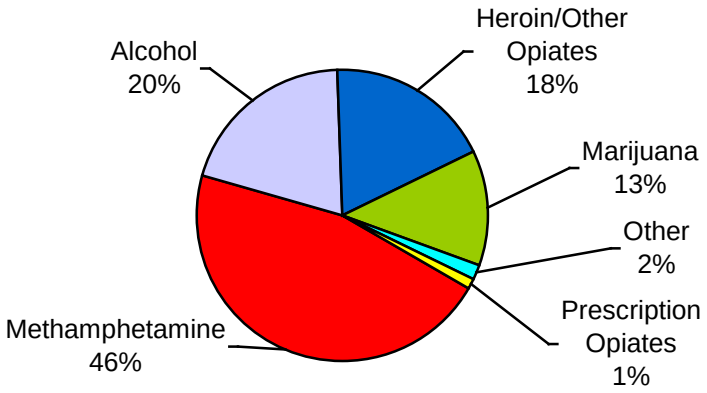
Figure 1: Factors among Women



Drug Use Factors

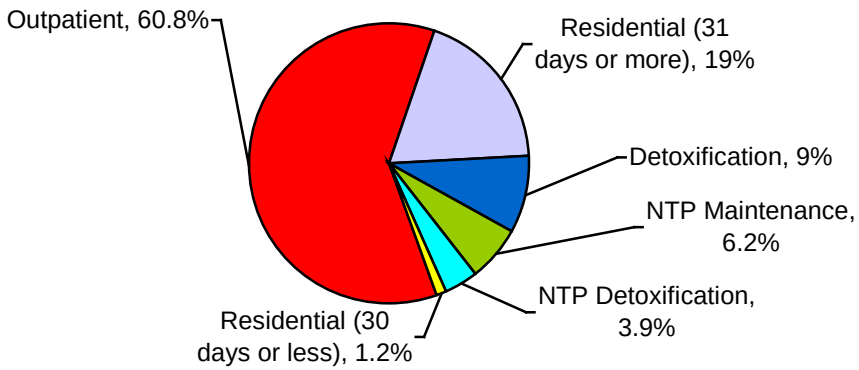
As Figure 4 shows, methamphetamine was the most commonly abused drug among women admissions (41.5%), with alcohol reported as the second most commonly used substance (18%), followed by heroin/other opiates (16%), marijuana (11.5%) and cocaine/crack (10%). Although only 1% of females reported prescription opiates as their primary drug, the national data indicate concerning trends among women (NIDA, 2006). The proportion of female admissions reporting injection drug use at admission was 18%.

Figure 2: Women by Primary Substance Use



Outpatient program admissions in the California treatment system during 2006–2007 accounted for roughly 61% of the population of women in treatment. Most of the remaining women were in either residential treatment of 31 days or more, narcotic treatment programs (NTP), or detoxification programs. Nearly 40% of female admissions were referred through the criminal justice system, with almost half of those referrals coming through the Substance Abuse and Crime Prevention Act of 2000 (SACPA). At admission, other common sources of referral reported by women were self-referral and “other” sources of referral (34% and 26%, respectively).

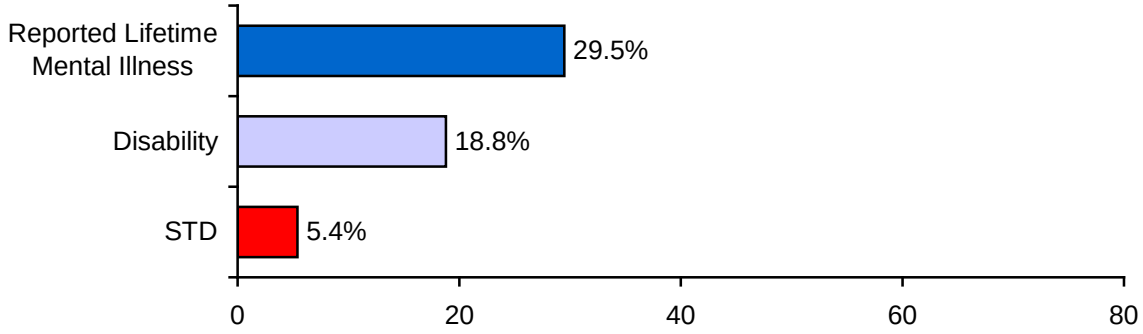
Figure 3: Women by Treatment Service Type/Modality



Health Status Factors

Research indicates that when women drug users enter drug treatment, it is often because their physical or mental health symptoms have become severe and disabling, as compared to men, who tend to experience more deviant/criminal related issues (Comfort et al., 2003; Prendergast et al., 1995). A lifetime diagnosis of mental illness was found in nearly 30% of female client admissions. Serious mental health problems, such as severe depression and other psychopathologies are common among illicit drug-abusing populations (Brooner et al., 1997), especially women (Grella & Joshi, 1999). At admission, nearly 19% of women were disabled.[21] Roughly, 5% of women at admission reported having a sexually transmitted disease (STD).

Figure 4: Women & Health Status



PREGNANT WOMEN

Estimates based on national data are that 11% of all newborns were prenatally exposed to alcohol or drugs each year (SAMHSA, 2003). Results indicate that close to 6% of women treatment admissions were pregnant, notably more than the national rate of 3.9% (NSDUH, 2005). Substance-abusing pregnant women face persistent barriers when seeking drug treatment due to the risk of losing their children or criminal action, stigma associated with drug use, and difficulty accessing care. Such women may also delay seeking prenatal care and medical care for similar reasons (Grella, 1997). Because drug abuse among pregnant women jeopardizes the health of their fetuses, including increasing the risk of low

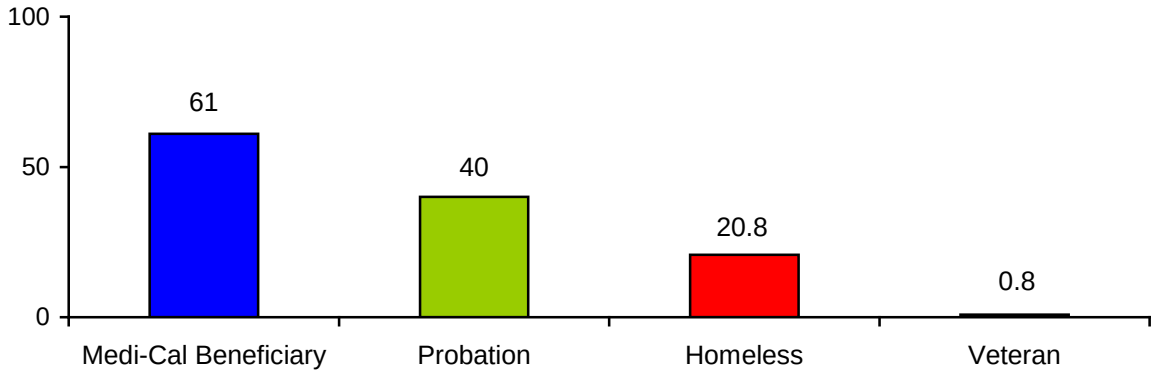
[21] Disabilities may include vision, hearing, speech, and "other" (not AOD related) disabilities, as well as mental and developmental disabilities.

birth-weight babies and perinatal abnormalities (Daley et al., 2005), as well as affecting later child development (Amaro & Zuckerman, 1990), stopping substance use and facilitating treatment among pregnant women is especially important.

Sociodemographic Factors

The mean age of pregnant women's admissions was 27 years old, with most being White or Hispanic/Latina (41% & 38%, respectively), and relatively few being African American (13%). Approximately 51% of these admissions reported having less than a high school education (mean education = 11.2 years). About half (51%) of the pregnant female admissions were involved with the criminal justice system, with 40% being on probation. Fewer than 5% were under parole supervision. In terms of living situation, 21% of these pregnant admissions were homeless, 44.4% were dependent on others for housing, and 35% lived independently. Roughly, 61% of pregnant admissions were Medi-Cal beneficiaries, and 17% were linked to a public assistance program. Very few of these admissions (<1%) were veterans.

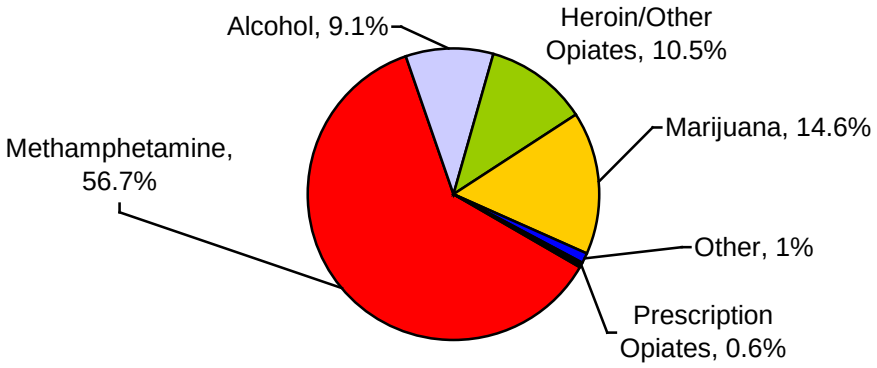
Figure 5: Factors among Pregnant Women



Drug Use Factors

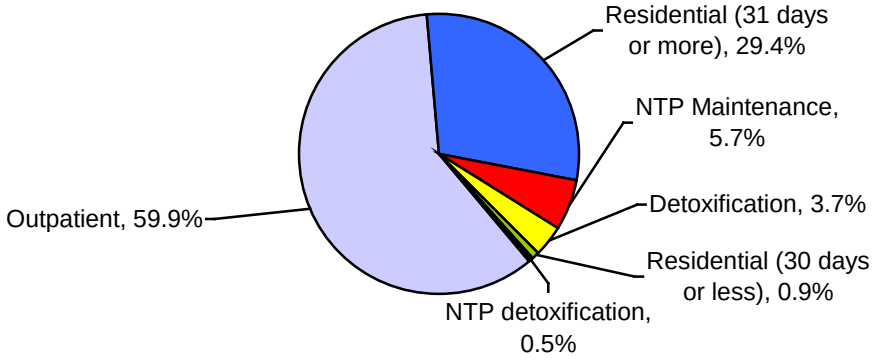
The most common primary drug reported by pregnant women at admission was methamphetamine, accounting for 57% of admissions (Figure 8). The high proportion of pregnant female admissions using methamphetamine is alarming. Use of illicit drugs and alcohol during pregnancy not only increases the risk of birth defects, but children born to methamphetamine-addicted mothers are often incapable of bonding, are asocial, and suffer from tremors (Wermuth, 2000). Marijuana was the second most commonly reported primary drug (14.6%) among pregnant women, followed by heroin/other opiates, alcohol, and cocaine/crack. About 14% of pregnant admissions reported primary injection drug use at admission.

Figure 6: Primary Substance Use by Pregnant Women



Approximately 60% of pregnant female admissions were enrolled in outpatient treatment. The admitted pregnant women who were not in outpatient programs were primarily treated in residential treatment programs (31 days or more; 29%). Forty-three percent of pregnant women's admissions were referrals from the criminal justice system, with most coming through SACPA. Other sources of referral for pregnant women included self-referral (29%) or other referral sources (27%).

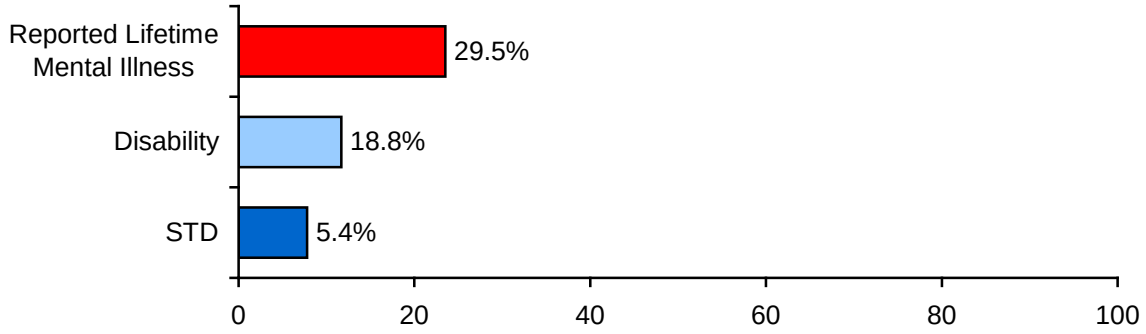
Figure 7: Pregnant Women by Treatment Service Type/Modality



Health Status Factors

Factors affecting the health status of pregnant admissions are important to consider, given the potential harmful affects on the unborn fetus. Approximately 23.5% of these admissions reported having a lifetime diagnosis of mental illness, 12% indicated having a disability, and 8% had a positive STD status.

Figure 8: Pregnant Women & Health Status



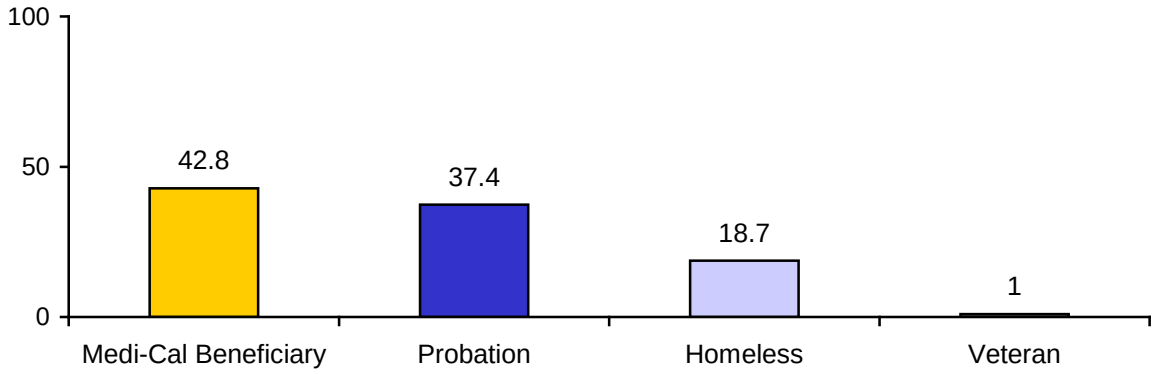
WOMEN WITH MINOR CHILDREN

Women with minor children (ages 17 and younger) are an important population to consider given the issues that may affect their treatment participation (i.e., adherence). These women are more likely not to seek treatment or may drop out early due to the pervasive fear of not being able to take care of or keep their children, as well as fear of punishment from authorities, and the negative stigma attached to drug use by the larger community (Grella & Joshi, 1999). In addition, special efforts are warranted for keeping women with minor children in treatment given the research that indicates minor children are at high risk for abuse and neglect as a result of the drug preoccupation, erratic behavior, and psychiatric instability of their substance-abusing parents (Amaro & Zuckerman, 1990). Children living in a home with substance abuse may also have a greater risk of physical health problems, mental illness, and learning problems. Leaders in the field of substance abuse treatment have recognized the need for specialized programming to fit women's needs. For example, the inability to access affordable child care can create a barrier to treatment for women with minor children. Findings from the Alcohol and Drug Services Study estimated that only 13% of substance abuse treatment facilities offered child care services.

Sociodemographic Factors

Forty percent of the women-with-minor-children admissions were 35 to 44 years old, 15,8% were young adults (18–24), and 10%, 45 to 54. Very few (<1%) of these female admissions were 55 or older. The racial breakdown of female admissions with minor children was similar to the general women admissions—most were White or Hispanic/Latino (46% and 33% respectively), and only 13% were African American (13%). Fifty-nine percent of the women clients with minor children had a high school or greater education, completing an average of 11.5 years of education. Approximately 50% of these women reported criminal justice involvement, 37% were on probation, and close to 7% were under parole supervision. Most reported living independently (45%), while 19% were homeless. About 43% of women with minor children reported a Medi-Cal beneficiary status and approximately 16% were linked to a public assistance program. Only 1% of these women reported a veteran status at admission.

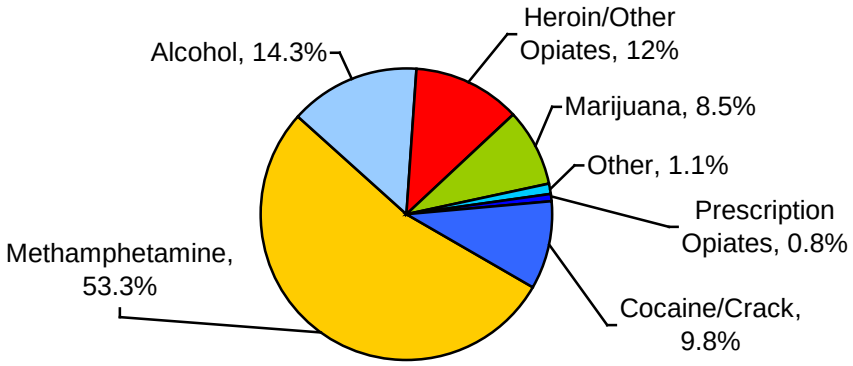
Figure 9: Factors among Women with Minor Children



Drug Use Factors

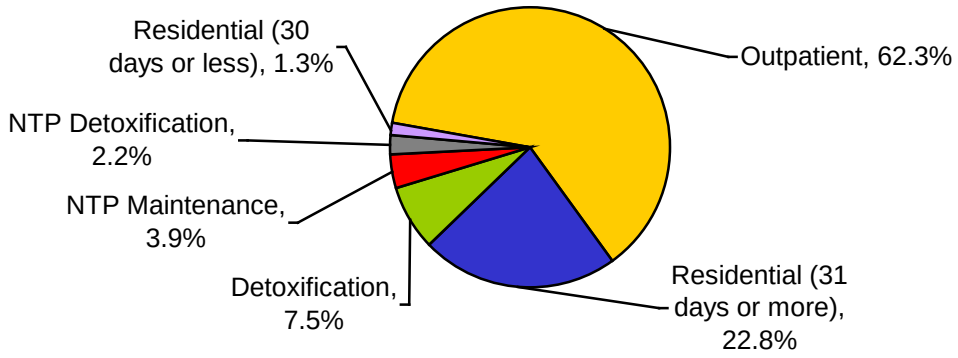
Methamphetamine was the most commonly reported primary drug among female admissions with minor children (53%), followed by alcohol (14%), heroin/other opiates (12%), and cocaine/crack (10%). Few of these female admissions reported marijuana (9%) as their primary drug. Injection drug use was reported by nearly 16% of these women.

Figure 10: Women with Minor Children by Primary Substance Use



Within the California treatment admissions population, 22% were women with minor children (60% of women's admissions). Most admissions for women with minor children in California were in outpatient settings (62%); 23% were in residential treatment (31 days or more). Relatively few women with minor children were admitted to NTP maintenance (4%), detoxification (7.5%), or short-term residential programs of 30 days or less (1.3%). The source of referral to treatment for most of these women was the criminal justice system (44%), most of which were via SAPCA, followed by self-referral (30%) and "other sources" (26%).

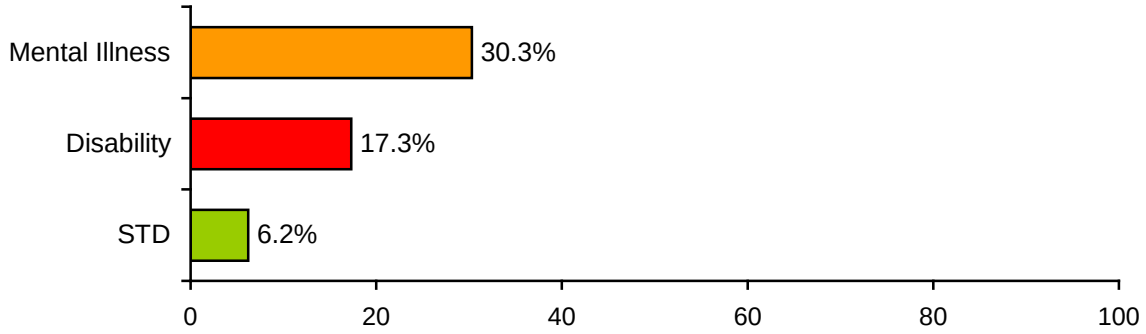
Figure 11: Women with Minor Children by Treatment Service Type/Modality



Health Status Factors

Of the women admissions with minor children, 30% reported a lifetime diagnosis of mental illness, 17% indicated having a disability of some sort, and 6% reported a positive STD status.

Figure 12: Women with Minor Children & Health Status



YOUTH (AGE 12–17)

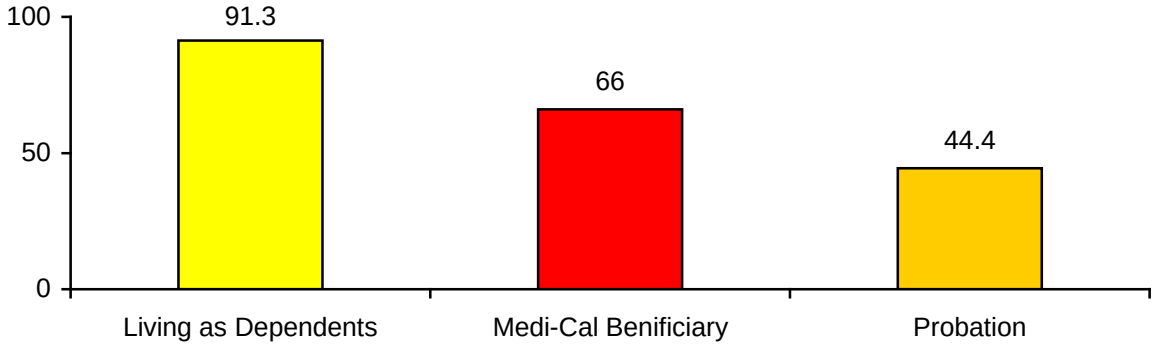
National statistics collected from the Treatment Episode Data Sets (TEDS) reveal that 8.5% of admissions to publicly funded substance abuse treatment were youth 12 to 17 years old. While national surveys indicate a downward trend in illicit drug use among youth over the last decade, experimentation with drugs is still very common. Based on the NSDUH, many of the youth who were in need of treatment in the previous year were not likely to perceive a need for treatment (2006). Major risk periods for developing a substance abuse problem have been linked to periods of transition among youth groups. For instance, significant developmental milestones occur when youth advance through school—from to middle to high school and from high school to college. New experiences associated with these transitions, both educational and social, can lead to increased engagement in risk-taking behaviors, including alcohol and drug use.

Sociodemographic Factors

The average age of youth admissions was 16 years. Of this admission group, 35% were female. More than half of the youth entering treatment were Hispanic/Latino (56%), a substantially greater proportion than that found among national treatment admissions (17%; SAMHSA, 2005). The remaining admissions were predominantly White and African American (22% and 14%, respectively). Ninth grade was the mean grade completed among the youth admissions, which was consistent with national data. About half of the

youth admissions were involved with the criminal justice system, with the majority (44%) on probation, and very few under parole supervision (<1%). More than 90% of youth admissions were living as dependents at admission. About 8% lived independently and fewer than 1% of the youth admissions were homeless. Approximately two-thirds of this population were Medi-Cal beneficiaries.

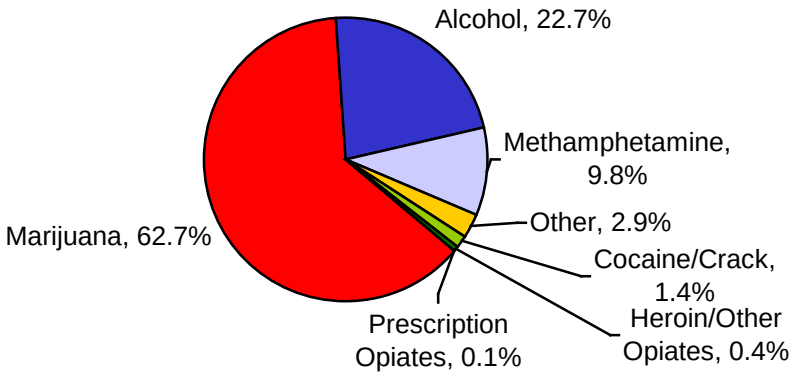
Figure 13: Sociodemographic Factors among Youth



Drug Use Factors

Most youth admissions reported marijuana as their primary drug (63%), followed by alcohol (23%). Nearly 10% of youth admissions reported methamphetamine as their primary drug. Very few youth reported injection drug use (<1%). The rate of other opiate use (classified as prescription) was also less than 1% among admissions. The misuse of prescription drugs among youth, however, warrants special consideration given the recent multiple reports on the topic at the national level. These reports suggest that the non-medical use of prescription drugs is increasing at a substantial rate among youth 12 to 17, noting that young females in particular are more likely than young males to misuse prescription drugs. The prescription drugs most commonly abused by youth include opiate painkillers (e.g., OxyContin and Vicodin), depressants (e.g., Xanax, Ativan, Valium), and stimulants (e.g., Adderall, Concerta, Ritalin). According to the NSDUH (2006), more than 2.1 million youth (12 to 17) abused prescription drugs. The California Student Survey (2005–2006) indicates that 15% of 11th graders had used prescription pain killers during the previous year. TEDS admission data show that the number of youth 12 to 17 entering treatment in California for prescription drugs has increased by more than 300% (TEDS, 2006) from 154 admissions in 1995 to 1,170 admissions in 2005.

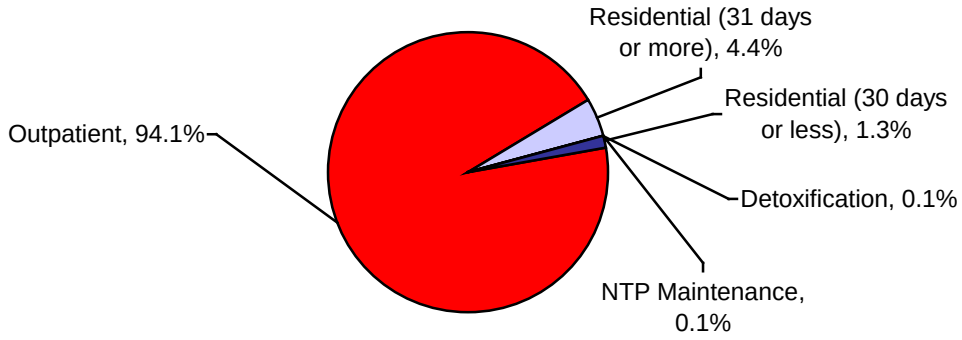
Figure 14: Youth by Primary Substance Use



Most youth entering treatment in California were in outpatient programs (94%). Only 5% were in residential treatment programs (31 days or more). The principal source of referral to treatment for youth

admissions was “other” (47%). Criminal justice referrals (non-SACPA related) constituted 30% of the referrals, with self-referral accounting for 19%.

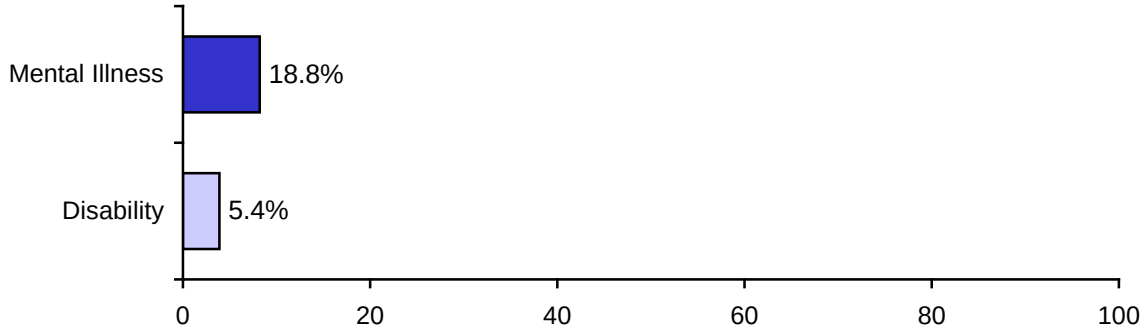
Figure 15: Youth by Treatment Service Type/Modality



Health Status Factors

Approximately 8% of youth entering treatment reported a lifetime diagnosis of mental illness and 16% reported a disability of some sort. Rates of STDs were minimal among these youth (<1%).

Figure 16: Youth & Health Status



YOUNG ADULTS (AGE 18–24)

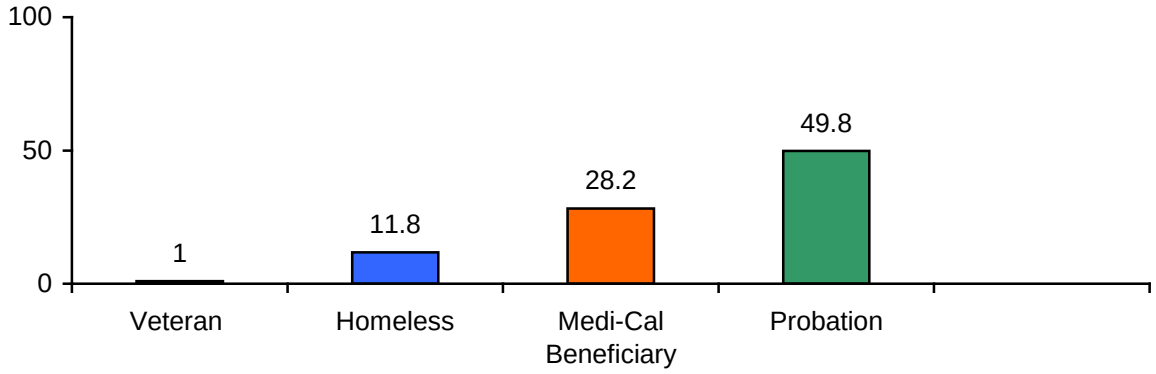
Young adults, individuals aged 18 to 24, are moving out of adolescence into adulthood, a heightened developmental period for risky behaviors, given the economic and social challenges they face. According to national treatment data (TEDS), young adults were more likely to receive treatment than youth aged 12 to 17, as demonstrated by the 13% difference between the two groups’ admission rates.

Sociodemographic Factors

The average age of young adults entering treatment was 21 years. This admission group was 39% female. In terms of ethnic background, most young adult admissions were either White (42%) or Hispanic/Latino (41%), followed by African American (9%), “Other” ethnicities (4%), Asian/Pacific Islander (3%), and American Indian/Alaska Native (1%). Half of this admission population had less than a high school education (49%); the average number of school years completed was 11.2. More than half of these young adults were involved with the criminal justice system prior to admission (61.5%); 50% were on probation. About 5.6% were under parole supervision. Approximately 54% of the young adult admissions were living as dependents, one-third reported that they lived independently, and nearly 12%

were homeless. Twenty-eight percent of this population reported a Medi-Cal beneficiary status and only 6% were linked to another public assistance program. Very few young adults reported having a veteran status (close to 1%) at admission.

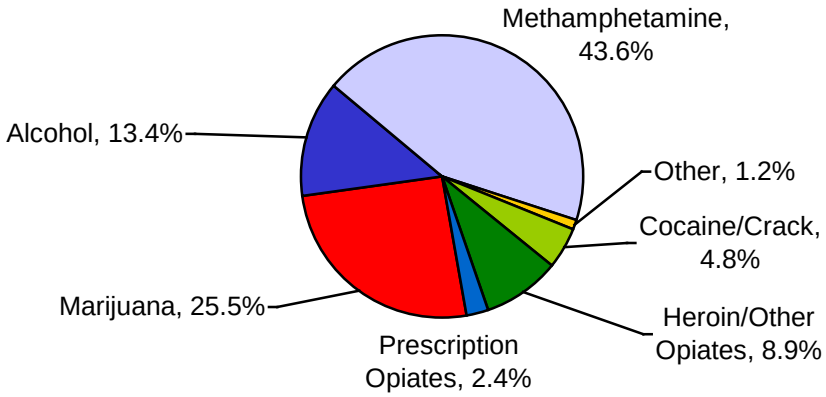
17: Sociodemographic Factors among Young Adults



Drug Use Factors

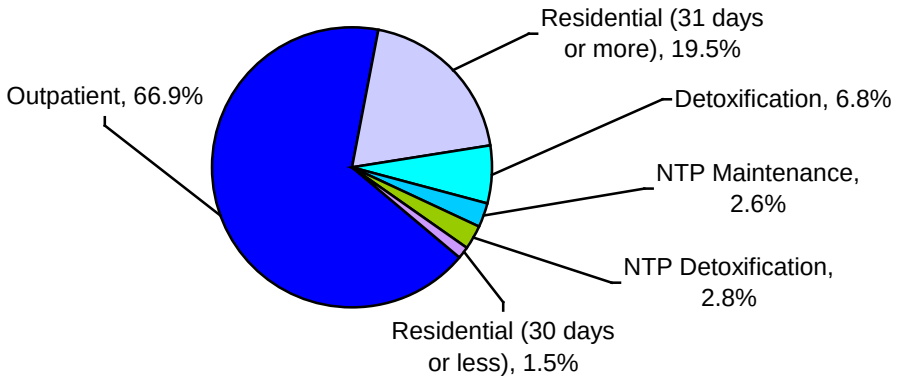
Methamphetamine was the most commonly reported primary drug among young adult admissions (44%), followed by marijuana (26%). Primary admissions for alcohol were reported more often than admissions for heroin/other opiates (13% and 9% respectively). Cocaine/crack was the primary drug for fewer than 5% of young adult admissions. Fewer than 3% of young adults reported prescription opiates as their primary drug of choice. Approximately 10% of these young admissions indicated injection drug use. Even though the percentage of admissions who reported prescription drugs as their primary drug is small, along with the youth group (12-17), young adults (18-24) represent one the fastest growing segments of the population abusing prescription drugs in the United States. Nationally, 14.5% of 18 to 25 year olds misused prescription drugs.

Figure 18: Young Adults by Primary Substance Use



In California, 67% of young adult admissions (ages 18–24) were admitted to outpatient programs. Long-term residential treatment of 31 days or more was the second most common form of treatment (19.5%). Admissions to detoxification programs accounted for 7%. Fewer than 5% of admissions were to NTP programs. The criminal justice system was the primary source of treatment referral for young adult admissions (54%); nearly 30% of total young adult admissions were from non-SACPA sources and 25% were from SACPA. Self-referral to treatment was reported by 26% of the young adult admissions, with the remaining 20% indicating “other” sources of referral.

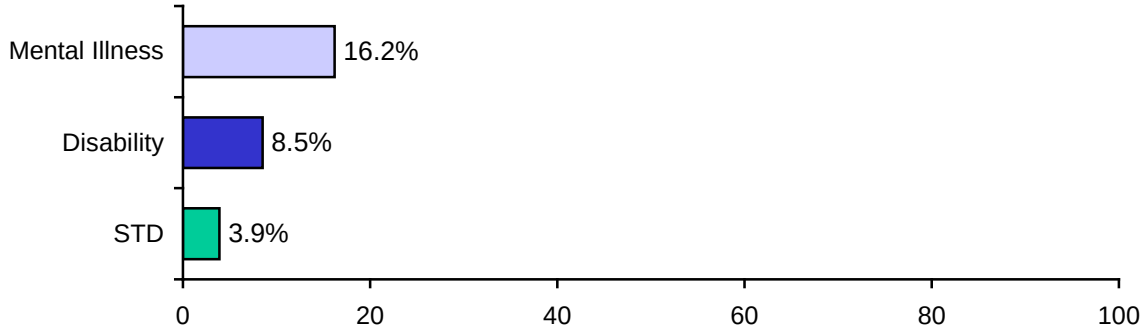
Figure 19: Young Adults by Treatment Service Type/Modality



Health Status Factors

Approximately 16% of young adult admissions indicated having received a diagnosis of mental illness at some point in their lives. About 8.5% indicated having a disability of some sort, and a small proportion (about 4%) reported a positive STD status.

Figure 20: Young Adults & Health Status



OLDER ADULTS (55 AND OLDER)

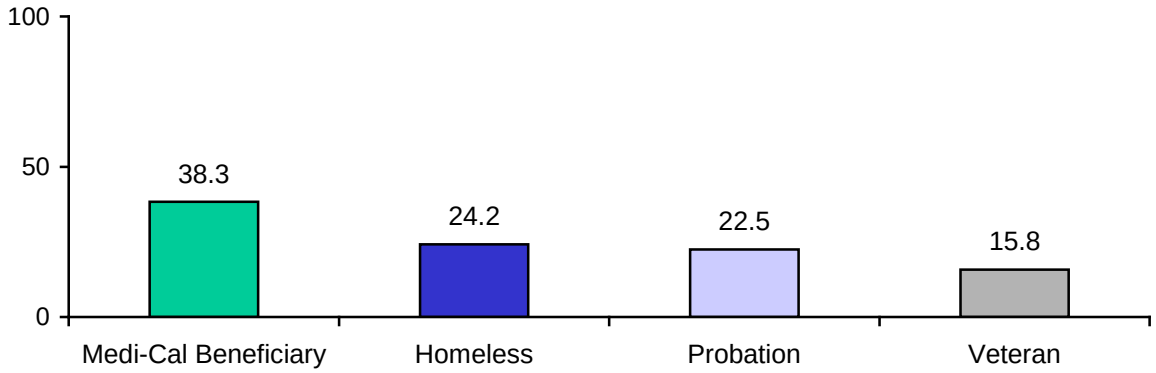
As the generation of baby boomers (individuals born between 1946 and 1964) grow older, the proportion of the U.S. population that is 55 and older will substantially increase. According to a 2005 Drug and Alcohol Services Information System (DASIS) report, between 1995 and 2002, there was a 32% increase in treatment admissions for older adults, which was greater than the 12% increase of the total treatment population during the same period. Although alcohol has been the most common drug of choice among older adults, primary illicit drug admissions have increased considerably for this group in recent years (106% increase in male admissions and 119% increase in female admissions; SAMHSA, 2006). Prescription drug abuse is also a growing issue among the population of older adults, especially since new technology has led to more drugs being prescribed and used to treat health problems in this older population.

Sociodemographic Factors

Of the admissions over 55 years old, 23% were female. Older adult clients were predominantly White (47%); African Americans constituted 27% of these admissions and Hispanic/Latinos 20%. On average, adults 55 and older completed 12 years of school, and about 31% reported some college and/or graduate school training. Only 26% did not complete high school. Approximately 33% of older adults were active

in the criminal justice system; 23% were on probation. About 8% of older adults were under parole supervision. At admission, 48.5% of older adults were living independently, 27% were in a dependent living situation, and 24% were homeless. About 38% of older adults received Medi-Cal benefits, though less that 3% were linked to other public aid programs. Many older adult clients reported having a veteran status (16%).

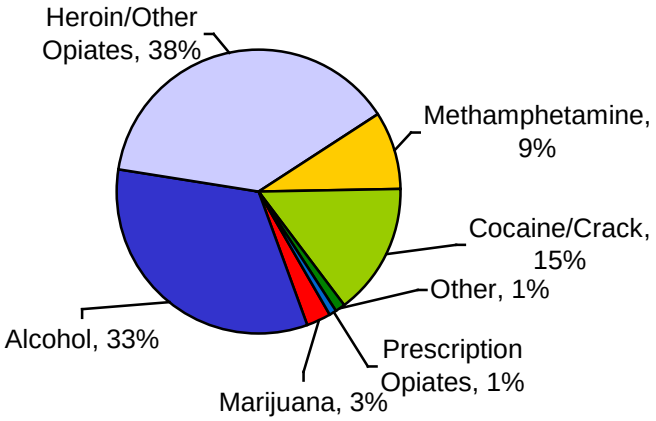
Figure 21: Sociodemographic Factors among Older Adults



Drug Use Factors

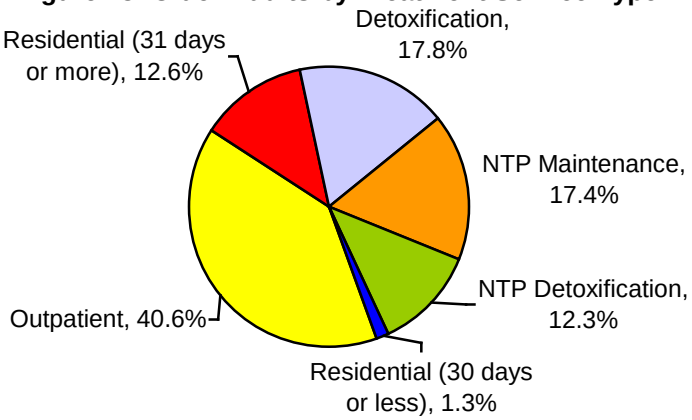
Heroin/other opiates was reported as the top primary drug among older adult admissions (more often than alcohol at 38% and 33%, respectively). In terms of stimulants, 15% of older admissions reported cocaine/crack and 9% reported methamphetamine as their primary drug. Few (3%) older adult admissions reported marijuana as their primary drug at treatment admission. Prescription opiate use accounted for less than 1% among older adult admissions. Injection drug use was reported by 35% of older adult admissions.

Figure 22: Older Adults by Primary Substance Use



During the 2006-2007 fiscal year, outpatient treatment programs were the most common type of treatment service used by older adult admissions (41%) according to CalOMS admission data. About the same proportion (17.8% and 17.4%, respectively) of admissions enrolled into non-NTP detoxification and NTP maintenance programs. Thirteen percent of these older admissions entered residential programs (31 days or more). Most often, older adults came to treatment by self-referral (52%); "other" source was reported by 22%. Referrals through the criminal justice system accounted for the remaining 26%; 16% of total admissions of older adults were through SACPA.

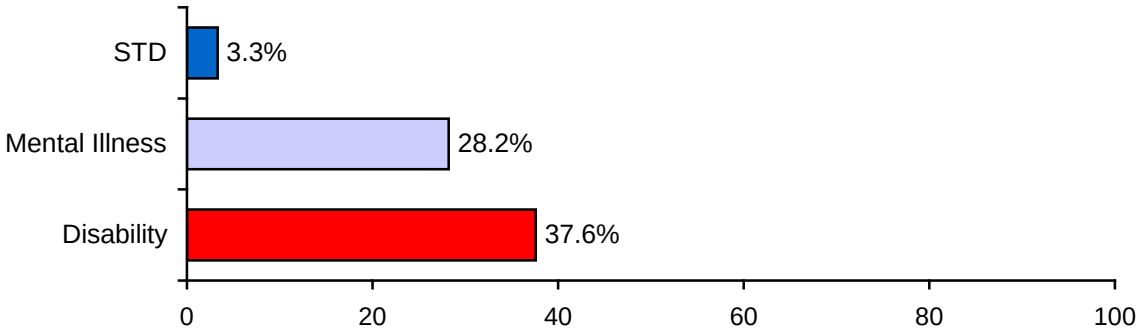
Figure 23: Older Adults by Treatment Service Type



Health Status Factors

A lifetime diagnosis of mental illness was reported by 28% of older adult admissions. Research indicates that depression is the most frequent mental disorder among the elderly, often occurring in 37% of older primary care patients and 22% of nursing homes' elderly residents. One in five older adults has a significant mental disorder, with 16% having a primary psychiatric illness and 3% having dementia, which complicates psychiatric symptoms. Depression affects 3%-7% of older adults and anxiety affects 11% (SAMHSA, 2006). Nearly 38% of older adult admissions reported a disability at admission, and 3% reported a positive STD status.

Figure 24: Older Adults & Health Status



ADMISSIONS WITH A LIFETIME MENTAL ILLNESS DIAGNOSIS

Using CalOMS data, approximately 21.3% of client admissions had reported a lifetime diagnosis of a mental illness. This is not surprising given that serious mental health problems are common among illicit drug-abusing populations (Brooner et al., 1997). According to the National Comorbidity Survey (NCS-R), many adults (18 and older) with substance use disorders also have at least one psychiatric disorder (Kessler et al., 2005a; Kessler et al., 2005b). Past literature supports that between 55% and 69% of individuals with a substance use disorder have a co-occurring mental heath disorder (see Watkins et al., 2004 for review). In comparison, the prevalence estimates of general U.S. population mental disorders are found to be between 22% and 23% (Epidemiologic Catchment Area, 1990). A subpopulation of 5.4%

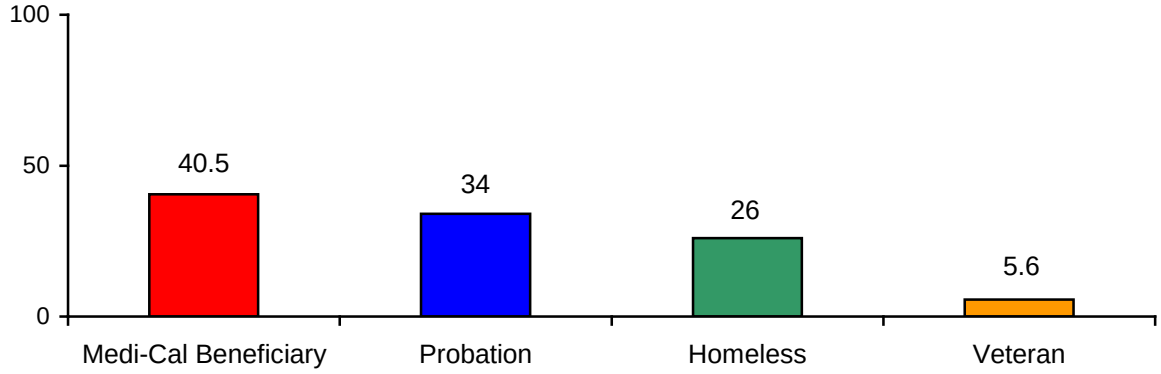
of adults is considered to have a “serious” mental illness (SMI) (Kessler et al., 1996). Serious mental illness is defined by federal regulations as being mental disorders that interfere with some area of social functioning. About half of those with SMI (or 2.6% of all adults) were identified as being even more seriously affected, that is, by having “severe and persistent” mental illness (SPMI; NAMHC, 1993; Kessler et al., 1996). This category includes schizophrenia, bipolar disorder, other severe forms of depression, panic disorder, and obsessive-compulsive disorder. Among those most severely disabled are the approximately 0.5% of the population who receive disability benefits for mental health-related reasons from the Social Security Administration (NAMHC, 1993).

Participants with a mental illness diagnosis and substance abuse problem (co-occurring disorder) present challenges in treatment, including noncompliance (Tsuang, Fong, & Ho, 2003), an increased risk of homelessness, and greater criminal justice system involvement (Schoppelrey, 2002). Research indicates, however, that individuals with co-occurring disorders in extensive substance abuse treatment show improvement comparable to those without co-occurring disorders (Gonzalez et al., 2002). Based on previous work done by the SACPA evaluation, between 55% and 69% of individuals diagnosed with an alcohol or drug use disorder have also been diagnosed with a co-occurring mental health disorder.

Sociodemographic Factors

The average age of admissions with a lifetime mental illness diagnosis was 38 years. Exactly half of these admissions were female. Slightly more than half of this population was White (54%), with Hispanic/Latino and African Americans accounting for the remaining admissions (21% and 17%, respectively). Very few admissions with a lifetime mental illness diagnosis were Asian/Pacific Islander (1.5%) or Indian/Alaska Native (2%). Among those admissions with a lifetime mental illness diagnosis, the average years of education completed was 11.8; about 39% did not have a high school diploma. Nearly 48% of the admissions were involved with the criminal justice system; 34% were on probation and close to 10% were under parole supervision. Thirty-seven percent of these admissions reported a dependent living situation and 26% were homeless. About 40% of this population received Medi-Cal benefits and 7% were linked to a public assistance program of some sort. Nearly 6% of admissions with a lifetime diagnosis of mental illness were veterans.

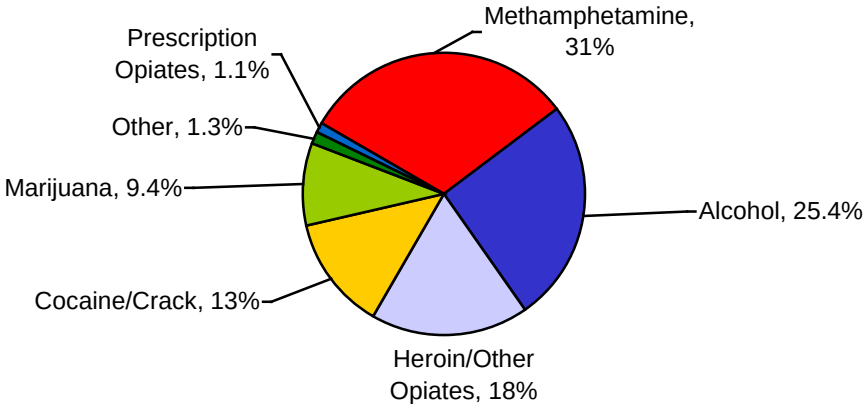
Figure 25: Sociodemographic Factors among Admissions with a Lifetime Diagnosis of Mental Illness



Drug Use Factors

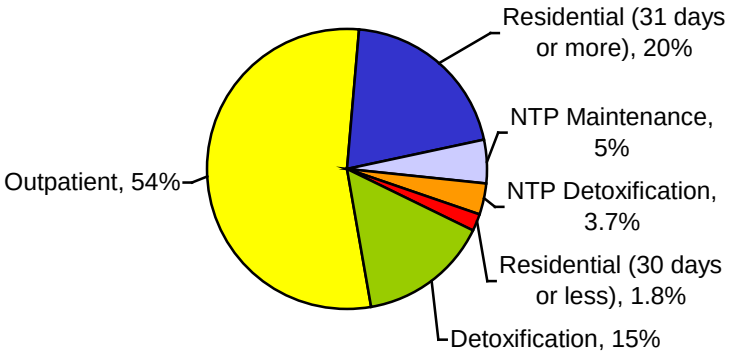
Methamphetamine was the most common drug of choice reported among admissions with a lifetime mental illness diagnosis (31%). Primary alcohol abuse accounted for 25% of admissions among this population, followed by heroin/other opiates (18%), cocaine/crack (13%), and marijuana (9%). Only 1% of these admissions reported a primary problem with prescription opiates. Injection drug use was high among this population at 23%.

Figure 26: Mental Illness Diagnosis by Primary Substance Use



Approximately 21% of treatment admissions reported a lifetime diagnosis of mental illness, most of which entered outpatient treatment (54%). Other treatment settings that admissions with a lifetime mental illness diagnosis entered included: long-term residential treatment (20%) and detoxification (15%). Admission to NTP maintenance and detoxification programs were less at around 5% and 4%, respectively. The main sources of referral to treatment reported by this population were self-referral (40%), followed by referrals from the criminal justice system (35%); 18% of the total referrals for this population were from SACPA.

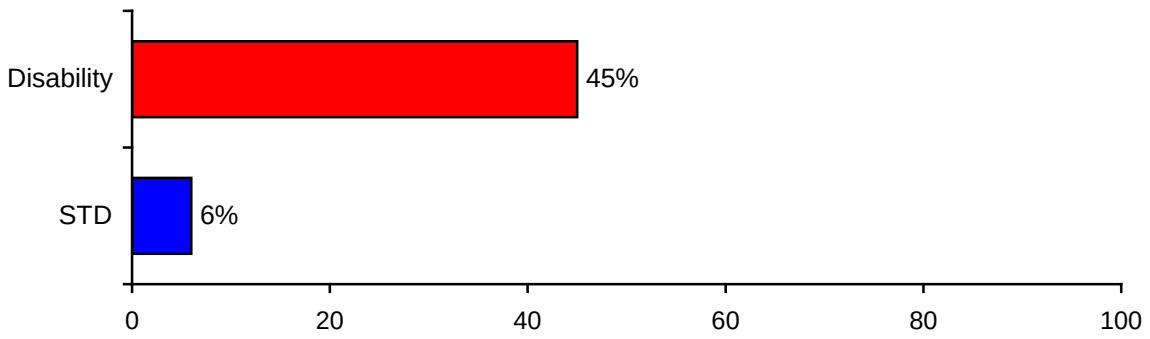
Figure 27: Mental Illness Diagnosis by Treatment Service Type/Modality



Health Status Factors

Almost 45% of admissions with a lifetime diagnosis of mental illness also reported having a physical disability. A positive STD status was reported by 6% of this population.

Figure 28: Mental Illness Diagnosis & Health Status



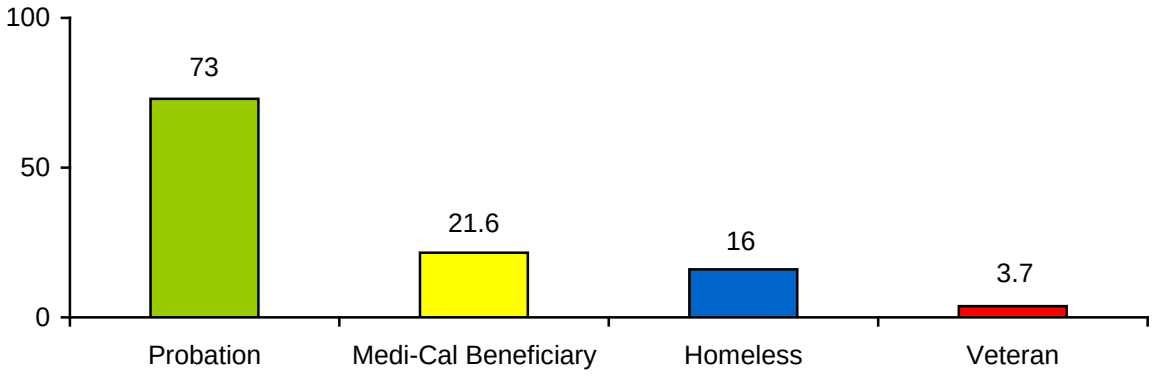
ADMISSIONS WITH CRIMINAL JUSTICE INVOLVEMENT

An overwhelming number of admissions involved with the criminal justice system have illicit drug-related problems and tend to represent highly severe users (Anglin & Hser, 2002). A survey of inmates in state and federal correctional facilities in 1997 conducted by the Bureau of Justice found substantially higher rates of illicit drug abuse among federal and state prisoners as compared to rates from the national household population (National Institute of Justice, 2003). Reports from the Office of National Drug Control Policy (ONDCP) indicate that drug users are more likely to commit a crime compared to non-drug users. Arrest data has also confirmed that individuals are frequently under the influence of a substance at the time of arrest (ONDCP, 2000).

Sociodemographic Factors

The average age of admissions with criminal justice involvement was 34. A third of this admission group was female (31%). The racial/ethnic background of these admissions was mostly White or Hispanic/Latino (43% and 35%, respectively), with the remaining being African American (14%). On average, the number of years of education these clients completed was 11.4 years, and about 42% had less than a high school education. Nearly 73% were on probation and 19% were under parole supervision. At admission, 46% of the criminal justice involved admissions reported living as dependents, whereas 16% were homeless. About 22% of this population received Medi-Cal benefits and even fewer (7%) were linked to a public assistance program. Less than 4% of criminally involved clients were veterans.

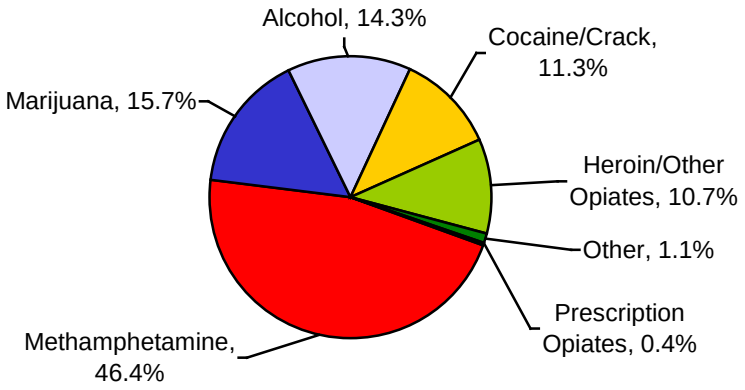
Figure 29: Sociodemographic Factors among Criminal Justice Admissions



Drug Use Factors

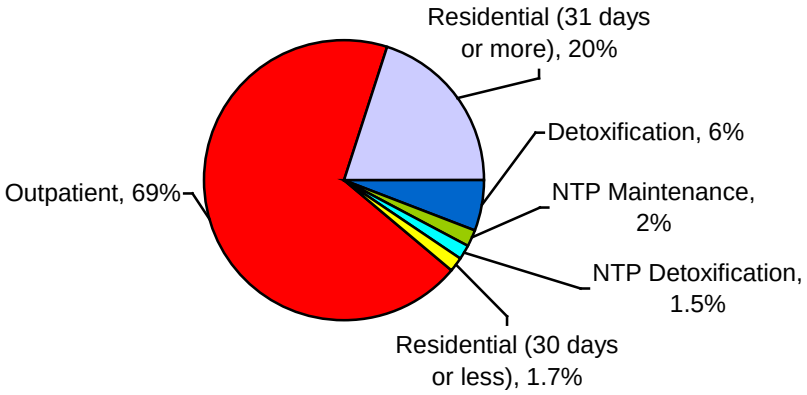
Methamphetamine was the drug of choice for 46% of admissions with criminal justice involvement. Primary admissions for marijuana and alcohol were almost equally represented among criminal justice admissions (16% and 14%, respectively). Primary admissions for heroin/other opiates and cocaine/crack among these admissions also had similar proportions (about 11% each). Injection use was reported among 16% of the criminal justice admissions.

Figure 30: Criminal Justice Admissions by Primary Substance Use



Of the treatment admissions in 2006–2007, nearly 55% were involved with the criminal justice system. Outpatient treatment was by far the most common service type for the criminal justice involved admissions (70%). About 20% entered residential treatment (31 days or more), and fewer than 6% were admitted to non-NTP detoxification programs or NTP (2%). Given that this is a criminal justice admission population, most were referred to treatment from the criminal justice system (74%), with the majority of these from SACPA (43% of the total criminal justice admissions). Other non-SACPA criminal justice system referrals accounted for 31% of admissions. Less than 15% were self-referrals and about 12% were from "other" sources of referral.

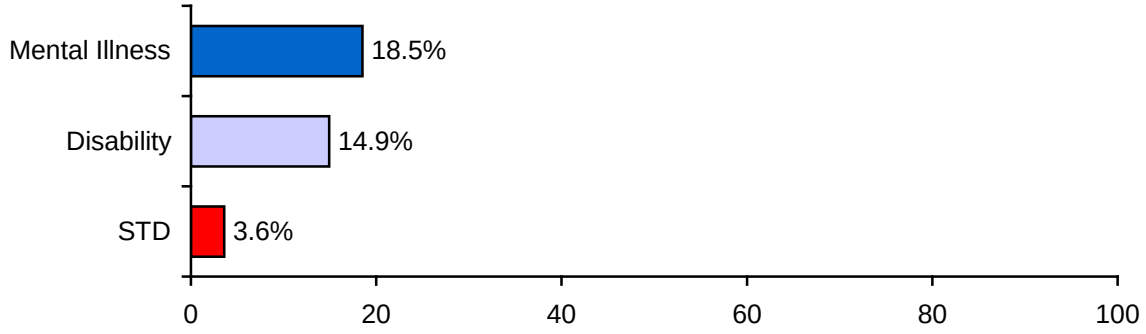
Figure 31: Criminal Justice Population by Treatment Service Type/Modality



Health Status Factors

Almost 19% of criminally involved admissions had a lifetime diagnosis of mental illness, 15% reported a disability, and a few had a positive STD status (4%).

Figure 32: Criminal Justice Population & Health Status



SPECIAL NEEDS GROUPS

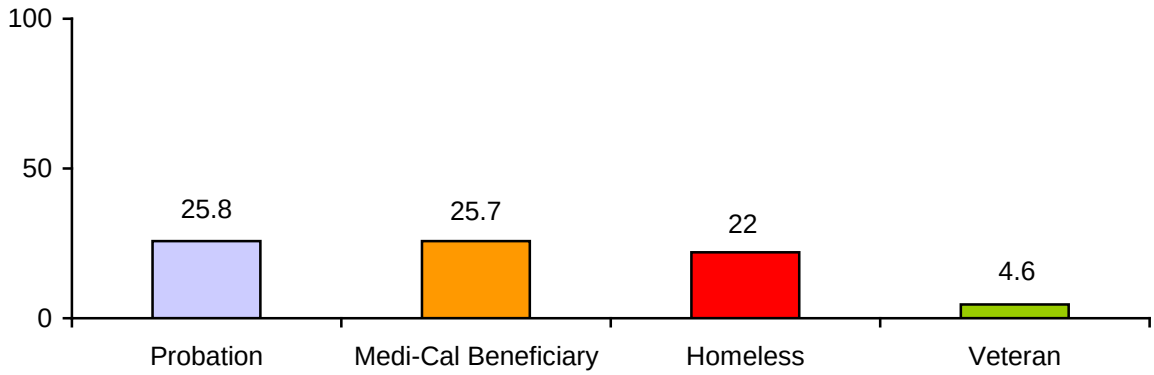
INJECTION DRUG USERS

Injection drug use significantly increases the risk of infection and transmission of diseases, including the human immunodeficiency virus (HIV), other sexually transmitted diseases, and hepatitis A, B, and C viruses. It is estimated that one-third of new HIV infections in 2001 were attributable to injection drug use and that prevalence rates of hepatitis B and C viruses are 77% and 66% among injection drug users (Hagan & Des Jarlais, 2000). Additionally, overdose, endocarditis, severe bacterial infections, and skin abscesses are detrimental heath conditions associated with injection.

Sociodemographic Factors

The mean age of admissions who injected was 40. Injection drug user admissions were 34% female. Over half (53%) of the injection drug user admissions were White, 32% were Hispanic/Latino, and relatively few were African Americans (9%). The highest education years completed, on average, among admissions of injection drug users was 11.5, and about 37% of these admissions reported having less than a high school education. Of the injection drug user admissions, 44% were involved with the criminal justice system (26% were on probation and 15% were under parole supervision). In terms of living situation, 30% reported living as dependents and approximately 22% were homeless. Approximately 26% of injection drug user admissions were Medi-Cal beneficiaries, and only 5% were linked to a public assistance program.

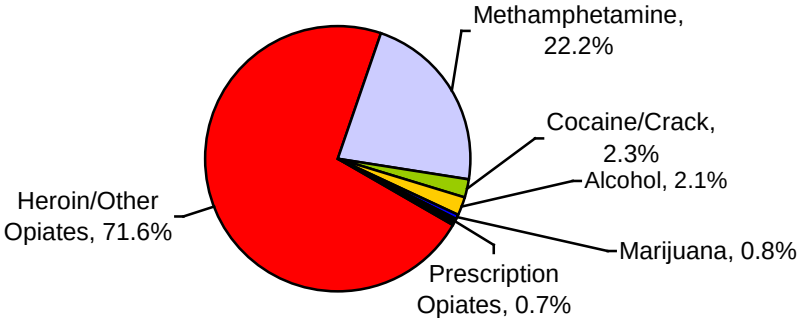
Figure 33: Sociodemographic Factors among Injectors



Drug Use Factors

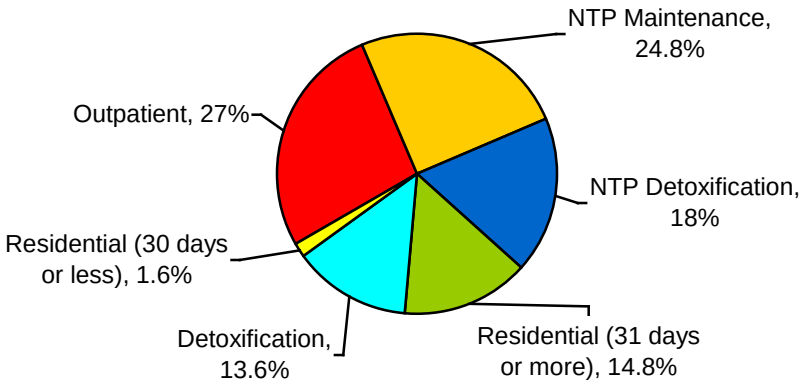
Most injection drug user admissions reported heroin/other opiates as their primary drug (72%); 22% reported methamphetamine. Few injector admissions reported cocaine/crack (2%) and only 2% reported alcohol as primary drug problems at admission.

Figure 34: Injectors by Primary Drug



Nearly 20% of all treatment admissions reported injection drug use, defined as any injection drug use in the past 30 days, 12 months or primary injection route of administration. Injection drug user admissions were predominantly admitted to either outpatient treatment (27%) or NTP maintenance (25%). About 18% of injection drug user admissions went into NTP detoxification, 15% entered into residential treatment for 31 days or more, and 14% entered into detoxification programs. Source of referral among injection drug user admissions was most often self-referral (55%), though 29% were referred through the criminal justice system (17% SACPA) and 16% via other sources.

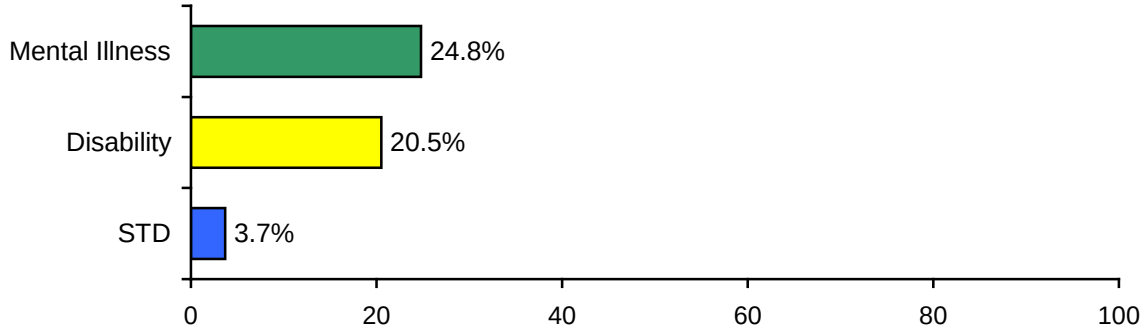
Figure 35: Injectors by Treatment Service Type



Health Status Factors

Approximately 25% of injection drug user admissions had a lifetime diagnosis of mental illness and almost 21% had a disability. Few injection drug user admissions reported a positive STD status (4%).

Figure 36: Injectors& Health Status



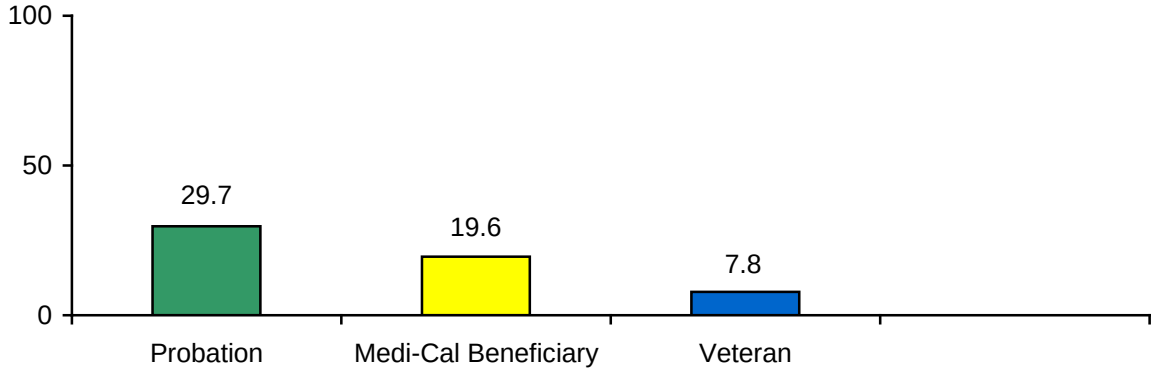
HOMELESS

Substance use disorders are a major factor among the homeless (Singh et al., 2005), with prevalence rates ranging from 40% to 65%. Many of the social and medical problems experienced by the homeless as a group arise from their use and abuse of illicit drugs (Lubran, 1990; Gelberg et al., 1988). It is difficult to enroll homeless persons into treatment for substance abuse compared to the general population because they are typically transient and lack access to available services (Orwin, Garrison-Morgen, Jacobs & Sonnefelde, 1999).

Sociodemographic Factors

Homeless admissions had a mean age of 39. One-third of homeless admissions were female (33%). Slightly less than half (48%) of these admissions were White with the other half mostly consisting of African Americans (24%) and Hispanic/Latinos (22%). Among homeless admissions, the mean years of education completed was 11.7, and 33% had less than a high school education. Nearly half of this admission population was involved with the criminal justice system (30% on probation and 14% under parole supervision). Roughly 20% of homeless admissions received Medi-Cal benefits, and about 6% were linked to a public assistance program. Among homeless admissions, nearly 8% were veterans.

Figure 37: Sociodemographic Factors among Homeless Admissions

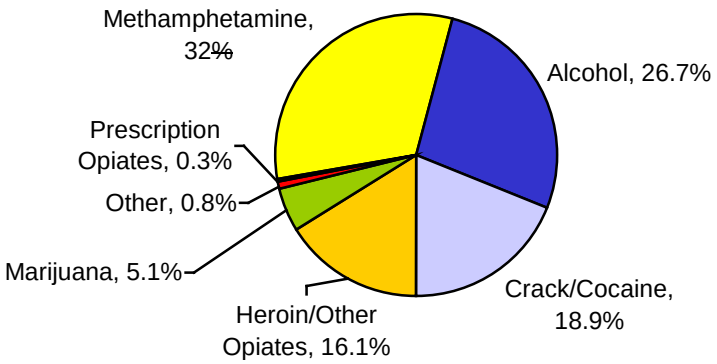


Drug Use Factors

Many homeless admissions reported methamphetamine as their primary drug at admission (32%). Admissions for primary alcohol abuse accounted for 27% among this homeless group. Cocaine/crack and heroin/other opiates were the next most frequently reported drugs (19% and 16%, respectively). The

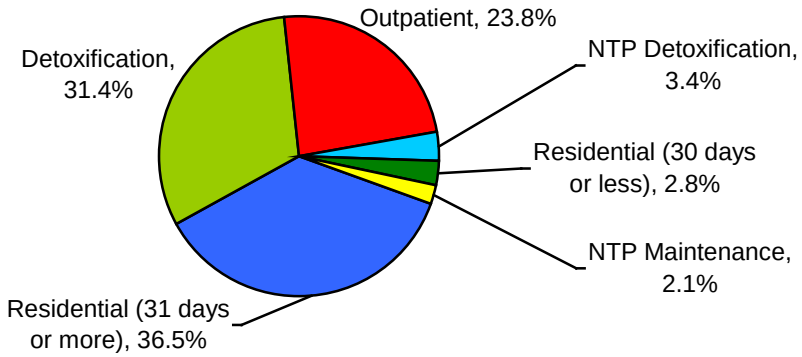
proportion of homeless client admissions admitted for primary use of marijuana was small (5%). Roughly 23% of homeless admissions were injection drug users.

Figure 38: Homeless Admissions by Primary Drug



In California, nearly 19% of the treatment admissions reported they were homeless. Long-term residential treatment (31 days or more; 37%) and detoxification programs (31%) were the two most common types of treatment services that this group enrolled in. Outpatient treatment among this population accounted for 24% of admissions; a small percentage entered NTP detoxification programs (3%) or maintenance programs (2%). Self-referral was the most common source of referral among homeless admissions (40%). About 31% of referrals came from the criminal justice system; 16% of the total referrals for this group were through SACPA.

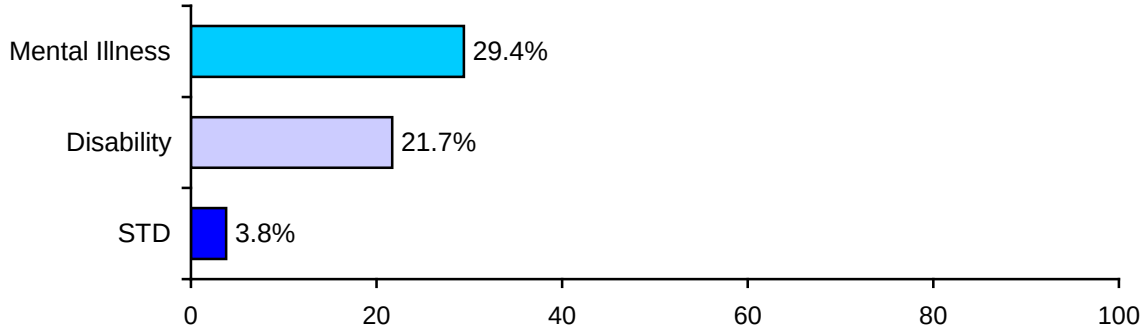
Figure 39: Homeless Admissions by Treatment Service Type/Modality



Health Status Factors

A lifetime diagnosis of mental illness was reported by about 29% of homeless admissions and 22% reported a disability of some sort. Fewer than 4% of this admission population had a positive STD status.

Figure 40: Homeless Admissions & Health Status



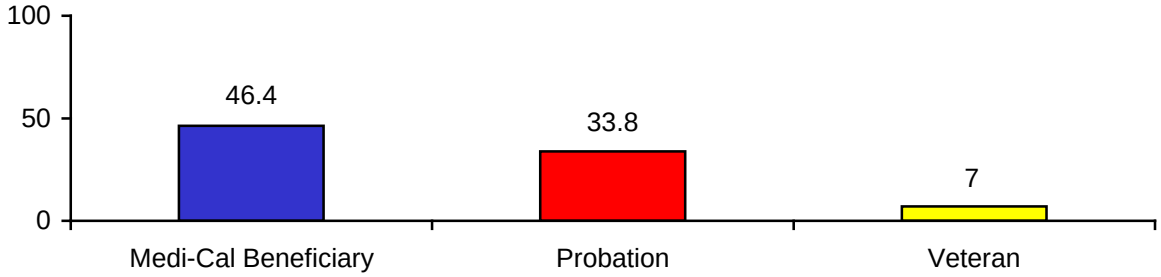
DISABLED

According to the U.S. Department of Health and Human Services, substance use disorders are more prevalent among individuals with disabilities than they are within the general population. The occurrence of substance use disorders varies across disabilities, though data has indicated that individuals with conditions such as deafness, arthritis, and multiple sclerosis have estimated rates that are at least double the proportion of substance use disorders in the general population (SAMHSA, 2002).

Sociodemographic Factors

The average age of admissions with a disability was 41. About 40% were female. Admissions with a disability were predominantly White (49%); 23% were Hispanic/Latino. On average, 11.6 years was the highest grade completed among clients with a disability, with many not having completed a high school education (36%). About 49% of these clients had criminal justice involvement (34% on probation and 10% under parole supervision). Forty-one percent of admissions of individuals with disabilities were living independently; however, 35% were living as dependents, and 24% were homeless. Nearly 47% of this population was receiving benefits through Medi-Cal. Approximately 7% of treatment admissions with a disability were veterans, and 6% were linked to a public assistance program of some sort.

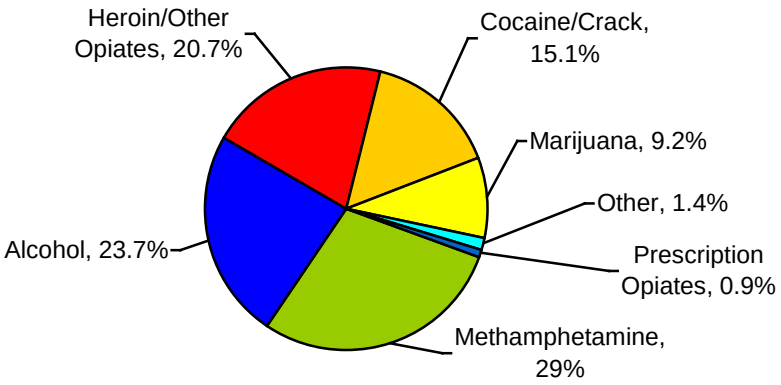
Figure 41: Sociodemographic Factors among Admissions with Disabilities



Drug Use Factors

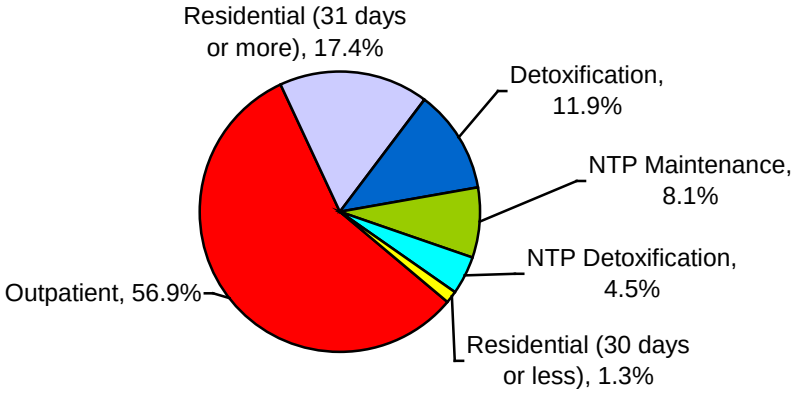
Methamphetamine was the most common primary drug reported among admissions with a disability (29%). About 24% reported alcohol as their primary drug, 21% heroin/other opiates, 15% cocaine/crack, and 9% marijuana. Less than 1% of individuals with a disability were primary prescription opiate users. Among clients with disabilities, 24% reported injection drug use.

Figure 42: Admissions with Disabilities by Primary Substance Use



Approximately 17% of client admissions to treatment had a disability, ranging from sensory impairment (visual, hearing) to cognitive and developmental deficits. Most admissions with a disability were admitted to outpatient treatment (about 57%). Other treatment services received among admissions reporting a disability included long-term residential (31 days or more; 17%) and detoxification (roughly 12%). Less than 13% of admissions with a disability were admitted to NTP maintenance or detoxification combined. The most common referral source among treatment admissions with a disability was self-referral (about 36%). Thirty-seven percent of disabled individuals were referred through the criminal justice system; 21% of the total of referrals for the disabled was through SACPA.

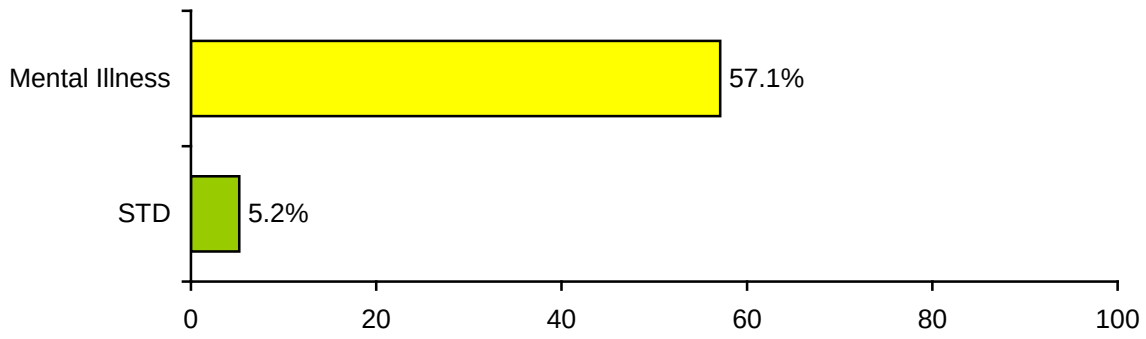
Figure 43: Admissions with Disabilities by Treatment Service Type



Health Status Factors

A substantial proportion (57%) of the admissions with a disability reported a lifetime diagnosis of mental illness and about 5% reported a positive STD status. It is important to consider that “mental” disability is by far the most common disability among treatment admissions.

Figure 44: Admissions with Disabilities & Health Status



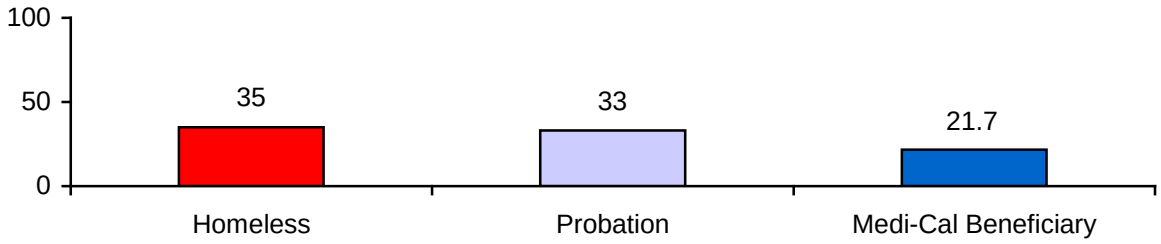
VETERANS

Veterans are a population at risk for substance use disorders because the stressors of military life and the adjustment for a veteran returning to civilian life can be difficult. National trends of substance use disorders among veterans show a greater likelihood for veterans (compared to non-veterans) to be in treatment for alcohol abuse. Data from the NSDUH show that an estimated 3.5% of veterans used marijuana in the past month compared with 3.0% of non-veterans and past-month heavy use of alcohol was also more prevalent among veterans compared to non-veterans (7.5% vs. 6.5%, respectively; SAMHSA, 2007).

Sociodemographic Factors

The mean age for veteran admissions was 46. Women made up a small portion of these admissions, accounting for only 8%. Most veteran admissions were White (54%) or African American (23%) and 17% were Hispanic/Latino. On average, veteran admissions completed 12.5 years of school, with a large amount reporting some college and/or graduate school (38%). About 33% of the veteran admissions were on probation and 13% were under parole. A substantial proportion of the veteran admissions population was homeless (35%). Nearly 22% of veteran admissions were Medi-Cal beneficiaries, and roughly 5% were linked to a public assistance program.

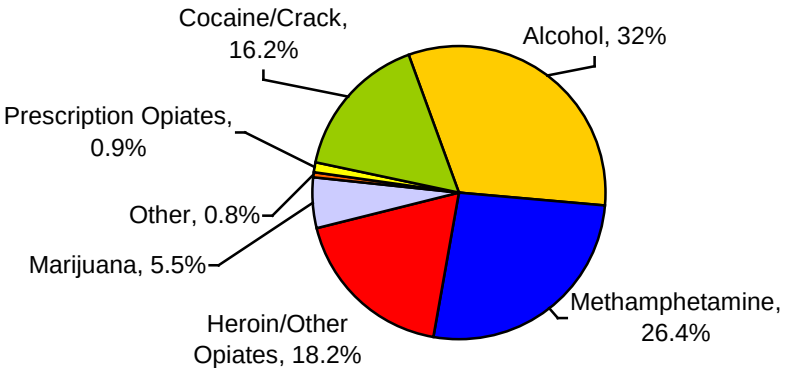
Figure 45: Sociodemographic Factors among Veterans



Drug Use Factors

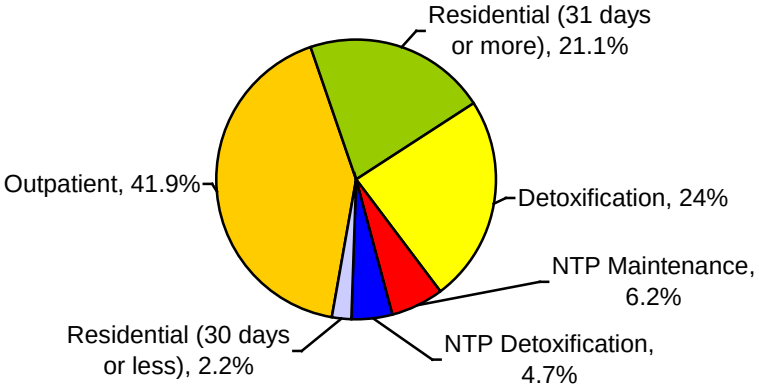
Alcohol was the primary drug reported by most veteran admissions (32%), followed by methamphetamine (26%), heroin/other opiates (18%), cocaine/crack (16%), and marijuana (5.5%). Only 1% of the veteran admissions used prescription opiates as their primary drug. About 22% of this admission population reported injection drug use.

Figure 46: Veterans by Primary Drug



In California during 2006-2007, 4% of client admissions were veterans. Forty-two percent were admitted into outpatient programs, about 24% into detoxification programs, and 21% into residential treatment (31 days or more). Few veteran admissions enrolled into NTP maintenance or detoxification programs (6% and 5%, respectively). The criminal justice system and self-referral were the most common sources of referral to treatment for veteran admissions (39% and 37%, respectively). Roughly 24% of veteran admissions were referred through SACPA.

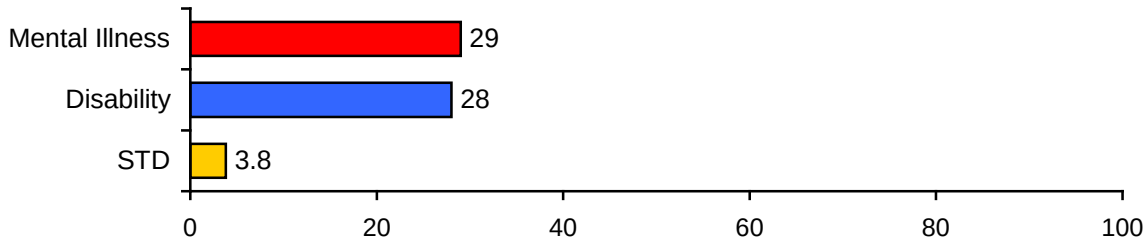
Figure 47: Veterans by Treatment Service Type/Modality



Health Status Factors

Among the veteran admissions, about 29% reported a lifetime diagnosis of mental illness and more than 28% had a disability of some sort. Fewer than 4% had a positive STD status.

Figure 48: Veterans & Health Status



REFERENCES

Amaro, H. & Zuckerman, B. (1990). Patterns and prevalence of drug use among adolescent mothers. *Advances in Adolescent Mental Health, 4*, 203-221.

Centers for Disease Control and Prevention. (2005). Drug-Associated HIV Transmission Continues in the United States, CDC Factsheet (May 2005). Retrieved from http://www.cdc.gov/hiv/resources/factsheets/.

Greenfield, S.F., Brooks, A.J., Gordon, S.M., Green, C.A., Kropp, F., McHugh, K.R., Lincoln, M., Denise Hien, D., & Miele, G.M. (2007). Substance abuse treatment entry, retention, and outcome in women: A review of the literature. *Drug and Alcohol Dependence,* 86(1), 1-21.

Grella, C.E. (1997). Services for perinatal women with substance abuse and mental health disorders: The unmet need. *Journal of Psychoactive Drugs,* 29(1), 67-78.

Johnston, L.D., O'Malley, P.M., Bachman, J.G., & Schulenberg, J.E. (2007). *Monitoring the Future national results on adolescent drug use: Overview of key findings, 2006.* (NIH Publication No. 07-6202). Bethesda, MD: National Institute on Drug Abuse.

Kessler, R.C., Guilherme, B., & Walters, E.E. (2005a). Prevalence of and risk factors for lifetime suicide attempts in the National Comorbidity Survey. *Journal of the American Medical Association, 293*, 2487-2495.

Kessler, R.C., Chiu, W.T., Demler, O., & Walters, E.E. (2005b). Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry, 62*(6), 617-627.

Mueser, K.T., Drake, R.E., Turner, W., & McGovern, M. (2006). Comorbid substance use disorders and psychiatric disorders. In W.R. Miller & K.M. Carroll (Eds.), *Rethinking substance abuse* (pp. 115 – 133). New York: Guilford Press.

Regier, D.A., Farmer, M.E., Rae, D.S., Locke, B.Z., Keith, S.J., Judd, L.L. & Goodwin, F.K. (1990). Comorbidity of mental disorders with alcohol and other drug abuse. Results from the Epidemiologic Catchment Area (ECA) Study. *Journal of the American Medical Association, 264*(19), 2511-2518.

Substance Abuse and Mental Health Services Administration (SAMHSA). (2004). *Treatment Episode Data Set* (TEDS). Rockville, MD: Office of Applied Studies, U.S. Department of Health and Human Services.

Watkins, K.E., Hunter, S.B., Wenzel, S.L., Tu, W., Paddock, S.M., Griffin, A., Ebener, P. (2004). Prevalence and characteristics of clients with co-occurring disorders in outpatient substance abuse treatment. *American Journal of Drug and Alcohol Abuse, 30*, 749-764.

Wermuth, L. (2000). Methamphetamine use: Hazards and social influences. *Journal of Drug Education, 30,* 423-433.

Zilberman, M., Tavares, H., & N. el-Guebaly, N. (2003). Gender similarities and differences the prevalence and course of alcohol- and other substance-related disorders, *Journal of Addictive Disorders, 22,* 61–74.

Glossary of Terms

California Work Opportunities and Responsibility to Kids (CalWORKs). The CalWORKs program provides temporary financial assistance and employment-focused services to families with minor children who have income and property below state maximum limits for their family size.

Criminal Justice Status. Criminal justice status is defined by having involvement with probation or parole supervision, incarceration, or awaiting trial, charges or sentencing. In addition, being admitted to treatment from some type of diversion from any court under California Penal Code (Section 1000) is considered having a criminal justice status.

Dependent Living. Individuals who do not contribute to the cost of where they are living in any way fall under this category. Examples of dependent living include persons living in homes and persons living with a relative who do not pay for room or board or otherwise contribute to the cost of their living. This includes incarcerated persons.

Detoxification (non-medical). A service designed to support and assist an individual in the withdrawal process, without medication or medical care, and to explore plans for continued services.

Disability. Collection of data on disabilities enables ADP to measure the number of persons with disabilities. This information is valuable for needs assessment and improvement of service delivery. Types of disabilities include visual, hearing, speech, mobility, mental, developmentally disabled, and other.

Female Offender Treatment and Education Program (FOTEP). The Female Offender Treatment and Education Program (FOTEP) provides residential and outpatient alcohol and drug treatment and recovery services to female parolees in four counties. FOTEP programs provide up to six months (180 days) of alcohol and drug treatment services to each participant.

Homeless. A homeless individual is defined as someone who is living on the street or in an emergency shelter.

Independent Living. This includes individuals who own their home, rent/live alone, live with roommates and pay rent or otherwise contribute financially to the cost of the home/apartment.

Injection Drug User. Injection drug use entails introducing the substance directly into the bloodstream through a vein. In order to identify the frequency with which needle use occurs, individuals are asked how many days they used needles to inject drugs in the past 30 days and if they have used needles in the past twelve months.

Medi-Cal Beneficiary. In order to identify the number of Medi-Cal beneficiaries seeking AOD treatment, individuals are asked if they are a Medi-Cal beneficiary. Medi-Cal is California's Medicaid program. It is a public health insurance program that provides needed health care services for low-income individuals including families with children, seniors, persons with disabilities, persons in foster care, pregnant women, and low income people with specific diseases such as tuberculosis, breast cancer, or HIV/AIDS. Medi-Cal is financed equally by the state and federal governments.

Mental Illness. In order to collect valuable information about the prevalence and frequency of co-occurring disorders (COD), individuals are asked if they have ever been diagnosed with a mental illness.

Narcotic Treatment Program Detoxification. Patients are provided with gradually reduced doses of narcotic replacement medication to prevent withdrawal symptoms. Detoxification is generally short-term, usually 21 or fewer days, although it can be long-term, up to 180 days.

Narcotic Treatment Program Maintenance. A program which is licensed by the State Department of Alcohol and Drug Programs, or is operated by the federal government to administer methadone or any other approved narcotic to opiate addicts on a continuing basis (i.e., longer than 21 days).

Older Adults. Older adults are individuals aged 55 and older.

Outpatient Treatment (Outpatient/Nonresidential or Intensive Outpatient/Day Program). Services are provided to persons who reside outside the facility, maintain an individual recovery plan, and attend regularly scheduled counseling or group sessions: Outpatient/Nonresidential - once or more per month, Intensive Outpatient/Day Program - two or more hours per day for three or more days per week.

Parolee Services Network (PSN). The Parolee Services Network provides community alcohol and drug treatment and recovery services to parolees either from the community parole systems or immediately upon release from prison custody. The program operates in 17 counties statewide and provides up to 180 days of alcohol or other drug treatment and recovery services.

Public Assistance Programs. A government supported program that provides economic and/or social assistance to qualifying individuals. These programs include Medi-Cal, CalWorks, Female Offender Treatment and Education Program (FOTEP), and Parolee Services Network (PSN).

Pregnant Women. These are women who are pregnant at admission.

Residential Treatment. The facility provides food, shelter, and recovery services, on a 24-hour basis, for persons with alcohol and/or other drug abuse problems. Hospitals are not included in this category.

Source of Referral. In this report, source of referral was condensed into four categories. Self-referral (individual), SACPA criminal justice referral (includes SACPA Court/Probation and SACPA Parole), Non-SACPA criminal justice referral (includes DUI/DWI, Drug Court Partnership, Comprehensive Drug Court Implementation, Dependency Court/Child Protective Services and Non-SACPA Court/Criminal Justice), and other (includes Alcohol/Drug Abuse Program, Other Health Care Provider, School/Education, Employer/EAP, 12-Step Mutual Aid).

Sexually Transmitted Disease (STD). A sexually transmitted disease is a disease transmitted through sexual contact. Transmission may occur through the exchange of semen, blood, and other body fluids or direct body contact. The term sexually transmitted disease applies to more than 20 different infections. They are also commonly referred to as Sexually Transmitted Infections (STI). Within this report, a positive STD status is derived from answering “yes” to the CalOMS item, “Has the client been diagnosed with a sexually transmitted disease?”

Substance Abuse and Crime Prevention Act of 2000 (SACPA). The Substance Abuse and Crime Prevention Act of 2000 (SACPA) program provides drug treatment rather than incarceration for first- or second-time nonviolent adult drug offenders who use, possess, or transport illegal drugs for personal use.

Veteran. This identifies admissions who are U.S. veterans. Collecting this information provides an estimate of the number of veterans seeking alcohol and other drug services in California.

Women. Clients who are not identified as male or “other” gender.

Women with Minor Children. Women with a child who is 17 or younger.

Women of Childbearing Age. Females who are 15 through 44 years old.

Youth. Individuals who are 12 through 17 years old.

Young Adults. Individuals who are 18 through 24 years old.

Data Tables for Priority and Special Needs Groups

PRIORITY GROUPS

Table 1: Female Admissions *(n*=77,713)

Variable	*n*	% Yes
Sociodemographic Characteristics		
Age		
Mean age (years)	77,713	33.7±11.5
Youth (age 12-17)	6,548	8.4
Young adults (age 18-24)	12,963	16.7
Of Childbearing age (age 15-44)	61,148	78.7
Older adults (age 55+)	2,648	3.4
Race		
White/ Non-Hispanic	36,106	46.5
Hispanic/Latino	24,039	30.9
Black/African American	11,615	15.0
Asian/Pacific Islander	1,547	2.0
American Indian/Alaska Native	1,619	2.1
Other	2,787	3.6
Education		
Highest grade completed	77,377	11.4
Less than high school	33,173	42.9
High School	28,868	37.3
Some College/Graduate School	15,336	19.8
Criminal Justice Status		
No criminal justice involvement	41,217	53.1
Any criminal justice status	36,481	47
Under parole supervision	4,557	5.9
On probation	28,156	36.2
Other diversion	1,654	2.1
Incarcerated	829	1.1
Awaiting trial, charges or sentencing	1,285	1.7
Current Living Arrangements		
Homeless	13,441	17.3
Dependent Living	32,487	41.8
Independent Living	31,785	40.9
Veteran Status	748	1.0
Links to public assistance program		
Medi-Cal beneficiary	31,332	40.3
California Work Opportunity and Responsibility to Kids (CalWORKs), Parolee Services Network (PSN), Female Offender Treatment Program (FOTP)	7,478	9.6
Has Minor Children	42,075	60

Number of Children Aged 17 Or Younger		
Mean number if children	70,132	1.4
0 (have no children)	28,057	40.0
1	14,833	21.2
2	12,145	17.3
3	7,783	11.1
4	4,102	5.9
5 or more	1,865	2.7
Number of children living with someone else due to termination of parental rights		
0	65,034	92.7
1	2,239	3.2
2 or more	2,852	4.1
Has parental rights for some children	39,546	94.0
Drug Use Factors		
Primary Drug		
Prescription opiates	807	1.0
Heroin/Other Opiates	12,730	16.4
Cocaine/Crack	7,789	10.0
Methamphetamine	32,226	41.5
Alcohol	13,955	18.0
Marijuana	8,937	11.5
Benzodiazepines	144	0.2
Other	1,125	1.5
Injection Drug Use	14,283	18.4
Treatment Factors		
Treatment Service Type/Modality		
Outpatient	47,244	60.8
Residential (30 days or less)	957	1.2
Residential (31 days or more)	14,763	19.0
Detoxification	6,957	9.0
Narcotic Treatment Program Detoxification	3,014	3.88
Narcotic Treatment Program Maintenance	478	6.2
Source of Referral		
Self	26,746	34.4
Substance Abuse Crime Prevention Act (SACPA)	14,405	18.5
Non-SACPA Criminal Justice System	16,200	20.9
Other	20,362	26.2
Health Factors		
Lifetime Mental Illness Diagnosis	22,714	29.5
Has a disability	14,512	18.8
Sexually Transmitted Disease	3,755	5.4
Pregnant at Admission	4,440	5.8

Table 2: Females Pregnant at Admission (*n*=4,440)

Variable	*n*	% Yes
Sociodemographic Characteristics		
Age		
Mean age (years)	4,440	27±6.8
Youth (age 12-17)	210	4.7
Young Adults (age 18-24)	1,527	34.4
Older adults (age 55+)	9	0.2
Race		
White/ Non-Hispanic	1,802	40.6
Hispanic/Latino	1,704	38.4
Black/African American	570	12.8
Asian/Pacific Islander	93	2.1
American Indian/Alaska Native	85	1.9
Other	186	4.2
Education		
Highest grade completed	4,427	11.2
Less than high school	2,265	51.2
High School	1,590	35.9
Some College/Graduate School	572	12.9
Criminal Justice Status		
No criminal justice involvement	2,181	49.1
Any criminal justice status	2,259	50.9
Under parole supervision	195	4.4
On probation	1,775	40.0
Other diversion	107	2.4
Incarcerated	100	2.3
Awaiting trial, charges or sentencing	82	1.9
Current Living Arrangements		
Homeless	925	20.8
Dependent Living	1,973	44.4
Independent Living	1,542	34.7
Veteran Status	36	0.8
Links to public assistance program		
Medi-Cal beneficiary	2,708	61.0
California Work Opportunity and Responsibility to Kids (CalWORKs), Parolee Services Network (PSN), Female Offender Treatment Program (FOTP)	738	16.6
Drug Use Factors		
Primary Drug		
Prescription Opiates	28	0.6
Heroin/Other Opiates	466	10.5
Cocaine/Crack	327	7.4

Methamphetamine	2,519	56.7
Alcohol	405	9.1
Marijuana	650	14.6
Benzodiazepines	1	0.0
Other	44	1.0
Injection Drug Use	630	14.2
Treatment Factors		
Treatment Service Type/Modality		
Outpatient	2,658	59.9
Residential (30 days or less)	38	0.9
Residential (31 days or more)	1,306	29.4
Detoxification	166	3.7
Narcotic Treatment Program Detoxification	20	0.5
Narcotic Treatment Program Maintenance	252	5.7
Source of Referral		
Self	1,307	29.4
Substance Abuse Crime Prevention Act (SACPA)	733	16.5
Non-SACPA Criminal Justice System	1,189	26.8
Other	1,211	27.3
Health Factors		
Lifetime Mental Illness Diagnosis	1,040	23.5
Has a disability	515	11.7
Sexually Transmitted Disease	323	7.8

Table 3: Females with a Minor Child at Admission *(n*=42,075)

Variable	*n*	%Yes
Sociodemographic Characteristics		
Age		
Mean age (years)	42,075	33.4±8.3
Youth (age 12-17)	0	0
Young adults (age 18-24)	6,632	15.8
Older adults (age 55+)	177	0.4
Race		
White/ Non-Hispanic	19,382	46.1
Hispanic/Latino	14,030	33.4
Black/African American	5,479	13.0
Asian/Pacific Islander	829	2.0
American Indian/Alaska Native	971	2.3
Other	1,384	3.3
Education		
Highest grade completed	41,911	11.5
Less than high school	17,347	41.4
High School	16,515	39.4
Some College/Graduate School	8,049	19.2
Criminal Justice Status		
No criminal justice involvement	21,234	50.5
Any criminal justice status	20,840	49.5
Under parole supervision	2,851	6.8
On probation	15,741	37.4
Other diversion	929	2.2
Incarcerated	469	1.1
Awaiting trial, charges or sentencing	850	2.0
Current Living Arrangements		
Homeless	7,886	18.7
Dependent Living	15,380	36.6
Independent Living	18,809	44.7
Veteran Status	396	1.0
Links to public assistance program		
Medi-Cal beneficiary	17,982	42.8
California Work Opportunity and Responsibility to Kids (CalWORKs), Parolee Services Network (PSN), Female Offender Treatment Program (FOTP)	6,647	15.8
Drug Use Factors		
Primary Drug		
Prescription opiates	339	0.8
Heroin/Other Opiates	5,048	12
Cocaine/Crack	4,133	9.8

Methamphetamine	22,437	53.3
Alcohol	5,997	14.3
Marijuana	3,583	8.5
Benzodiazepines	58	0.1
Other	480	1.1
Injection Drug Use	6,622	15.7
Treatment Factors		
Treatment Service Type/Modality		
Outpatient	26,229	62.3
Residential (30 days or less)	528	1.3
Residential (31 days or more)	9,608	22.8
Detoxification	3,155	7.5
Narcotic Treatment Program Detoxification	914	2.2
Narcotic Treatment Program Maintenance	1,641	3.9
Source of Referral		
Self	12,503	29.7
Substance Abuse Crime Prevention Act (SACPA)	8,056	19.2
Non-SACPA Criminal Justice System	10,541	25.1
Other	10,975	26.1
Health Factors		
Lifetime Mental Illness Diagnosis	12,678	30.3
Has a disability	7,240	17.3
Sexually Transmitted Disease	2,586	6.2

Table 4: Females of Childbearing Age (ages 15-44 inclusive) at Admission *(n*=61,148)

Variable	*n*	% Yes
Sociodemographic Characteristics		
Age		
Mean age (years)	61,148	29.8±8.4
Youth (age 12-17)	5,485	9.0
Young adults (age 18-24)	12,963	21.2
Older adults (age 55+)	0	0
Race		
White/ Non-Hispanic	27,893	45.6
Hispanic/Latino	20,546	33.6
Black/African American	7,845	12.8
Asian/Pacific Islander	1,331	2.2
American Indian/Alaska Native	1,262	2.1
Other	2,271	3.7
Education		
Highest grade completed	60,894	11.3
Less than high school	27,761	45.6
High School	22,453	36.9
Some College/Graduate School	10,680	17.5
Criminal Justice Status		
No criminal justice involvement	31,255	51.1
Any criminal justice status	29,885	48.9
Under parole supervision	3,534	5.8
On probation	23,174	37.9
Other diversion	1,390	2.3
Incarcerated	707	1.2
Awaiting trial, charges or sentencing	1,080	1.8
Current Living Arrangements		
Homeless	10,403	17.0
Dependent Living	26,599	43.5
Independent Living	24,146	39.5
Veteran Status	520	0.9
Links to public assistance program		
Medi-Cal beneficiary	24,899	40.7
California Work Opportunity and Responsibility to Kids (CalWORKs), Parolee Services Network (PSN), Female Offender Treatment Program (FOTP)	6,818	11.2
Drug Use Factors		
Primary Drug		
Prescription opiates	645	1.1
Heroin/Other Opiates	7,940	13.0
Cocaine/Crack	5,195	8.5
Methamphetamine	29,030	47.5

Alcohol	9,455	15.5
Marijuana	7,940	13.0
Benzodiazepines	89	0.2
Other	854	1.4
Injection Drug Use	9,774	16.0
Treatment Factors		
Treatment Service Type/Modality		
Outpatient	38,561	63.1
Residential (30 days or less)	754	1.2
Residential (31 days or more)	12,374	20.2
Detoxification	4,921	8.1
Narcotic Treatment Program Detoxification	1,800	2.9
Narcotic Treatment Program Maintenance	2,738	4.5
Source of Referral		
Self	19,133	31.3
Substance Abuse Crime Prevention Act (SACPA)	11,243	18.4
Non-SACPA Criminal Justice System	14,223	23.3
Other	16,549	27.1
Health Factors		
Lifetime Mental Illness Diagnosis	16,795	27.7
Has a disability	9,312	15.3
Sexually Transmitted Disease	3,148	5.8

Table 5: Youth (ages 12-17) *(n*=18,938)

Variable	*n*	% Yes
Sociodemographic Characteristics		
Mean age (years)	18,938	15.8±1.2
Race		
White/ Non-Hispanic	4,105	21.7
Hispanic/Latino	10,545	55.7
Black/African American	2,724	14.4
Asian/Pacific Islander	514	2.7
American Indian/Alaska Native	195	1.0
Other	855	4.5
Education		
Highest grade completed	18,886	9.1
Less than high school	18,504	98.0
High School	355	1.9
Some College/Graduate School	27	0.1
Criminal Justice Status		
No criminal justice involvement	9,856	52.0
Any criminal justice status	9,082	48.0
Under parole supervision	86	0.5
On probation	8,407	44.4
Other diversion	201	1.1
Incarcerated	234	1.2
Awaiting trial, charges or sentencing	154	0.8
Current Living Arrangements		
Homeless	101	0.5
Dependent Living	17,296	91.3
Independent Living	1,541	8.1
Links to public assistance program		
Medi-Cal beneficiary	12,489	66.0
California Work Opportunity and Responsibility to Kids (CalWORKs), Parolee Services Network (PSN), Female Offender Treatment Program (FOTP)	207	1.1
Drug Use Factors		
Primary Drug		
Prescription opiates	22	0.1
Heroin/Other Opiates	77	0.4
Cocaine/Crack	273	1.4
Methamphetamine	1,849	9.8
Alcohol	4,305	22.7
Marijuana	11,866	62.7
Benzodiazepines	3	0.0
Other	543	2.9
Injection Drug Use	89	0.5

Treatment Factors		
Treatment Service Type/Modality		
Outpatient	17,820	94.1
Residential (30 days or less)	240	1.3
Residential (31 days or more)	825	4.4
Detoxification	27	0.1
Narcotic Treatment Program Detoxification	4	0.0
Narcotic Treatment Program Maintenance	22	0.1
Source of Referral		
Self	3,590	19.0
Substance Abuse Crime Prevention Act (SACPA)	763	4.0
Non-SACPA Criminal Justice Service	5,677	30.0
Other	8,908	47.0
Health Factors		
Lifetime Mental Illness Diagnosis	1,525	8.2
Has a disability	742	3.9

Table 6: Young Adults (ages 18-24) (*n*=33,715)

Variable	*n*	% Yes
Sociodemographic Characteristics		
Mean age (years)	33,715	21.3±2
Race		
White/ Non-Hispanic	14,059	41.7
Hispanic/Latino	13,750	40.8
Black/African American	3,021	9.0
Asian/Pacific Islander	1,047	3.1
American Indian/Alaska Native	435	1.3
Other	1,403	4.2
Education		
Highest grade completed	33,574	11.2
Less than high school	16,518	49.2
High School	13,880	41.3
Some College/Graduate School	3,176	9.5
Criminal Justice Status		
No criminal justice involvement	12,965	38.5
Any criminal justice status	20,743	61.5
Under parole supervision	1,328	3.9
On probation	16,792	49.8
Other diversion	1,179	3.5
Incarcerated	325	1.0
Awaiting trial, charges or sentencing	563	1.7
Current Living Arrangements		
Homeless	3,962	11.8
Dependent Living	18,251	54.1
Independent Living	11,502	34.1
Veteran Status	328	1.0
Links to public assistance program		
Medi-Cal beneficiary	9,497	28.2
California Work Opportunity and Responsibility to Kids (CalWORKs), Parolee Services Network (PSN), Female Offender Treatment Program (FOTP)	5,155	6.4
Drug Use Factors		
Primary Drug		
Prescription opiates	824	2.4
Heroin/Other Opiates	3,012	8.9
Cocaine/Crack	1,628	4.8
Methamphetamine	14,705	43.6
Alcohol	4,503	13.4
Marijuana	8,607	25.5
Benzodiazepines	25	0.1

Other	411	1.2
Injection Drug Use	3,493	10.4
Treatment Factors		
Treatment Service Type/Modality		
Outpatient	22,545	66.9
Residential (30 days or less)	516	1.5
Residential (31 days or more)	6,556	19.5
Detoxification	2,275	6.8
Narcotic Treatment Program Detoxification	949	2.8
Narcotic Treatment Program Maintenance	874	2.6
Source of Referral		
Self	8,661	25.7
Substance Abuse Crime Prevention Act (SACPA)	8,191	24.3
Non-SACPA Criminal Justice Service	10,013	29.7
Other	6,850	20.3
Health Factors		
Lifetime Mental Illness Diagnosis	5,402	16.2
Has a disability	2,853	8.5
Sexually Transmitted Disease	1,169	3.9

Table 7: Older Adults (ages 55+) (*n*=11,639)

Variable	*n*	% Yes
Sociodemographic Characteristics		
Mean age (years)	11,639	59.2±4.5
Race		
White/ Non-Hispanic	5,429	46.6
Hispanic/Latino	2,356	20.2
Black/African American	3,193	27.4
Asian/Pacific Islander	167	1.4
American Indian/Alaska Native	168	1.4
Other	326	2.8
Education		
Highest grade completed	11,568	12.0
Less than high school	3,107	26.9
High School	4,902	42.4
Some College/Graduate School	3,559	30.8
Criminal Justice Status		
No criminal justice involvement	7,770	66.8
Any criminal justice status	3,867	33.2
Under parole supervision	866	7.4
On probation	2,621	22.5
Other diversion	233	2.0
Incarcerated	47	0.4
Awaiting trial, charges or sentencing	100	0.9
Current Living Arrangements		
Homeless	2,820	24.2
Dependent Living	3,169	27.2
Independent Living	5,650	48.5
Veteran Status	1,823	15.8
Links to public assistance program		
Medi-Cal beneficiary	4,448	38.3
California Work Opportunity and Responsibility to Kids (CalWORKs), Parolee Services Network (PSN), Female Offender Treatment Program (FOTP)	310	2.7
Drug Use Factors		
Primary Drug		
Prescription opiates	101	0.9
Heroin/Other Opiates	4,435	38.1
Cocaine/Crack	1,724	14.8
Methamphetamine	1,047	9.0
Alcohol	3,831	32.9
Marijuana	341	2.9
Benzodiazepines	32	0.3

Other	128	1.1
Injection Drug Use	4,115	35.4
Treatment Factors		
Treatment Service Type/Modality		
Outpatient	4,722	40.6
Residential (30 days or less)	155	1.3
Residential (31 days or more)	1,461	12.6
Detoxification	2,074	17.8
Narcotic Treatment Program Detoxification	1,197	12.3
Narcotic Treatment Program Maintenance	2030	17.4
Source of Referral		
Self	6,040	51.9
Substance Abuse Crime Prevention Act (SACPA)	1,878	16.1
Non-SACPA Criminal Justice Service	1,213	10.4
Other	2,508	21.6
Health Factors		
Lifetime Mental Illness Diagnosis	3,258	28.2
Has a disability	4,349	37.6
Sexually Transmitted Disease	371	3.3

Table 8: Clients Reporting Lifetime Mental Illness Diagnosis (*n*=45,850)

Variable	*n*	%Yes
Sociodemographic Characteristics		
Mean age (years)	45,850	37.9±11.6
Race		
White/ Non-Hispanic	25,413	55.4
Hispanic/Latino	9,479	20.7
Black/African American	7,632	16.7
Asian/Pacific Islander	693	1.5
American Indian/Alaska Native	888	1.9
Other	1,745	3.8
Education		
Highest grade completed	45,634	11.8
Less than high school	16,122	35.3
High School	17,787	39
Some College/Graduate School	11,725	25.7
Criminal Justice Status		
No criminal justice involvement	23,906	52.2
Any criminal justice status	21,929	47.8
Under parole supervision	4,405	9.6
On probation	15,493	33.8
Other diversion	939	2.1
Incarcerated	335	.7
Awaiting trial, charges or sentencing	757	1.7
Current Living Arrangements		
Homeless	11,798	25.7
Dependent Living	16,782	36.6
Independent Living	17,270	37.7
Veteran Status	2,553	5.6
Links to public assistance program		
Medi-Cal beneficiary	18,555	40.5
California Work Opportunity and Responsibility to Kids (CalWORKs), Parolee Services Network (PSN), Female Offender Treatment Program (FOTP)	3,224	7.0
Drug Use Factors		
Primary Drug		
Prescription opiates	504	1.1
Heroin/Other Opiates	8,260	18
Cocaine/Crack	6,045	13.2
Methamphetamine	14,344	31.3
Alcohol	11,632	25.4
Marijuana	4,328	9.4
Benzodiazepines	132	.3

Other	605	1.3
Injection Drug Use	10,462	22.8
Treatment Factors		
Treatment Service Type/Modality		
Outpatient	24,864	54.2
Residential (30 days or less)	810	1.8
Residential (31 days or more)	9,091	19.8
Detoxification	6,890	15
Narcotic Treatment Program Detoxification	1,710	3.7
Narcotic Treatment Program Maintenance	2,485	5.4
Source of Referral		
Self	16,946	40
Substance Abuse Crime Prevention Act (SACPA)	8,247	18
Non-SACPA Criminal Justice Service	7,857	17.1
Other	1,200	28
Health Factors		
Has a disability	20,543	45.1
Sexually Transmitted Disease	2,635	6.1

Table 9: Clients with a Criminal Justice Status *(n*=119,205)

Variable	*n*	% Yes
Sociodemographic Characteristics		
Mean age (years)	119,205	33.9±11.4
Race		
White/ Non-Hispanic	51,573	43.3
Hispanic/Latino	41,643	34.9
Black/African American	16,446	13.8
Asian/Pacific Islander	3,375	2.8
American Indian/Alaska Native	1,932	1.6
Other	4,236	3.6
Education		
Highest grade completed	118,701	11.4
Less than high school	50,801	42.8
High School	48,183	40.6
Some College/Graduate School	19,717	16.6
Criminal Justice Status		
Under parole supervision	23,130	19.4
On probation	86,662	72.7
Other diversion	4,800	4.0
Incarcerated	1,805	1.5
Awaiting trial, charges or sentencing	2,808	2.4
Current Living Arrangements		
Homeless	19,067	16.0
Dependent Living	54,517	45.7
Independent Living	45,621	38.3
Veteran Status	4,362	3.7
Links to public assistance program		
Medi-Cal beneficiary	25,702	21.6
California Work Opportunity and Responsibility to Kids (CalWORKs), Parolee Services Network (PSN), Female Offender Treatment Program (FOTP)	8,617	7.2
Drug Use Factors		
Primary Drug		
Prescription opiates	458	0.4
Heroin/Other Opiates	12,791	10.7
Cocaine/Crack	13,444	11.3
Methamphetamine	55,302	46.4
Alcohol	17,090	14.3
Marijuana	18,762	15.7
Benzodiazepines	57	0.2
Other	1,301	1.1
Injection Drug Use	18,814	15.8

Treatment Factors		
Modality		
Outpatient	82,617	69.3
Residential (30 days or less)	1,974	1.7
Residential (31 days or more)	23,655	19.8
Detoxification	6,949	5.8
Narcotic Treatment Program Detoxification	1,785	1.5
Narcotic Treatment Program Maintenance	2,225	1.9
Source of Referral		
Self	17,271	14.5
Substance Abuse Crime Prevention Act (SACPA)	50,788	42.6
Non-SACPA Criminal Justice Service	36,943	31.0
Other	14,203	11.9
Health Factors		
Lifetime Mental Illness Diagnosis	21,929	18.5
Has a disability	17,556	14.9
Sexually Transmitted Disease	3,897	3.6

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Table 10: Injection Drug User (*n*=42,379)

Variable	*n*	% Yes
Sociodemographic Characteristics		
Mean age (years)	42,379	40.4±11
Race		
White/ Non-Hispanic	22,546	53.2
Hispanic/Latino	13,569	32.0
Black/African American	3,905	9.2
Asian/Pacific Islander	411	1.0
American Indian/Alaska Native	693	1.6
Other	1,255	3.0
Education		
Highest grade completed	42,166	11.5
Less than high school	15,694	37.2
High School	18,761	44.5
Some College/Graduate School	7,711	18.3
Criminal Justice Status		
No criminal justice involvement	23,533	55.6
Any criminal justice status	18,814	44.4
Under parole supervision	6,393	15.1
On probation	10,920	25.8
Other diversion	716	1.7
Incarcerated	380	0.9
Awaiting trial, charges or sentencing	405	1.0
Current Living Arrangements		
Homeless	9,295	21.9
Dependent living	12,605	29.7
Independent living	20,479	48.3
Veteran Status	1,945	4.6
Links to public assistance program		
Medi-Cal beneficiary	10,876	25.7
California Work Opportunity and Responsibility to Kids (CalWORKs), Parolee Services Network (PSN), Female Offender Treatment Program (FOTP)	2,858	5.3
Drug Use Factors		
Primary Drug		
Prescription opiates	294	0.7
Heroin/Other Opiates	30,357	71.6
Cocaine/Crack	956	2.3
Methamphetamine	9,421	22.2
Alcohol	908	2.1
Marijuana	346	0.8

Benzodiazepines	9	0.02
Other	88	0.2
Treatment Factors		
Treatment Service Type/Modality		
Outpatient	11,466	27.1
Residential (30 days or less)	674	1.6
Residential (31 days or more)	6,286	14.8
Detoxification	5,777	13.6
Narcotic Treatment Program Detoxification	7,659	18.1
Narcotic Treatment Program Maintenance	10,517	24.8
Source of Referral		
Self	23,393	55.2
Substance Abuse Crime Prevention Act (SACPA)	7,219	17.0
Non-SACPA Criminal Justice Service	4,995	11.8
Other	6,772	16.0
Health Factors		
Lifetime Mental Illness Diagnosis	11,798	29.4
Has a disability	8,635	20.5
Sexually Transmitted Disease	1,550	3.7

Table 11: Homeless Admissions *(N*=40,394)

Variable	*n*	% Yes
Sociodemographic Characteristics		
Mean age (years)	40,394	39.2±10.6
Race		
White/ Non-Hispanic	19,410	48.1
Hispanic/Latino	8,790	21.8
Black/African American	9,517	23.6
Asian/Pacific Islander	650	1.6
American Indian/Alaska Native	714	1.8
Other	1,313	3.3
Education		
Highest grade completed	40,234	11.7
Less than high school	13,662	34.0
High School	17,020	42.3
Some College/Graduate School	9,552	23.7
Criminal Justice Status		
No criminal justice involvement	21,304	52.8
Any criminal justice status	19,067	47.2
Under parole supervision	5,499	13.6
On probation	11,980	29.7
Other diversion	759	1.9
Incarcerated	382	1.0
Awaiting trial, charges or sentencing	447	1.1
Veteran Status	3,126	7.8
Links to public assistance program		
Medi-Cal beneficiary	7,919	19.6
California Work Opportunity and Responsibility to Kids (CalWORKs), Parolee Services Network (PSN), Female Offender Treatment Program (FOTP)	2,382	5.9
Drug Use Factors		
Primary Drug		
Prescription opiates	128	0.3
Heroin/Other Opiates	6,488	16.1
Cocaine/Crack	7,626	18.9
Methamphetamine	12,942	32.0
Alcohol	10,793	26.7
Marijuana	2,078	5.1
Benzodiazepines	29	0.1
Other	310	0.8
Injection Drug Use	9,295	23.0

Treatment Factors		
Treatment Service Type/Modality		
Outpatient	9,623	23.8
Residential (30 days or less)	1,143	2.8
Residential (31 days or more)	14,755	36.5
Detoxification	12,663	31.4
Narcotic Treatment Program Detoxification	1,381	3.4
Narcotic Treatment Program Maintenance	824	2.1
Source of Referral		
Self	16,166	40.0
Substance Abuse Crime Prevention Act (SACPA)	6,377	15.8
Non-SACPA Criminal Justice Service	6,273	15.5
Other	11,578	28.7
Health Factors		
Lifetime Mental Illness Diagnosis	11,798	29.4
Has a disability	8,685	21.7
Sexually Transmitted Disease	1,497	3.8

Table 12: Clients in Dependent Living *(N*=91,012)

Variable	***n***	**% Yes**
Sociodemographic Characteristics		
Mean age (years)	91,012	30.7±12.5
Race		
White/ Non-Hispanic	34,155	37.5
Hispanic/Latino	37,435	41.1
Black/African American	11,983	13.2
Asian/Pacific Islander	2,727	3.0
American Indian/Alaska Native	1,279	1.4
Other	3,433	3.8
Education		
Highest grade completed	90,645	11.0
Less than high school	46,472	51.3
High School	32,062	35.4
Some College/Graduate School	12,111	13.4
Criminal Justice Status		
No criminal justice involvement	36,469	40.1
Any criminal justice status	54,517	59.9
Under parole supervision	9,395	10.3
On probation	40,718	44.8
Other diversion	2,214	2.4
Incarcerated	915	1.0
Awaiting trial, charges or sentencing	1,275	1.4
Veteran Status	2,350	2.6
Links to public assistance program		
Medi-Cal beneficiary	31,027	34.1
California Work Opportunity and Responsibility to Kids (CalWORKs), Parolee Services Network (PSN), Female Offender Treatment Program (FOTP)	5,740	6.3
Drug Use Factors		
Primary Drug		
Prescription opiates	618	0.7
Heroin/Other Opiates	11,248	12.4
Cocaine/Crack	7,611	8.4
Methamphetamine	33,105	36.4
Alcohol	16,816	18.5
Marijuana	20,171	22.2
Benzodiazepines	82	0.1
Other	1,361	1.5
Injection Drug Use	12,605	13.9

Treatment Factors		
Treatment Service Type/Modality		
Outpatient	63,406	69.7
Residential (30 days or less)	1,698	1.9
Residential (31 days or more)	14,290	15.7
Detoxification	6,001	6.6
Narcotic Treatment Program Detoxification	2,212	2.4
Narcotic Treatment Program Maintenance	3,405	3.7
Source of Referral		
Self	22,867	25.1
Substance Abuse Crime Prevention Act (SACPA)	23,484	25.8
Non-SACPA Criminal Justice Service	22,873	25.1
Other	21,788	23.9
Health Factors		
Lifetime Mental Illness Diagnosis	16,782	18.6
Has a disability	12,604	13.9
Sexually Transmitted Disease	2,446	3.5

Table 13: Clients with a Disability (*n*=36,198)

Variable	*n*	% Yes
Sociodemographic Characteristics		
Mean age (years)	36,198	41.2±11.7
Race		
White/ Non-Hispanic	17,578	48.6
Hispanic/Latino	8,220	22.7
Black/African American	7,644	21.1
Asian/Pacific Islander	637	1.8
American Indian/Alaska Native	702	1.9
Other	1,417	3.9
Education		
Highest grade completed	35,963	11.6
Less than high school	13,144	36.6
High School	14,302	39.8
Some College/Graduate School	8,517	23.7
Criminal Justice Status		
No criminal justice involvement	18,632	51.5
Any criminal justice status	17,556	48.5
Under parole supervision	3,666	10.1
On probation	12,224	33.8
Other diversion	891	2.5
Incarcerated	234	0.7
Awaiting trial, charges or sentencing	541	1.5
Current Living Arrangements		
Homeless	8,685	24.0
Dependent living	12,604	34.8
Independent living	14,909	41.2
Veteran Status	2,518	7.0
Links to public assistance program		
Medi-Cal beneficiary	16,808	46.4
California Work Opportunity and Responsibility to Kids (CalWORKs), Parolee Services Network (PSN), Female Offender Treatment Program (FOTP)	2,170	6.0
Drug Use Factors		
Primary Drug		
Prescription opiates	322	0.9
Heroin/Other Opiates	7,503	20.7
Cocaine/Crack	5,454	15.1
Methamphetamine	10,493	29.0
Alcohol	8,560	23.7
Marijuana	3,312	9.2
Benzodiazepines	58	0.2

Other	496	1.4
Injection Drug Use	8,635	23.9
Treatment Factors		
Modality		
Outpatient	20,585	56.9
Residential (30 days or less)	461	1.3
Residential (31 days or more)	6,300	17.4
Detoxification	4,304	11.9
Narcotic Drug Use Detoxification	1,625	4.5
Narcotic Drug Use Maintenance	2,923	8.1
Source of Referral		
Self	12,950	35.8
Substance Abuse Crime Prevention Act (SACPA)	7,748	21.4
Non-SACPA Criminal Justice Service	5,796	16.0
Other	9,704	26.8
Health Factors		
Lifetime Mental Illness Diagnosis	20,543	57.1
Sexually Transmitted Disease	1,825	5.2

Table 14: Veteran Admissions *(N*=8,899)

Variable	*n*	% Yes
Sociodemographic Characteristics		
Mean age (years)	8,899	46±10.7
Race		
White/ Non-Hispanic	4,829	54.3
Hispanic/Latino	1,480	16.6
Black/African American	2,050	23.0
Asian/Pacific Islander	131	1.5
American Indian/Alaska Native	148	1.7
Other	261	2.9
Education		
Highest grade completed	8,857	12.5
Less than high school	1,277	14.4
High School	4,225	47.7
Some College/Graduate School	3,355	37.9
Criminal Justice Status		
No criminal justice involvement	4,527	50.9
Any criminal justice status	4,362	49.1
Under parole supervision	1,117	12.6
On probation	2,937	33.0
Other diversion	180	2.0
Incarcerated	43	0.5
Awaiting trial, charges or sentencing	85	1.0
Current Living Arrangements		
Homeless	3,126	35.1
Dependent Living	2,350	26.4
Independent Living	3,423	38.5
Links to public assistance program		
Medi-Cal beneficiary	1,930	21.7
California Work Opportunity and Responsibility to Kids (CalWORKs), Parolee Services Network (PSN), Female Offender Treatment Program (FOTP)	412	4.6
Drug Use Factors		
Primary Drug		
Prescription opiates	83	0.9
Heroin/Other Opiates	1,617	18.2
Cocaine/Crack	1,439	16.2
Methamphetamine	2,352	26.4
Alcohol	2,847	32.0
Marijuana	487	5.5
Benzodiazepines	6	0.1
Other	68	0.8

Injection Drug Use	1,945	21.9
Treatment Factors		
Treatment Service Type/Modality		
Outpatient	3,727	41.9
Residential (30 days or less)	199	2.2
Residential (31 days or more)	1,873	21.1
Detoxification	2,136	24.0
Narcotic Treatment Program Detoxification	414	4.7
Narcotic Treatment Program Maintenance	550	6.2
Source of Referral		
Self	3,281	36.9
Substance Abuse Crime Prevention Act (SACPA)	2,109	23.7
Non-SACPA Criminal Justice Service	1,330	15.0
Other	2,179	24.5
Health Factors		
Lifetime Mental Illness Diagnosis	2,553	28.9
Has a disability	6,334	71.6
Sexually Transmitted Disease	332	3.8

Table 15: Medi-Cal Beneficiary Clients *(N*=61,597)

Variable	*n*	% Yes
Sociodemographic Characteristics		
Mean age (years)	61,597	32.7±14.1
Race		
White/ Non-Hispanic	22,610	36.7
Hispanic/Latino	22,630	36.7
Black/African American	11,946	19.4
Asian/Pacific Islander	1,299	2.1
American Indian/Alaska Native	1,001	1.6
Other	2,111	3.4
Education		
Highest Grade Complete	61,379	10.9
Less than high school	33,250	54.2
High School	20,078	32.7
Some College/Graduate School	8,051	13.1
Criminal Justice Status		
No criminal justice involvement	35,885	58.3
Any criminal justice status	25,702	41.7
Under parole supervision	3,238	5.3
On probation	20,308	33.0
Other diversion	1,018	1.7
Incarcerated	340	0.6
Awaiting trial, charges or sentencing	798	1.3
Current Living Arrangements		
Homeless	7,919	12.9
Dependent Living	31,027	50.4
Independent Living	22,651	36.8
Veteran Status	1,930	3.2
Links to public assistance program		
California Work Opportunity and Responsibility to Kids (CalWORKs), Parolee Services Network (PSN), Female Offender Treatment Program (FOTP)	7,089	11.5
Drug Use Factors		
Primary Drug		
Prescription opiates	598	1.0
Heroin/Other Opiates	10,413	16.9
Cocaine/Crack	5,623	9.1
Methamphetamine	17,358	28.2
Alcohol	12,634	20.5
Marijuana	13,915	22.6
Benzodiazepines	59	0.1
Other	997	1.6

Injection Drug Use	10,876	17.7
Treatment Factors		
Modality		
Outpatient	42,685	69.3
Residential (30 days or less)	687	1.1
Residential (31 days or more)	6,491	10.5
Detoxification	4,242	6.9
Narcotic Treatment Program Detoxification	1,843	3.0
Narcotic Treatment Program Maintenance	5,649	9.2
Source of Referral		
Self	21,311	34.6
Substance Abuse Crime Prevention Act (SACPA)	8,133	13.2
Non-SACPA Criminal Justice Service	11,778	19.1
Other	20,375	33.1
Health Factors		
Lifetime Mental Illness Diagnosis	18,555	30.3
Sexually Transmitted Disease	2,391	5.1

CHAPTER 3: CALOMS TREATMENT UTILIZATION FACTORS

In June 2007, UCLA contracted with ADP to evaluate the California Outcome Measurement System (CalOMS). This chapter focuses on treatment utilization data collected from CalOMS during fiscal year June 2006 through July 2007 and has 12 sections. The first section describes the key highlights of the chapter. The second section describes treatment admissions by service type/modality. The third section provides information on treatment service utilization by sociodemographic factors. The fourth section provides information on treatment service utilization by drug use factors. The fifth section provides information on treatment service utilization by priority groups. The sixth section describes treatment admissions by referral source. The seventh section provides information on treatment referral source by sociodemographic factors. The eighth section provides information on treatment referral source by priority groups. The ninth section provides information on treatment referral source by drug use factors. The tenth section describes treatment admissions by links to public assistance programs. The eleventh section provides information on links to public assistance programs by sociodemographic factors. The twelfth section provides information on links to public assistance programs by priority groups. The thirteenth section provides information on links to public assistance programs by drug use factors. The final section provides a summary. A glossary of terms is provided at the end of the chapter that defines the measures used.

Annually, the indirect and direct economic burden of drug abuse on society, including death, missed and impaired work, incarceration, medical care, drug treatment, crime and law enforcement, is estimated to be $294 billion (Coffey et al., 2002), which exceeds the estimated annual $120 billion cost of heart disease and the annual $110 billion cost of cancer (Laine et al., 2001). Statistics from the National Survey on Drug Use and Health (2004) show that the number of persons needing treatment for a problem with illicit drugs increased from 7.3 million to 8.1 million during 2003 to 2004. The survey also revealed that approximately 22.5 million persons in need of treatment (for both alcohol and drugs) did not receive it. Consequently, the results of neglecting to treat substance abuse include more violence and property crimes, prison expenses, court and criminal costs, emergency room visits, healthcare utilization, child abuse and neglect, lost child support, foster care and welfare costs, reduced productivity, and unemployment, costing the nation an estimated $77.6 billion per year (Mark et al., 2000).

Treatment for substance use disorders[22] is provided in distinct program settings, each of which have arisen from and are tied to distinct philosophical traditions and treatment orientations. Over the past 30 years, these settings have evolved as major modalities of treatment rooted on a shared belief that a substance use disorder (referred to as an “addiction”) is a complex chronic disorder associated with pervasive health, social, and economic consequences that requires differential treatment (NIDA, 2006).

During the past decade, the local landscape of treatment for substance use disorders has changed dramatically. The conceptualization of substance dependence has shifted from being seen as an acute problem to being viewed as a chronic illness. Emerging problematic drug trends have surfaced, including the abuse of prescription and over-the-counter drugs, MDMA (Ecstasy) and GHB, and methamphetamine. Criminal justice linkages to treatment were established with drug courts and have been increased with the passage of Proposition 36 (Substance Abuse and Crime Prevention Act of 2000 [SACPA]), which allows nonviolent drug-involved offenders to choose treatment in lieu of incarceration. In addition, novel treatment “tools” have been developed for enhancing the quality of treatment, such as process improvement strategies (known as NIATx) and the use of evidence-based practices/programs.

[22]The term “substance use disorders” will be used interchangeably with “substance abuse” and “substance dependence” as these terms are used to define substance use disorders by the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition - DSM-IV (American Psychiatric Association, 1994). Because the data collected from CalOMS does not provide a diagnosis, it is not possible to specify abuse versus dependence. However, from information collected in CalOMS, it is clear that the large majority of individuals in treatment would certainly meet criteria for dependence.

CalOMS Treatment Data

Given existing treatment gaps and changes that have occurred over the past decades, this chapter examines treatment admission data (N=216,781)[23] for 168,670 unique clients[24] collected from the California Outcomes Measurement System (CalOMS) during fiscal year July 2006 to June 2007 to understand the scope of treatment services and utilization patterns in California. Because individuals with substance use disorders typically present for treatment with multiple, complex problems beyond their addiction problem, including family and interpersonal problems, psychological and medical health problems, social problems, educational and vocational deficits, problems with living situations, and legal involvement (McLellan et al., 1983), a comprehensive examination of treatment-seeking patterns (treatment type/modality, source of referral) and links to public assistance programs among client admissions[25] (including priority group[26]) is provided by key sociodemographic, health status, and drug use factors.

KEY HIGHLIGHTS

Key findings of CalOMS treatment utilization factors are highlighted below.

TREATMENT TYPE/MODALITY

Outpatient Treatment

- Outpatient treatment was the most common service type utilized (58.5%).
- A large proportion of outpatient client admissions reported methamphetamine as their primary drug problem (41.3%).
- Loss of child custody by court order and parental rights was reported by 12.8% and 4%, respectively, of client admissions to outpatient treatment—the second highest of all the treatment types/modalities.
- Among client admissions to outpatient treatment, 2.1% reported tuberculosis and 3.9% reported a sexually transmitted disease.
- About 19.8% of client admissions to outpatient treatment self-reported a lifetime diagnosis of a mental illness.

Residential Treatment (short-term, 30 days or less)

- About 36% of client admissions to short-term residential treatment programs reported methamphetamine as their primary drug problem; a large proportion indicated alcohol as their primary problem (27.3%).
- Of client admissions to short-term residential treatment, 33.5% were homeless or in dependent living situations (49.7%), i.e., they did not contribute to the cost of where they were living in any way.
- Approximately 23.9% of client admissions to short-term residential treatment self-reported a lifetime mental illness diagnosis.
- Client admissions to short-term residential treatment reported the second highest level of criminal justice involvement by way of spending time in jail (21.3%) in the month prior to treatment admission (averaging 3.3 jail days) compared to other treatment types/modalities.

Residential Treatment (long-term, more than 30 days)

- Methamphetamine was the most commonly reported primary drug problem among client admissions to long-term residential treatment (46%); 20% reported alcohol as their primary problem.

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[23] These numbers are preliminary and were the final "fixed data set" as of December 2007 used in the UCLA evaluation. As of December 2007 ADP reported 222,221 admissions for 172,401 unique clients.

[24] Of these unique clients, 80% had 1 admission, 14.6% had 2 admissions, 3.7% had 3 admissions, and the remaining 1.7% had 4 or more admissions.

[25] The unit of analysis for the results is based on admissions, not unique clients.

[26] Priority groups described in this chapter are individuals with criminal justice involvement, individuals with mental illness, injection drug users, the homeless, the disabled, and veterans.

- Compared to other treatment types/modalities, client admissions to long-term residential treatment had the highest proportions of child custody losses (14.4%) and terminated parental rights (5.2%).
- Client admissions to long-term residential programs reported the highest percentage of prison stays in the month before treatment admission (6.2%), averaging 1.5 days, than clients in other treatment type/modalities.
- Approximately 4.3% of client admissions to long-term residential programs reported having a sexually transmitted disease (STDs) - the highest rate for STDs among admissions by treatment types/modalities.

Detoxification (Non-NTP)

- Many client admissions to non-NTP detoxification reported alcohol as their primary problem (41.5%).
- Client admissions to non-NTP detoxification services had the highest rates of emergency room visits (20.8%) and overnight hospital stays (6.1%) in the month prior to admission compared to clients in other treatment types/modalities.
- Many client admissions to non-NTP detoxification programs reported infection with hepatitis C (10.3%).

Narcotic Treatment Program (NTP) Detoxification Services

- Appropriately, virtually all client admissions to NTP detoxification reported heroin/other opiates as their primary drug problem (98.4%), with injection as the most common route of administration (72.5%).
- Rates of infectious diseases among client admissions to NTP detoxification programs were 3.2% for tuberculosis and 20.4% for hepatitis C.

Narcotic Treatment Program (NTP) Maintenance Services

- Heroin/other opiates was the most common primary drug problem among client admissions to NTP maintenance (98.2%), with injection as the most common route of administration (76.9%).
- Client admissions to NTP maintenance reported the highest incidence of tuberculosis (4.6%) and hepatitis C (28.2%) compared to clients in other treatment types/modalities.
- A substantial proportion of client admissions to NTP maintenance programs reported some form of disability at admission (22.1%).
- A majority of NTP maintenance client admissions reported living independently (68.2%).

TREATMENT REFERRAL SOURCE

- Criminal justice agencies were the primary source of referral for primary methamphetamine- and alcohol-using client admissions, whereas most self-referrals were for primary heroin/opiate client admissions. Client admissions referred through “other” sources were for different clients reporting primary alcohol, methamphetamine, and marijuana use.

Self-Referral

- Many client admissions who entered treatment by self-referral reported heroin/other opiates (37.6%) as their primary drug problem.
- The majority of self-referred client admissions reported using their primary substance during the month before treatment entry (82.2%).
- The proportion of tuberculosis and hepatitis C reported among self-referred client admissions was 2.7% and 13.5%, respectively.

SACPA Criminal Justice Referral

- The majority of client admissions referred through SACPA reported methamphetamine as their primary problem (57.1%).
- Among client admissions referred through SACPA, 22.7% reported at least one arrest during the month prior to treatment admission.

- Many SACPA-referred client admissions reported spending time in jail (at least 1 day) before entering treatment (27.7%).
- About 6.5% of SACPA-referred client admissions reported not having custody of their children at admission.

Non-SACPA Criminal Justice Referral

- Most client admissions referred to treatment through non-SACPA criminal justice sources indicated methamphetamine (41.5%) as their primary problem.
- Non-SACPA criminal justice referred client admissions were likely to report spending at least one day in jail prior to entering treatment (26.4%), with an average of 4.9 days (during the last 30 days).
- Many non-SACPA criminal justice referred client admissions did not have custody of their children (18%) or parental rights (5%) upon entry into treatment.

Other Referral Sources

- Referrals from "other" sources were fairly evenly distributed for client admissions reporting primary alcohol (27.1%), primary methamphetamine (25.8%), and primary marijuana (20.4%) use.
- A high proportion of client admissions referred by other sources reported some form of disability (20.7%) and overnight hospital stays in the month before admission (5.6%).
- About 4.1% of clients referred through other sources reported past infection with sexually transmitted diseases.

LINKS TO PUBLIC ASSISTANCE PROGRAMS

- Many client admissions with links to public assistance programs reported methamphetamine as their primary drug of abuse (30.4%).
- Among client admissions with links to public assistance programs, 26.1% reported some form of disability. The most common disability was "mental."
- Emergency room visits in the month prior to treatment were reported by 12.4% of client admissions with links to public assistance programs.
- Hepatitis C infection was reported by 11.9% of client admissions with links to public assistance programs.

TREATMENT UTILIZATION BY SERVICE TYPE/MODALITY

Figure 1 displays treatment service utilization patterns among admissions for clients entering treatment in California during the fiscal year 2006-2007.

Outpatient Treatment

During the mid-1980s to early 1990s, much of the treatment for alcohol and drug dependence was offered in residential treatment settings (referred to as 28-day rehabilitation or long-term therapeutic communities). This situation has changed drastically since 2000 as the proportion of individuals treated in outpatient settings has become substantial; more than 85% of those seeking substance abuse treatment in California (Longshore et al., 2003). Based on CalOMS admission data, the majority of admissions were for clients entering outpatient settings (58.5%)[27]

Residential Treatment

There are two levels of residential treatment services examined in this chapter: short-term (30 days or less) and long-term (31 days or more). Clients in residential treatment are typically required to remain on the grounds where the program is held during their treatment stay, although passes may be provided for interactions with family or for work, depending on the program. Few client admissions (1.6%) were to short-term residential programs (1.6%), compared to admissions for long-term residential programs (17.3%).

[27]If clients entering NTP outpatient programs, the proportion of outpatient admissions increases.

Detoxification (Non-NTP)

Non-NTP detoxification consists of outpatient, non-hospital, and residential services conducted within a licensed facility approved by the State of California, Department of Alcohol and Drug Programs. Services that fall under "detoxification" are considered a stabilization phase of treatment that are designed for people who experience withdrawal symptoms following prolonged abuse of drugs. Detoxification may be defined as a process of medical care and pharmacotherapy that seeks to help the patient achieve abstinence and physiologically normal levels of functioning. Services can include physical examination and medical/drug history within 24 hours of admission including drug screening (urinalysis). In addition, a physician is available (on call) 24 hours a day, 7 days a week, and the attending physician must visit the client at least every 48 hours. Medications may be prescribed by a physician and, when necessary, psychiatric consultation is provided. Licensed facilities must comply with all federal and state statutory requirements and regulations, concerning the storage, prescription, and administration of narcotics or restricted dangerous drugs. These medical services are provided in addition to standard counseling services. Approximately 11.8% of admissions were for clients entering non-NTP detoxification programs.

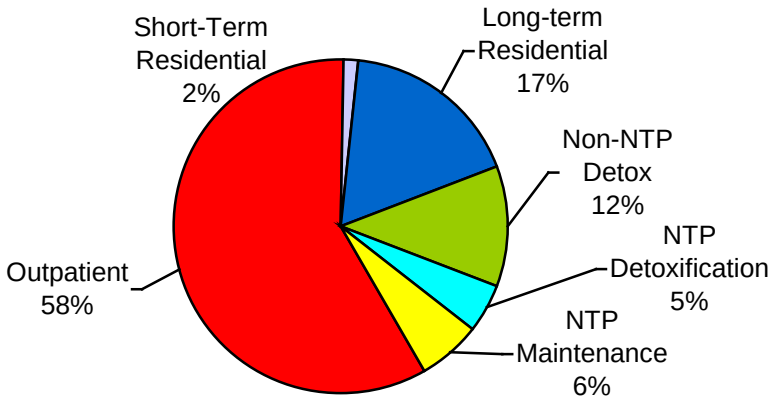
Narcotic Treatment Program (NTP)

There are two types of narcotic treatment programs examined in this chapter: detoxification and maintenance.

NTP Detoxification & Maintenance

NTP detoxification and maintenance consists of outpatient treatment services that administer or furnish methadone[28] for a period not exceeding 21 days, in order to allow an individual who is dependent on narcotic drugs such as heroin or other opiates to withdraw from the use of such drugs. Methadone, administered as an oral substitute narcotic drug, is typically accompanied by counseling and other ancillary social and medical services for persons who have a history of 2 or more years of dependence on heroin or opiates and 2 or more failures in alternative treatment programs. Approximately 4.7% of admissions were for NTP outpatient detoxification programs, and 6.1% admissions were for NTP maintenance programs.

Figure 1: Client Admissions by Treatment Type/Modality



Treatment Service Utilization by Sociodemographic Factors

Linkage with substance abuse treatment is impeded by numerous influences that serve as obstacles, or barriers, to obtaining treatment (Cunningham et al., 1993). Andersen's model of care utilization suggests

[28]Prescribed for withdrawal and dependence for narcotic drugs.

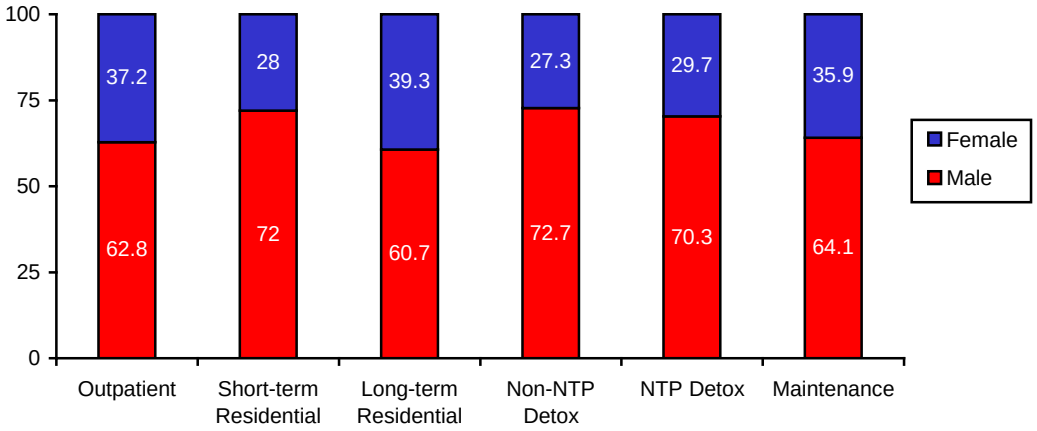
three categories of barriers: predisposing characteristics such as gender and age; situational/illness factors such as medical and mental health status; and social/economic inhibiting factors such as homelessness and lack of social support for change (Andersen, 1995). Table 1 describes treatment utilization across treatment type/modality by key sociodemographic factors.

Basic Demographic Characteristics

Research has shown that basic demographic factors, such as gender, age, and ethnicity may differentially affect treatment utilization patterns (Green-Hennessy, 2002).

Gender. Historically, women have faced different barriers to treatment than men (Bride, 2001; US DHHS, 2003). Not only do very few programs provide on-site childcare, the female representation in both treatment staff and administrators is often low, typically leaving females in social isolation during treatment (Nelson-Zlupko et al., 1995). Research has shown that drug-abusing women often feel they do not fit into traditional treatment modalities, resulting in fewer women seeking treatment (Bloom & Covington, 1998). Women in mixed-gender treatment programs, for example, tend to report a gender imbalance, as there are typically one or two females in a group of 10 or 12 members (Bloom & Covington, 1998). Research suggests that issues left unaddressed in co-ed groups may magnify a woman's feelings of guilt, shame, and failure (Hodgins et al, 1997), and that such mixed-group formats benefit men more so than women (Covington & Beckett, 1988). Males made up the majority of admissions in all modalities (Figure 2): outpatient (62.8%), short-term and long-term residential programs (72.0% and 60.7%), detoxification settings (72.7%), and NTP detoxification and maintenance (70.3% and 64.1%).

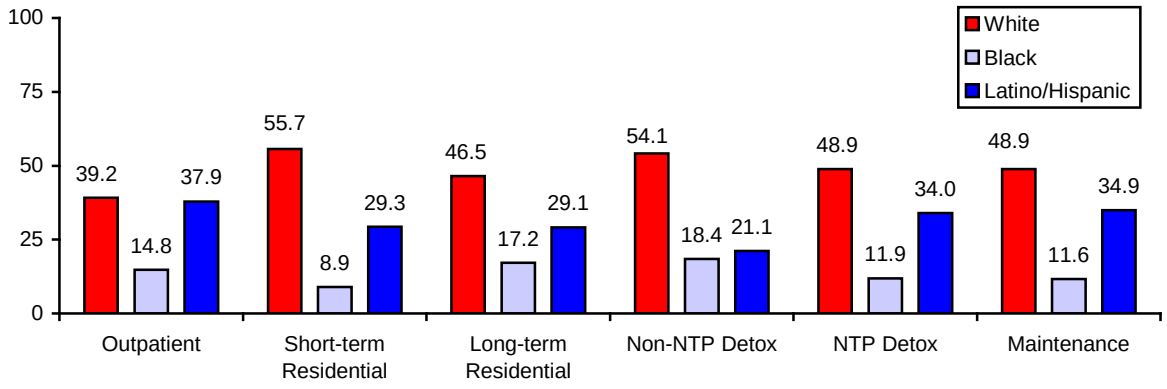
Figure 2: Treatment Utilization by Gender



Race/Ethnicity[29]. Research has shown that race/ethnicity is an important factor that can affect treatment utilization patterns (Snowden, 2001), including client perceptions of substance abuse problems and need for treatment, treatment system biases, and reliance on voluntary support networks. These factors have been shown to inhibit treatment utilization patterns among Asian, African American, and Hispanic substance-abusing populations (Dana, 2002; Wells et al., 2001). As shown in Figure 3, clients admitted to treatment were mostly white across modalities: short-term residential (55.7%), detoxification (54.1%), NTP detoxification (48.9%), NTP maintenance (48.9%), and long-term residential (46.5%). Clients entering outpatient and NTP maintenance programs had high rates of Latinos/Hispanics (37.9% and 34.9%). Long-term residential and detoxification programs had larger proportions of Black clients (17.2% and 18.4%) than other treatment types/modalities.

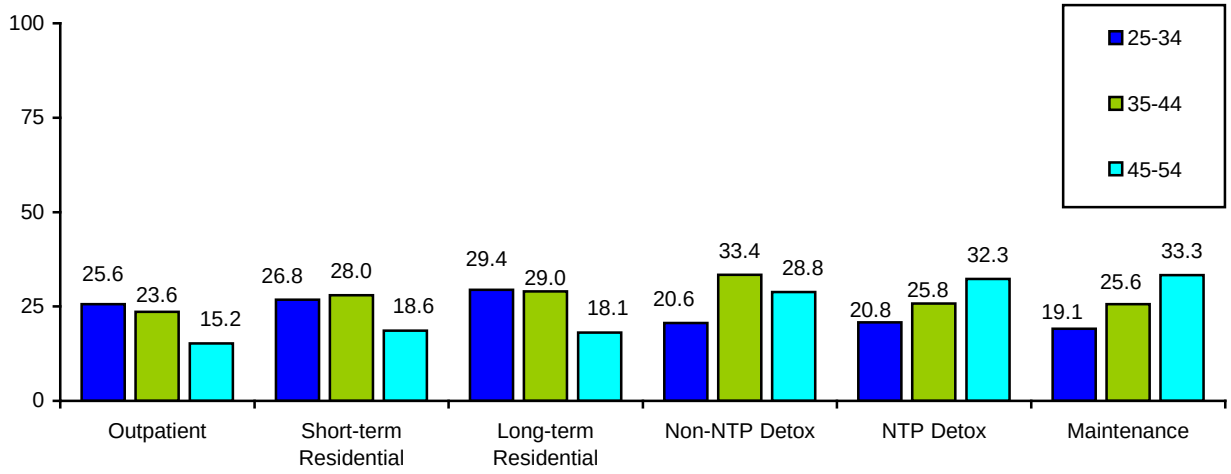
[29] CalOMS collects eight racial categories; however, for the purposes of this report, race categories were combined into six standard categories as described.

Figure 3: Treatment Utilization by Ethnicity/Race



Age. The likelihood of seeking treatment for substance abuse increases with age up to the mid-30s and then declines (OAS, 1998). In fact, older persons frequently have undiagnosed substance use disorders and, consequently, are underrepresented in treatment (Korper & Council, 2002). CalOMS admission data in Figure 4 show that clients admitted to NTP detoxification and maintenance programs were, on average, a few years older than those admitted to other treatment types/modalities. Specifically, 33.3% of NTP maintenance and 32.3% of NTP detoxification clients were between 45 and 54 years old. The 35- to 44-year-old group was most represented in residential short- and long-term programs (28% and 29%) as well as detoxification programs (33.4%). The two largest age groups in outpatient treatment were 25 to 34 year olds (25.6%) and 35 to 44 year olds (23.6%).

Figure 4: Treatment Utilization by Age



Employment & Education[30]

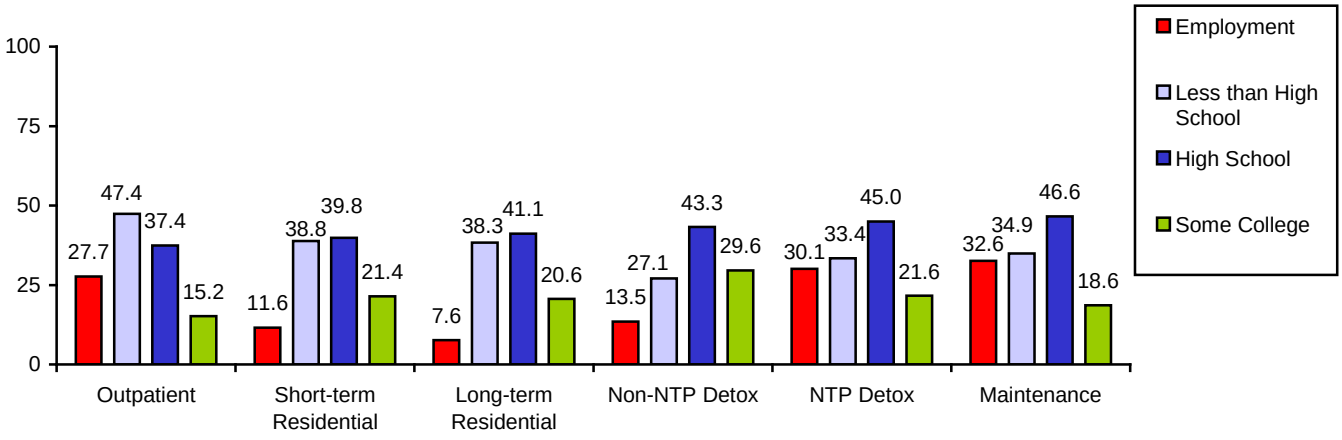
Studies have documented that socioeconomic indicators of employment and education are important factors that influence treatment service utilization among substance-abusing populations (Edlund et al., 2006). These two factors are typically inter-related and therefore difficult to explore separately (Edlund et al., 2006). Many studies have found strong correlations between lower educational attainment and unemployment with a need for treatment among those 25 years or older (Bachman et al., 1997). CalOMS admission data in Figure 5 show that clients entering NTP maintenance and NTP detoxification programs

[30] Statistics reported include admission data for youth under 18. Chapter 2 describes data specific to youth 12-17 on measures of employment and education.

reported the highest rates of employment (32.6% and 30.1%), followed by clients entering outpatient programs (27.7%). Fewer clients entering residential (both short-term and long-term) and detoxification programs reported being employed (11.6%, 7.6%, and 13.5%).

In terms of education, like employment, a greater proportion of clients entering detoxification programs completed high school (non-NTP: 43.3%, and NTP: 45%) or had attended some college or was a college graduate (non-NTP: 29.6%, and NTP: 21.6%) compared to the other modalities. Clients in NTP maintenance had the highest proportion of high school completion (46.6%) in relation to the other modalities. Most clients in outpatient programs did not finish high school (47.4%). Similarly, clients in residential (both short-term and long-term) had achieved less than a high school education (38.8% & 38.3%). Substance abuse has been implicated in the majority of school drop-out cases among youth populations (Kaufman and Chapman, 2000).

Figure 5: Treatment Utilization by Employment & Education



Living Arrangements

Living arrangements and residential stability influence substance use treatment utilization patterns (Johnson, Hoffman, & Gerstein, 1996). "Living situation" was measured as independent, dependent, or homeless.[31] Dependent living is defined as individuals who do not contribute to the cost of where they are living in any way, whereas independent living consists of individuals who own their home, rent/live alone, live with roommates and pay rent, or otherwise contribute financially to the cost of the home/apartment. CalOMS admission data reveal that clients admitted to NTP detoxification and maintenance programs had the highest proportion of independent living situations (64.6% and 68.2%) compared to the other modalities. Few clients entering residential programs (short- and long-term) lived independently (16.8% and 22.7%). Clients admitted to outpatient and short-term residential programs were more likely to report dependent living (50.0% and 49.7%) compared to the other treatment types/modalities. Similar proportions of clients in detoxification and NTP detoxification and maintenance programs lived in dependent situations (23.6%, 21.8%, and 25.6%).

Serious Family Conflict

There are immeasurable impacts of substance abuse that strain users' interpersonal relationships with their family. This is concerning since "family structure" greatly impacts treatment seeking and utilization patterns (Bachman et al., 1997). Many studies indicate that social and emotional support from family plays a significant role in treatment-seeking behavior (Baumrind, 1985; Maccoby, 1992). Serious family conflict (at least one day in the month before admission) was examined by treatment service

[31] Homelessness is defined as a priority group and discussed in the section below.

type/modality. CalOMS admission data indicated that clients in short-term residential programs were most likely to report serious family conflict (18.5%), followed by clients in detoxification and long-term residential programs (16.5% and 16.2%) and outpatient settings (11%). Clients in NTP detoxification and maintenance reported the lowest serious family conflict (7.0% and 7.3%).

Parental Status

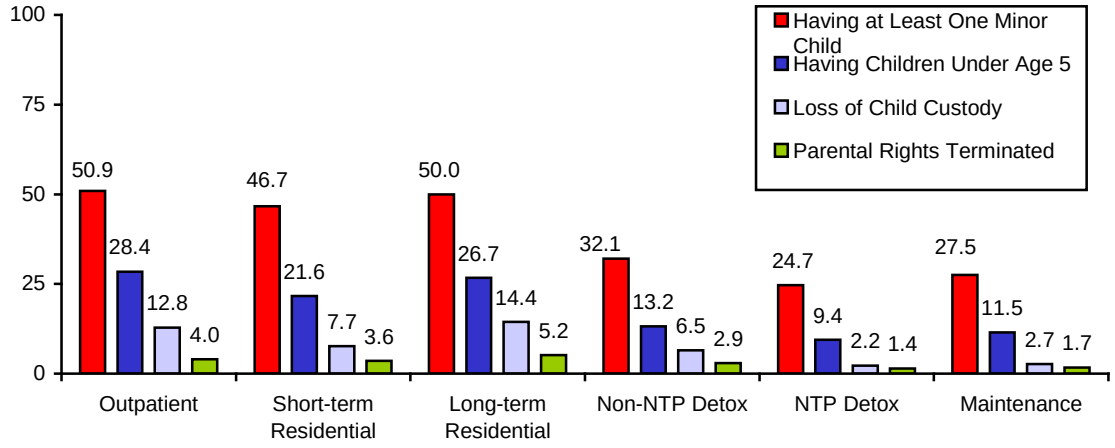
CalOMS admission data on parental status and dysfunction are displayed in Figure 6.

Two measures of parental status were examined by treatment type/modality, including: having at least one minor child (under 17) and having children under 5. Almost half of clients in outpatient and both residential treatment types reported having at least one minor child under the age of 17 (50.9%, 46.7%, and 50.0%). Fewer clients in detoxification and NTP programs (detoxification and maintenance) reported at least one minor child (32.1%, 24.7%, and 27.5%). The proportion of clients who had children under the age of 5 across treatment types/modalities was: 21.6% outpatient, 28.4% short-term residential, and 26.7% long-term residential; fewer clients in detoxification and NTP detoxification/maintenance reported children under the age of 5 (13.2%, 9.4%, and 11.5%).

Parental Dysfunction

Substance abuse often plays a major role in parental dysfunction (Burke et al., 2005), as children are at high risk for abuse and negligence as a result of the drug preoccupation, erratic behavior, and psychiatric instability of their substance-abusing parents. Two measures of parental dysfunction were examined by treatment type/modality: loss of child custody status due to a court mandate for children to live elsewhere and having parental rights terminated. Clients in long-term residential treatment reported the greatest proportion of custody loss (14.4%) or terminated parental rights (5.2%), followed by clients in outpatient treatment settings for custody loss (12.8%) and terminated parental rights (4%). Few clients receiving NTP detoxification and maintenance services reported a loss of custody of their child (2.2% and 2.7%) or loss of parental rights (1.4% and 1.7%)

Figure 6: Treatment Utilization by Parental Status & Dysfunction

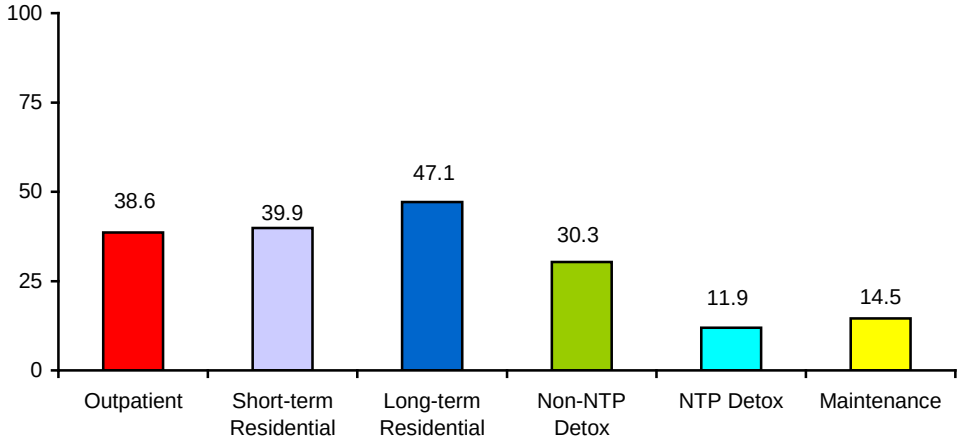


Involvement in Social Support

CalOMS admission data on social support involvement is displayed in Figure 7. Although many clients in outpatient and short-term residential treatment participated in some form of social support activity (38.6% and 39.9%) with an average of 5.2 and 4.7 days before admission, clients in long-term residential programs were more likely to report involvement in social support activities (47.1%), with an average of 6.7 days. Fewer clients in detoxification participated in some form of social support activity (30.3%), with

an average of 3.3 days. Clients in NTP maintenance and NTP detoxification were the least likely to report participation in some form of social support activity (14.5% and 11.9%), with fewer average days (1.8 and 1.2 days) compared to other treatment types/modalities.

Figure 7: Treatment Utilization by Social Support Involvement



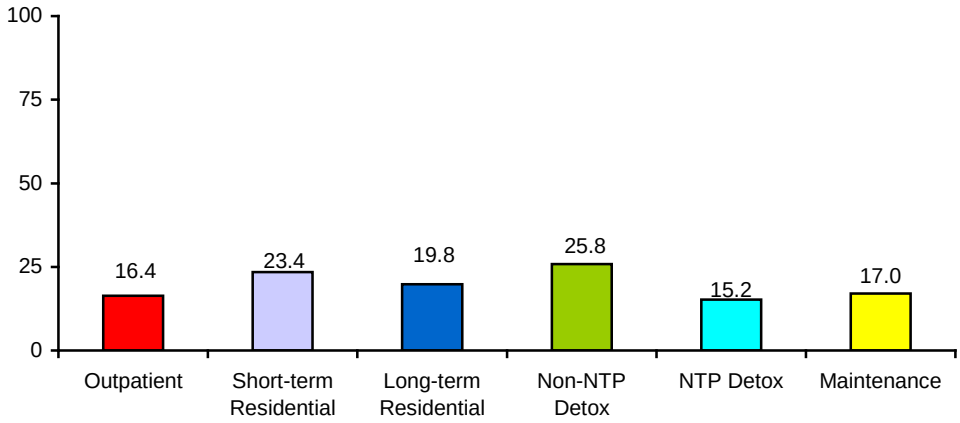
Treatment Utilization by Health Status Factors

Table 2 provides a description of treatment service types/modalities across health status factors.

Medical Problems

Substance abusers have complex health care needs (Laine et al., 2001). The physical consequences of substance use, and subsequent attention to the disorder by health care professionals, motivate some people to seek treatment (Weisner & Matzger, 2002). CalOMS admission medical-related data (Figure 8) indicated that clients in detoxification and short-term residential treatment were more likely to report experiencing at least one medical problem in the month before admission (25.8% and 23.4%) compared to other modalities. Medical problems among clients in long-term residential treatment were reported by 19.8% of clients at admission. A smaller proportion of clients in NTP detoxification and maintenance as well as outpatient treatment reported medical problems in the month prior to admission (15.2%, 17.0% and 16.4%).

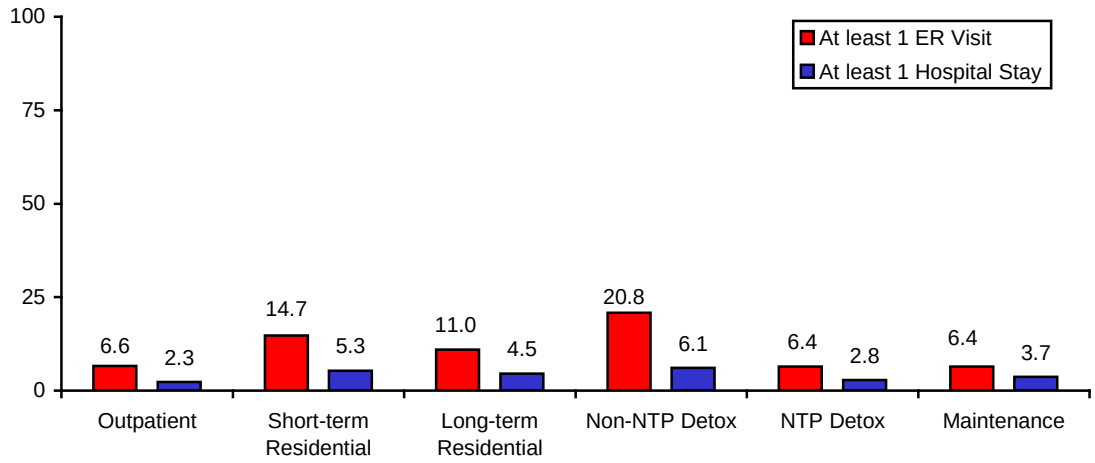
Figure 8: Treatment Utilization by Medical Problems



Medical Treatment

Many substance-abusing individuals typically seek medical care only when crises arise that require emergency department care or hospitalization (Kopstein, 1992). Stein and others (1993) found that substance abusers are twice as likely to visit an emergency department and nearly 7 times more likely to be hospitalized before seeking treatment. Figure 9 shows that detoxification clients were most likely to report visits to the emergency room (ER; 20.8%) and at least one hospital overnight stay (6.1%) in the 30 days prior to treatment than those in other modalities, followed by clients in short-term residential treatment (14.7% past ER visits and 5.3% overnight hospital stays). About 11% of clients in long-term residential programs had visited an ER and 4.5% had at least one overnight hospital stay in the 30 days prior to admission. Fewer clients in both NTP detoxification and maintenance reported visits to the ER or overnight hospital stays in the month prior to admission (6.4% and 2.8%) and (6.4% and 3.7%), respectively. Outpatient clients also reported few ER visits and hospital stays during the 30 days prior to admission (6.6% and 2.3%).

Figure 9: Treatment Utilization by Past Month Medical Treatment

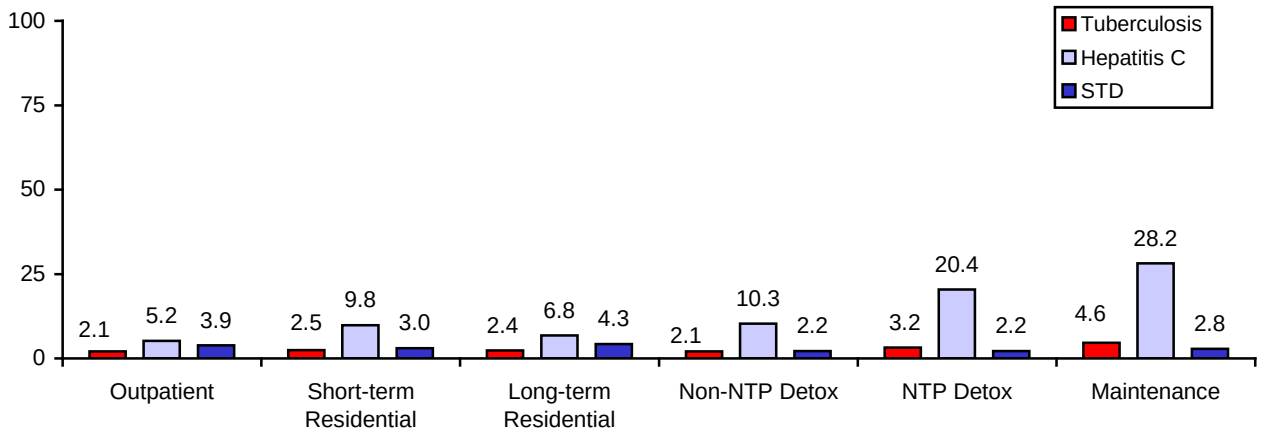


Infectious Disease Status

The burden of infectious diseases among substance abusing populations in the treatment system is a serious public health concern (Gonzales et al., 2006). Research shows that substance-abusing individuals with infectious diseases may require specialized treatment to address these complex health issues and that they may complicate adherence to treatment programs (Harwood et al., 1998). However, studies indicate that "successful drug abuse treatment" for individuals with such medical co-morbidities can help reduce the spread of HIV/AIDS, hepatitis, and other infectious diseases (NIDA, 2006).

CalOMS admission data on infectious disease status is displayed in Figure 10. As shown, clients in NTP maintenance reported the highest proportions of past infection with tuberculosis (TB; 4.6%) and hepatitis C (28.2%); clients in NTP detoxification reported the second highest proportion of TB (3.2%) and hepatitis C (20.4%), compared to other treatment modalities. Reports of TB and hepatitis C were fairly similar among clients entering short-term, long-term, and detoxification residential programs (short-term: 2.5% and 9.8%; long-term: 2.4% and 6.8%; and non-NTP detoxification: 2.1% and 10.3%). The proportions of TB and hepatitis C among clients entering outpatient treatment were relatively low at 2.1% and 5.2%, compared to the other modalities. Reports of sexually transmitted diseases (STDs) were highest in long-term residential clients (4.3%), followed by outpatient (3.9%) and detoxification (including NTP) clients (2.2% and 2.2%) and NTP maintenance (2.8%).

Figure 10: Treatment Utilization by Infectious Disease Status



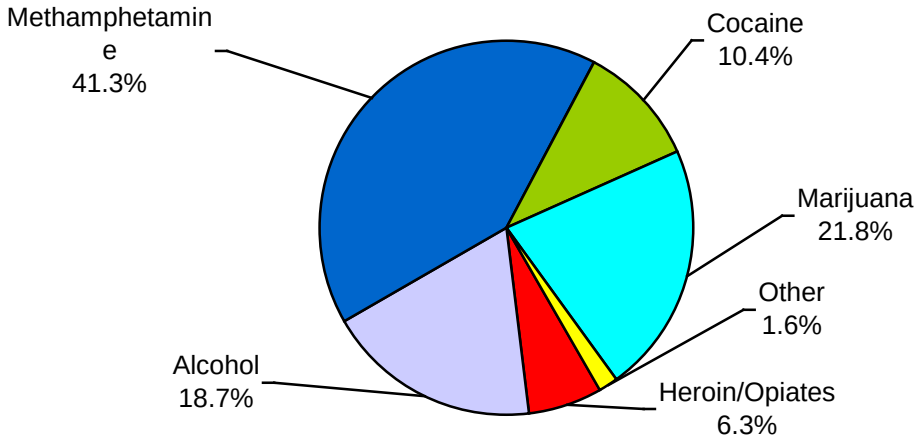
Treatment Utilization by Drug Use Factors

Substance-abusing individuals typically have varying drug use profiles that differentially affect treatment utilization patterns. Table 3 provides a description of treatment utilization patterns by drug use factors.

Outpatient Treatment[32]

Primary Substance Use. Figure 11 shows primary substance use reported by clients entering outpatient treatment. The majority of clients receiving treatment in outpatient settings reported methamphetamine as their primary substance of abuse (41.3%). The second and third most commonly reported primary substances among outpatient clients were: marijuana (21.8%) and alcohol (18.7%). Primary cocaine/crack (10.4%) and heroin/opiate use (6.3%) were reported less frequently among outpatient clients. Among outpatient clients, the average age of first use of the primary substance, regardless of the substance, was 19.4 years. A large proportion of clients in outpatient programs reported use of their primary substance during the 30 days prior to admission (52.2%). Many of those with no use were clients referred by the criminal justice system who were in a controlled environment (e.g., jail, prison) or were transferred from detoxification services.

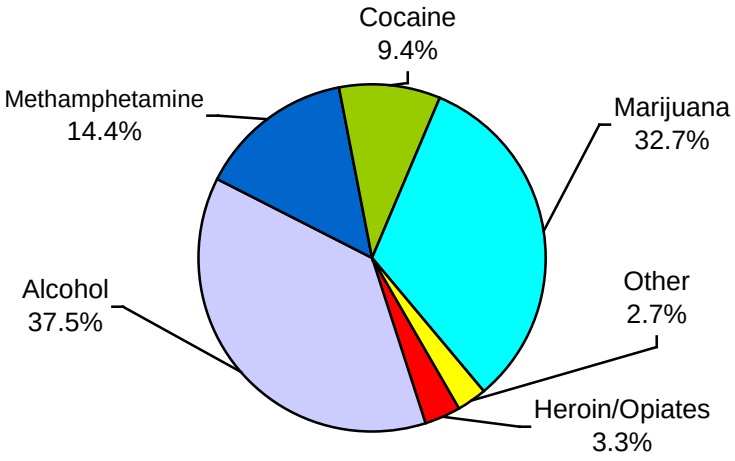
Figure 11: Primary Substance Use in at Outpatient Treatment



[32] NTP "outpatient" clients are not included in these analyses.

Secondary Substance Use. As shown in Figure 12, the two most reported secondary substance problems among outpatient clients were alcohol and marijuana (37.5% and 32.7%), followed by the stimulants methamphetamine (14.4%) and cocaine/crack (9.4%). Few outpatient clients reported primary heroin/opiate secondary use (3.3%). The mean age of first use of the secondary substance, regardless of the substance was 17.6 years.

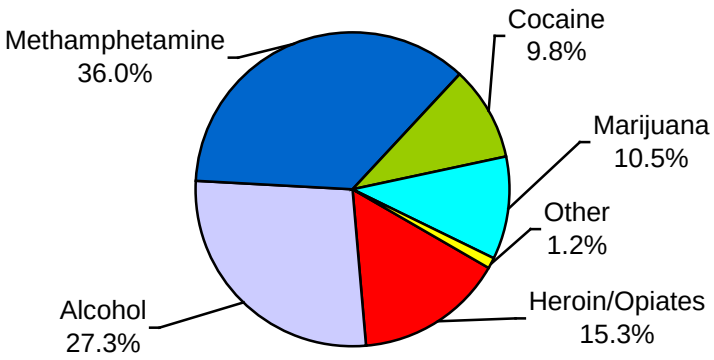
Figure 12: Secondary Substance Use in Outpatient Treatment



Residential Short-Term (30 days or less)

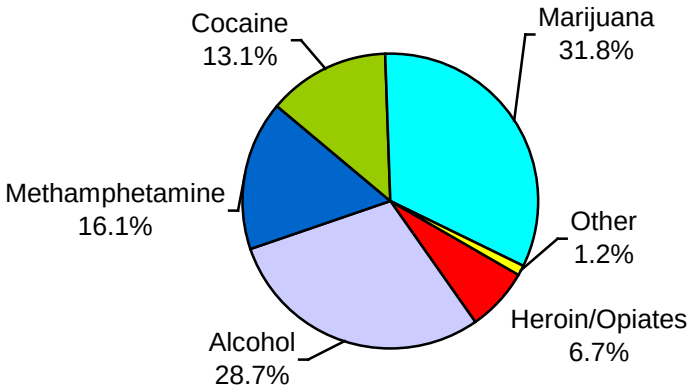
Primary Substance Use. Figure 13 displays the primary substance problem reported by clients entering short-term residential treatment. Many of these clients reported methamphetamine as their primary substance (37%). A large proportion also reported primary alcohol use (27.3%). Primary heroin/opiate use was reported by 15.3%, and fewer reported primary cocaine/crack or primary marijuana use (9.8% and 10.5%). The majority of clients in short-term residential programs reported using their primary substance during the prior 30 days (78.7%). The mean age of first use of the primary substance reported by short-term residential treatment clients, regardless of the substance, was 19 years.

Figure 13: Primary Substance Use in Short-Term Residential



Secondary Substance Use. Figure 14 displays secondary substances reported by clients entering short-term residential treatment. Substances identified as common secondary problems for short-term residential clients included marijuana (31.8%) and alcohol (28.7%). Stimulants, methamphetamine, and cocaine/crack were reported as secondary problems by 16.1% and 13.1%. Few short-term residential clients reported primary heroin/opiate use (6.7%). The mean age of first use of the secondary substance reported by short-term residential clients, regardless of the substance, was 18 years old.

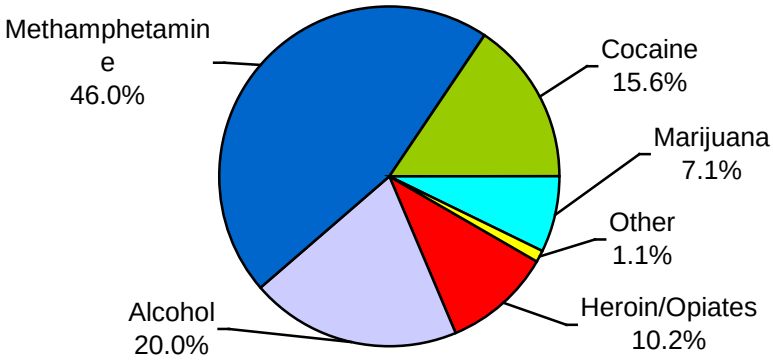
Figure 14: Secondary Substance Use in Short-Term Residential



Residential Long-Term (31 days or more)

Primary Substance Use. As shown in Figure 15, most clients entering long-term residential treatment reported methamphetamine (46%) as their primary drug problem. Primary alcohol use was reported by 20%, approximately 15.6% reported primary cocaine/crack use, 10.2% heroin/opiates, and 7.1% marijuana. The majority of clients entering long-term residential programs reported using their primary substance at some point during the prior 30 days (64%). The mean age of first use of the primary substance, regardless of the substance, was 19.5 years.

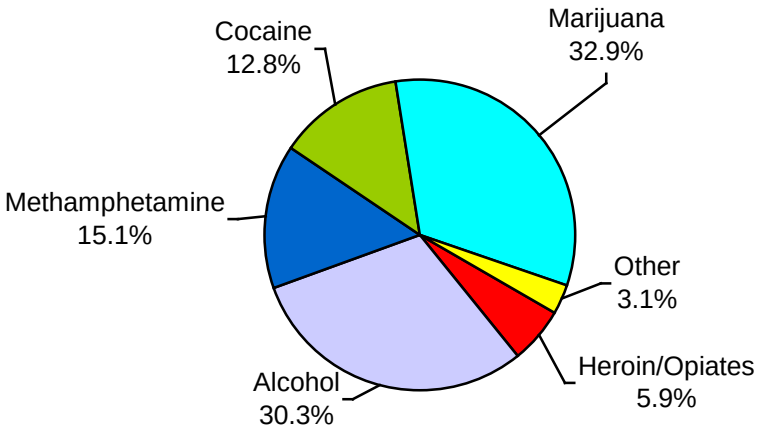
Figure 15: Primary Substance Use in Long-Term Residential



Secondary Substance Use. Figure 16 displays secondary substances reported by clients entering long-term residential treatment. Long-term residential clients reported marijuana and alcohol most frequently as secondary substance problems (32.9% 30.3%). Methamphetamine and cocaine/ crack were reported as secondary drug problems by 15.1% and 12.8%. Few long-term residential clients reported primary

heroin/opiate use (5.9%) at admission. The mean age of first use of the secondary substance, regardless of the substance, was 18 years.

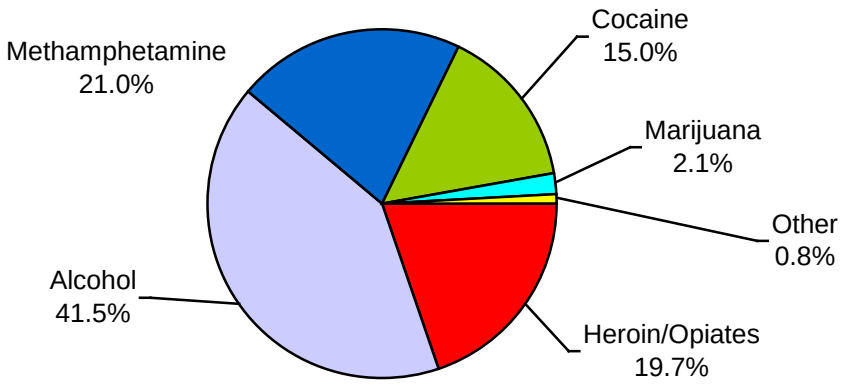
Figure 16: Secondary Substance Use in Long-Term Residential



Detoxification (Non-NTP)

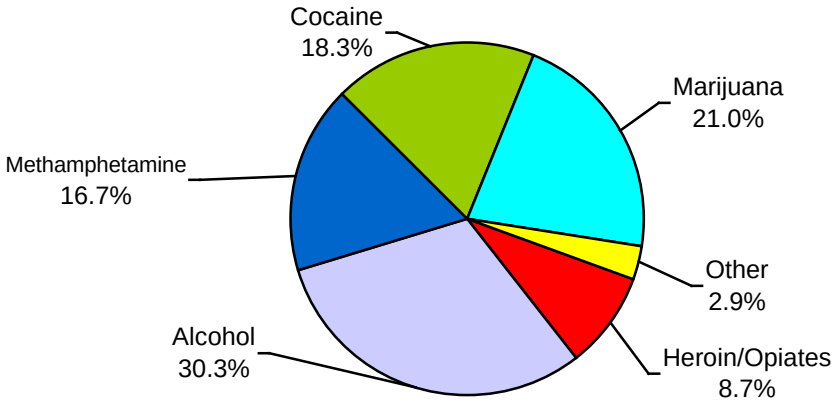
Primary Substance Use. As shown in Figure 17, the most common primary substance reported among clients entering detoxification programs was alcohol (41.5%). Primary methamphetamine and heroin/opiate use were commonly reported by detoxification clients (21% and 19.7%). About 15% of clients entering detoxification programs reported primary cocaine/crack use, and a small percent reported marijuana use (2.1%). The majority of detoxification clients reported using their primary substance during the prior 30 days (97.2%). The mean age at first use of the primary substance, regardless of the substance, was 19.4 years.

Figure 17: Primary Substance Use in Non-NTP Detoxification



Secondary Substance Use. Figure 18 displays the substances identified as secondary problems for detoxification clients. As shown, alcohol (30.3%) and marijuana (21%) were reported most frequently by detoxification clients, followed by the stimulants methamphetamine and cocaine/crack (16.7% and 18.3%). Primary heroin/opiate use was reported by 8.7%, and "other" (substances) was reported by 2.9%. The mean age at first use of the secondary substance, regardless of the substance, was 19.2 years.

Figure 19: Secondary Substance Use in Non-NTP Detoxification

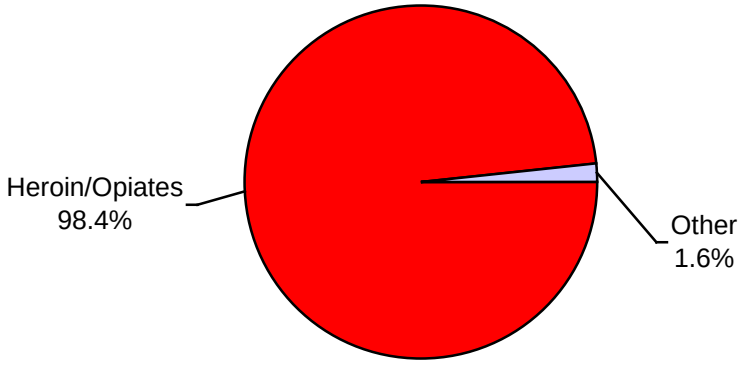


Narcotic Treatment Program (NTP)

NTP Detoxification

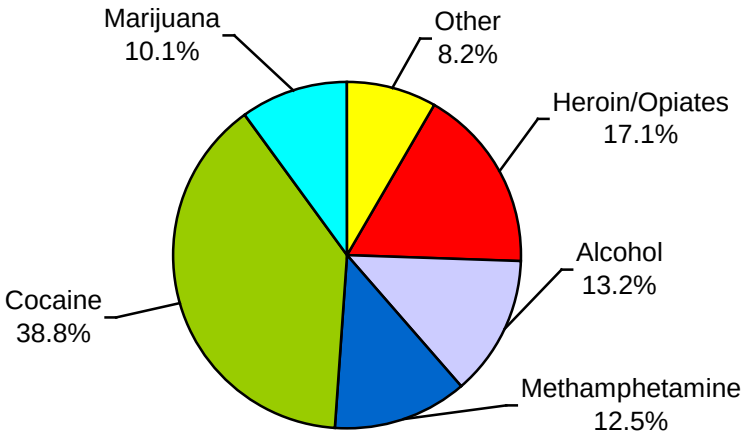
Primary Substance Use. As shown in Figure 20, almost all the clients entering NTP detoxification programs reported heroin/opiates as their primary substance problem (98.4%). All other drugs accounted for less than 1% of the admissions to NTP detoxification services. The majority of NTP detoxification clients reported using their primary substance at some point during the prior 30 days (97.4%), and the mean age of first use of the primary substance was 22.9 years.

Figure 20: Primary Substance Use in NTP Detoxification



Secondary Substance Use. Figure 21 displays the substances identified as secondary problems among NTP detoxification clients, from highest to lowest reported: cocaine/crack (38.8%), heroin/opiates (17.1%), alcohol (13.2%), methamphetamine (12.5%), and marijuana (10.1%). The mean age at first use of the secondary substance reported by NTP detoxification clients, regardless of the substance, was 22.3 years.

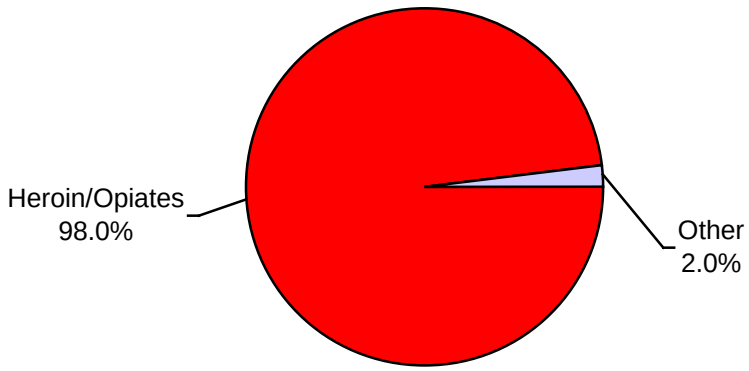
Figure 21: Secondary Substance Use in NTP Detoxification



NTP Maintenance

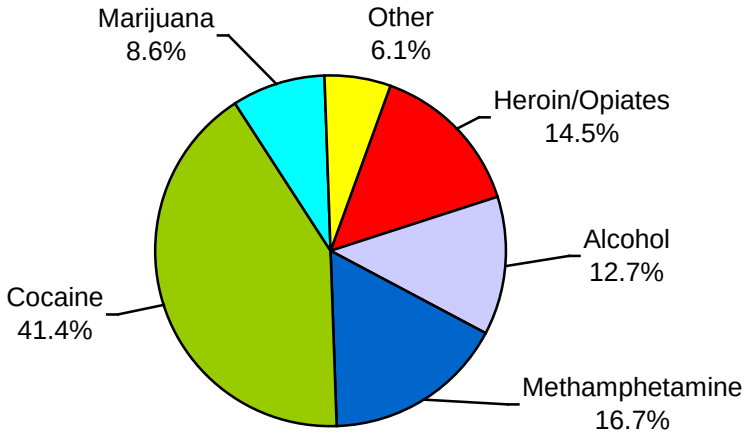
Primary Substance Use. Like NTP detoxification, the majority of clients admitted to NTP maintenance reported heroin/opiates as their primary problem (98.2%); all other substances accounted for less than 1% (Figure 22). The majority of NTP maintenance clients reported using their primary substance during the prior 30 days (85.2%), and the mean age at first use of the primary substance was 22 years.

Figure 22: Primary Substance Use in NTP Maintenance



Secondary Substance Use. As shown in Figure 23, the most commonly reported substances identified as the secondary drug for NTP maintenance clients ranged from cocaine/crack (41.4%), methamphetamine (16.7%), heroin/opiates (14.5%), alcohol (12.7%), and marijuana (8.6%). The mean age at first use of the secondary substance for these clients, regardless of the substance, was 22.3 years.

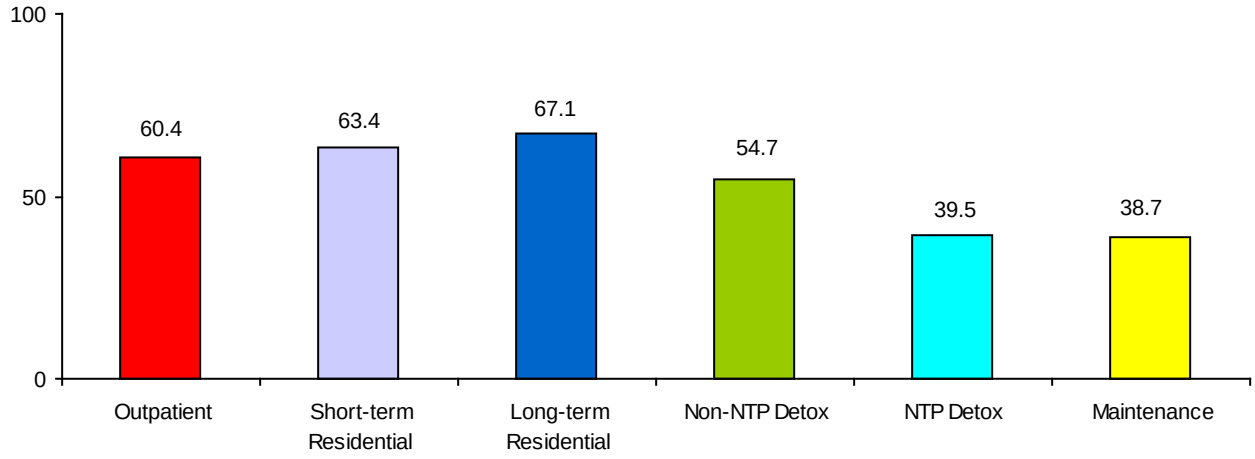
Figure 23: Secondary Substance Use in NTP Maintenance



Polydrug Use by Treatment Type/Modality

Polydrug use, which is highly prevalent among clients in treatment services (Swan & Ritter, 2001), is considered to be a major challenge for drug treatment programs (Anglin et al., 2007). For purposes of analysis, primary plus secondary substance use was assessed as a proxy for polydrug[33] use (Figure 24). According to CalOMS admission data, clients entering long-term residential programs were most likely to report polydrug use (use of both a primary and a secondary drug) at admission (67.1%). A large proportion of clients entering short-term residential and outpatient programs also reported polydrug use at admission (63.4% and 60.4%). Slightly over half (54.7%) of clients entering detoxification programs reported polydrug use at admission. Clients entering NTP programs (detoxification and maintenance) were less likely to report polydrug use than those in the other treatment types/modalities (39.5% and 38.7%). This latter finding is questionable, as most research indicates that polydrug use appears to be widespread among heroin users entering methadone programs, especially the use of alcohol and other opiates such as benzodiazepines (Ball & Ross, 1991; Darke et al. 1994b; Hser et al., 2001).

Figure 24: Treatment Type/Modality by Polydrug Use



[33] Polydrug use refers to the concurrent use of multiple drugs or the combining of drugs.

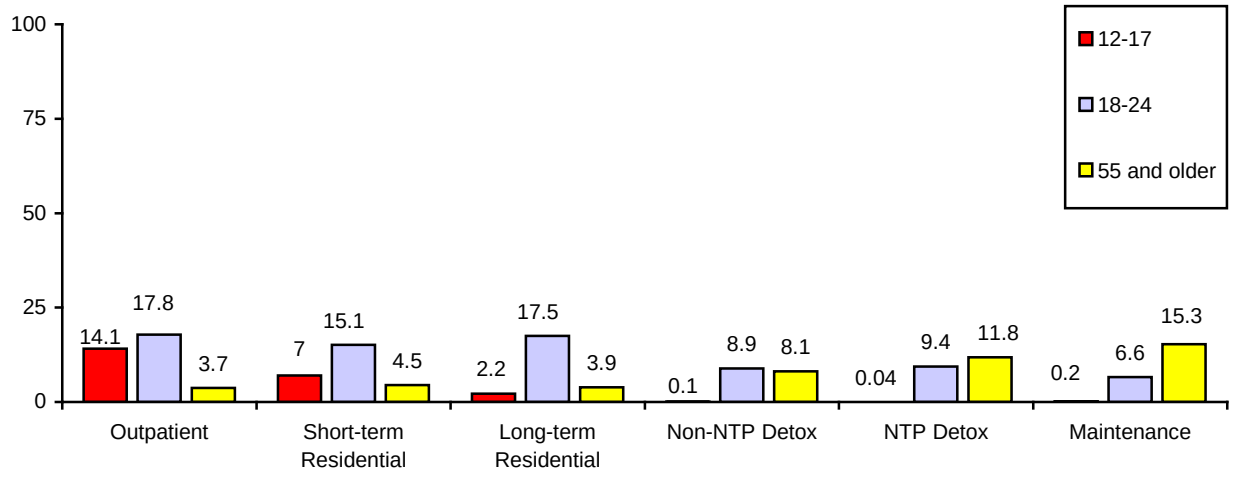
Treatment Utilization by Priority Groups

From a public health perspective, treatment plays an important part of reducing substance abuse for priority groups as it can also serve to address the multiple health, social, and economic harms they face. As drug treatment research historian Doug Anglin stated, "Investing dollars in treatment to effectively address the nation's drug problem as well as tackle the many health and social complexities of special drug abusing populations is not only good public health practice, but it is good economic practice as well" (personal communication, 2007). Table 4 provides a description of treatment utilization patterns by priority groups.

Priority Age Groups

As shown in Figure 25, older age admissions (those aged at least 55) were most represented in NTP programs: maintenance - 15.3%, and detoxification - 11.8%. These two modalities had few clients in the youngest age category 12–17 (0.2% and 0.04%). Clients under 17 years old were most represented in outpatient treatment (14.4%). Similarly, young adult client admissions (18-25) were most represented in outpatient (17.7%) as well as residential programs (short-term: 15.1%, and long-term: 17.5%). In contrast, residential and outpatient programs had few 55-and-older client representation (short-term: 1.6%; long-term: 3.9%; outpatient: 3.7%).

Figure 25: Treatment Utilization by Priority Age Groups



Individuals with Criminal Justice Involvement

The criminal justice system for both adult and juvenile offenders is confronted with drug-related problems daily (Anglin et al., 1983). Studies from the SACPA evaluation have shown that treatment for criminally involved substance users can help reduce crime and that for every dollar spent on addiction treatment programs there is a $4 to $7 reduction in the societal costs of drug-related crimes. In the CalOMS data set, approximately 50.1% of admissions into outpatient treatment were of clients who were on probation, and 5.6% were under parole supervision. About 37.3% of clients entering short-term residential were on probation and 15.6% were under parole. Approximately 17.1% of clients in long-term residential treatment reported being on parole and 41.1% on probation. A small percentage of detoxification (including NTP) clients were on probation or parole (detoxification: 17.3% and 9.0%, respectively) and (NTP detoxification: 8.2% and 7.8%). A small percentage of NTP maintenance clients were on probation or parole (8.7% and 7.1%).

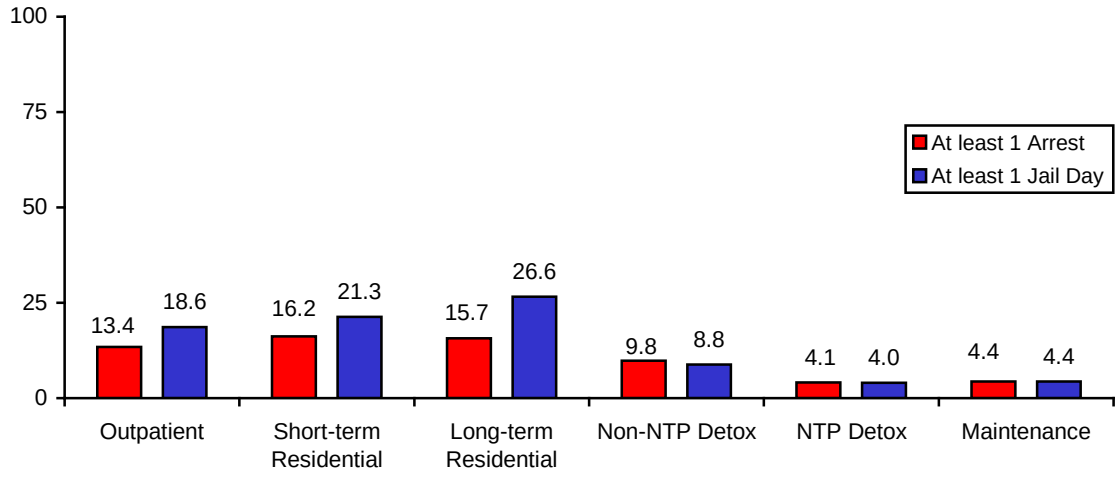
There are substantial costs to substance abusers in terms of arrests and jail and prison sentences, which have an impact on treatment utilization patterns (Iguchi et al., 2002). For example, a prison or jail sentence can result in a loss of access to immediate treatment services needed by drug-dependent offenders. In addition, the lengthy incarceration process associated with drug-related offenses further

delays treatment utilization. CalOMS admission data on individuals with criminal justice involvement in the past month are displayed in Figure 26.

Arrests in Past 30 Days. At admission, clients entering residential (short-term and long-term) reported the highest proportions of arrests in the past 30 days (16.2% and 15.7%) compared to the other modalities. Approximately 13.4% of outpatient clients reported arrests in the past month at admission, followed by detoxification clients (9.8%). Clients entering NTP maintenance and detoxification programs were least likely to report arrests in the past month (4.4% and 4.1%).

Jail & Prison in Past 30 Days. Similar to trends observed in past arrests, higher proportions of clients in residential treatment (long- and short-term) reported past month jail and prison time (jail: 26.6% and 21.3%; prison: 6.2% & 3.7%). Likewise, 18.6% of outpatient clients spent time in jail and 1.9% spent time in prison, followed by detoxification clients (jail: 8.8% and prison: 1.3%). Few clients entering NTP detoxification and maintenance reported spending time in jail or prison during the month before treatment admission (jail: 4.0% and 4.4%; prison: 0.7% and 0.9%).

Figure 26: Treatment Utilization by Individuals with Criminal Justice Involvement

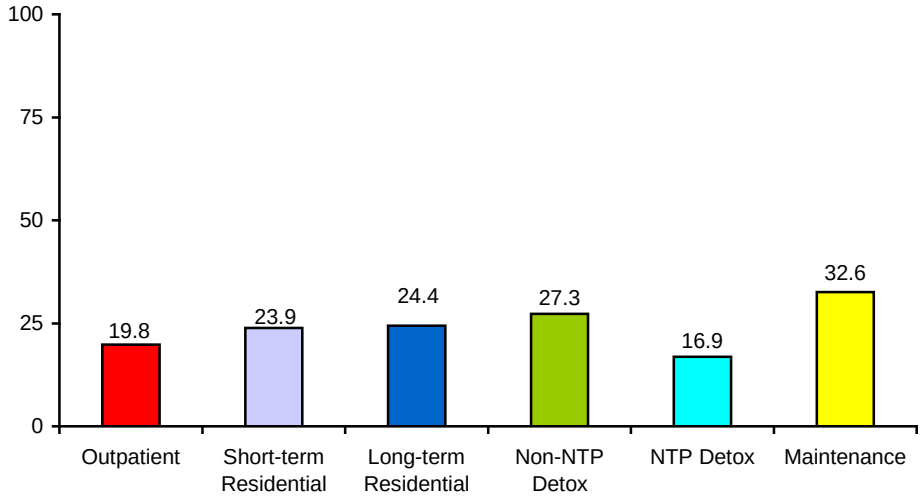


Individuals with Lifetime Mental Illness

Individuals with co-occurring mental health problems typically present for treatment because they can no longer cope with such psychological distress (Kessler et al., 2001). Psychodynamic theory posits that substance abuse is often a form of "self-medication" to relieve symptoms of psychological distress (Khantzian, 1985). Researchers are searching for the most effective way to treat drug abusers with mental illness, and they are studying whether treating both conditions simultaneously leads to better recovery. Currently, the two conditions often are treated separately or without regard to each other. As a result, many individuals with co-occurring disorders are sent back and forth between substance abuse and mental health treatment settings. Using a CalOMS measure collected at admission that asks clients if they have ever been diagnosed with a mental illness,[34] it was found that clients in detoxification programs reported the highest rates of lifetime mental illness (27.3%), followed by those in both long- and short-term residential programs (24.4% and 23.9%). Relatively similar proportions of clients in outpatient and NTP maintenance reported a lifetime mental illness (19.8% and 18.7%). Clients in NTP detoxification programs were least likely to report a lifetime mental illness diagnosis (16.9%) compared to other treatment types/modalities. CalOMS admission data on lifetime mental illness status is displayed in Figure 27.

[34] The accuracy of these data is unknown as there was no psychiatric assessment conducted on clients entering treatment. Given this limitation, these data reflect a very rough indicator of this issue.

Figure 27: Treatment Utilization by Individuals with Lifetime Mental Illness



Injection Users

Persons who inject drugs face particular barriers when seeking treatment or accessing treatment. The literature suggests that this group is difficult to treat and may require differential care given their inability to comply with prescribed treatment regimens (Burnam et al., 2001). As shown in Figure 28, the majority of clients in NTP detoxification and maintenance programs injected their primary drug (72.5% and 76.9%). The proportion of clients in residential detoxification programs who reported injecting their primary drug was 18.5%. About 16.8% of clients entering long-term residential programs reported injecting their primary drug (16.8%). Approximately, 14.4% of short-term residential clients injected their primary drug. Clients in outpatient treatment were least likely to inject their primary substance of use (8.3%).

Figure 28: Treatment Type/Modality by Injection Use

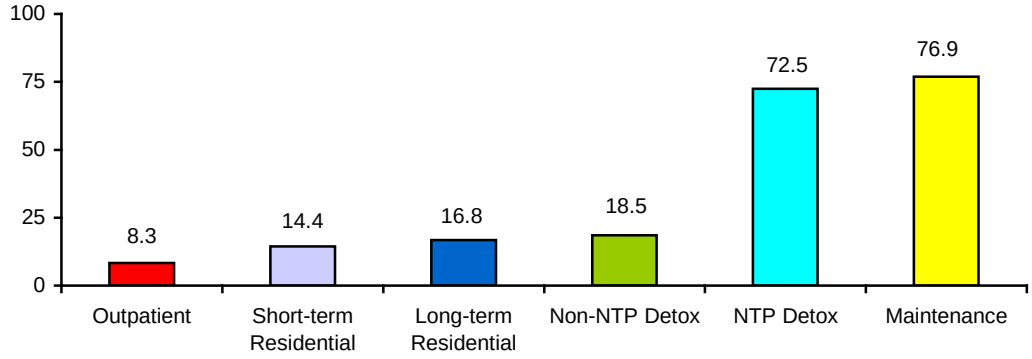


Figure 29 displays CalOMS admission data on treatment utilization patterns by homeless, disabled, and veteran clients.

Homeless

Homeless persons with substance use disorders may have the most difficulty accessing treatment, even if they have public health insurance (Kushel, Vittinghoff, & Hass, 2001; Wenzel et al., 2001). Clients

admitted to detoxification residential services reported the highest rates of homelessness at admission (49.7%), followed by clients entering residential short- and long-term programs (33.5% and 39.3%). Fewer clients in outpatient programs (7.6%) and NTP programs (maintenance and detoxification) (6.2% & 13.6%) reported homeless status at admission.

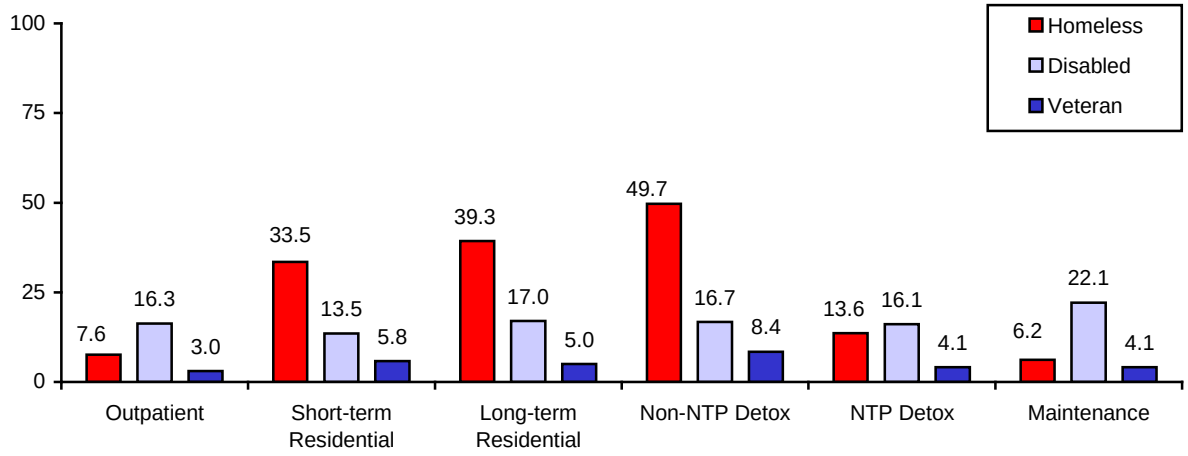
Disability

NTP maintenance clients were the most likely to report some form of disability at admission to treatment (22.1%) relative to the other treatment types/modalities, followed by clients entering long-term residential programs (17%). A similar proportion of detoxification and NTP detoxification clients reported a disability at admission (16.9% and 16.1%). Clients entering outpatient treatment or short-term residential treatment were less likely to report a disability (16.3% and 13.5%). For all modalities, "mental" disability is the most common disability cited.

Veteran Status

Combined data from SAMHSA's 2004–2006 NSDUH indicate that an annual average of 7.1% of veterans aged 18 or older met the criteria for a past-year substance use disorder, and 1.5% had co-occurring serious psychological distress and substance use disorder. In 2002, veterans accounted for more than 70,000 admissions for substance abuse treatment (TEDS, 2002). Veteran status was most often reported among client admissions entering non-NTP detoxification programs (8.4%). Similar proportions of clients entering short-term and long-term residential programs reported a veteran status at admission (5.8% and 5.0%). Veteran status of clients in both NTP detoxification and maintenance was 4.1% for each treatment modality. Few clients entering outpatient treatment reported a veteran status (3%) compared to the other treatment types/modalities.

Figure 29: Treatment Utilization by Homeless, Disabled and Veterans



Treatment Referral Source

Treatment referral sources are important to know given that past studies on treatment utilization patterns have found that many drug abusers first come into contact with criminal justice, primary health, and social service/welfare agencies prior to attending a treatment agency (Weisner & Schmidt, 1995). Such sources can significantly impact a client's motivation to engage and participate in treatment (Anglin et al., 1997). This section discusses four primary referral sources by client characteristics.

Self: A "self-referred" client includes situations where an individual is referred to treatment by a family member, a friend, or any other acquaintance, as well as through referring themselves.

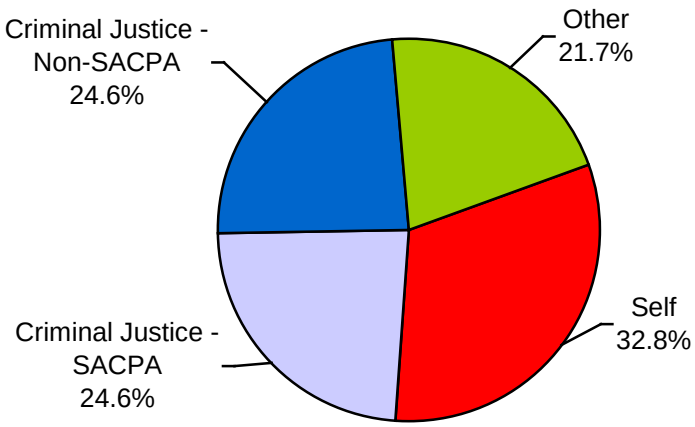
Criminal Justice System - Substance Abuse and Crime Prevention Act (SACPA): An individual referred by the criminal justice system - SACPA includes any individual who was referred to treatment as a result of participation in the SACPA Proposition 36 program, including a SACPA court, SACPA probation, or SACPA parole.

Criminal Justice System - Non-SACPA: An individual referred by the criminal justice system court not related to Proposition 36 (SACPA) includes being referred by a court, police official, judge, prosecutor, probation or parole officer, or other person affiliated with a federal, state, or judicial system.

Other: An individual referred by "other" includes those referred by medical or mental health care providers, employers (Employee Assistance Programs), and substance abuse treatment programs and providers, including 12-step programs.

Figure 30 displays referral sources of clients entering treatment in California. As shown, many clients were self-referrals (32.8%), and equal proportions of clients were referred through criminal justice system sources: SACPA (24.6%) and non-SACPA (21.0%). The remaining 21.7% of clients entering treatment were referred by "other" sources, which can include an employer, health care provider, or other substance abuse treatment program/provider.

Figure 31: Treatment Referral Source at Admission



Treatment Referral Source by Sociodemographic Factors

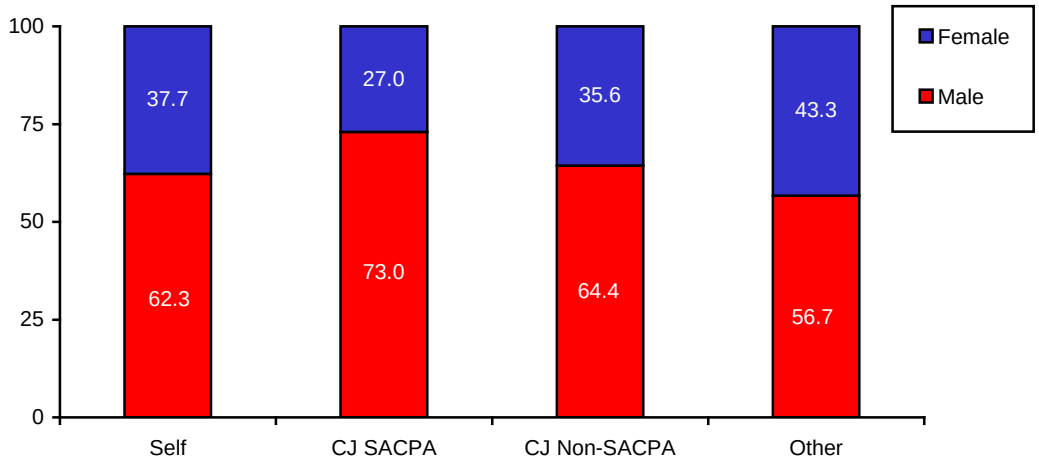
This section describes treatment referral source by client sociodemographic factors (Table 5).

Basic Demographic Characteristics

Treatment referral sources were examined by the basic demographic factors of gender, race/ethnicity, and age.

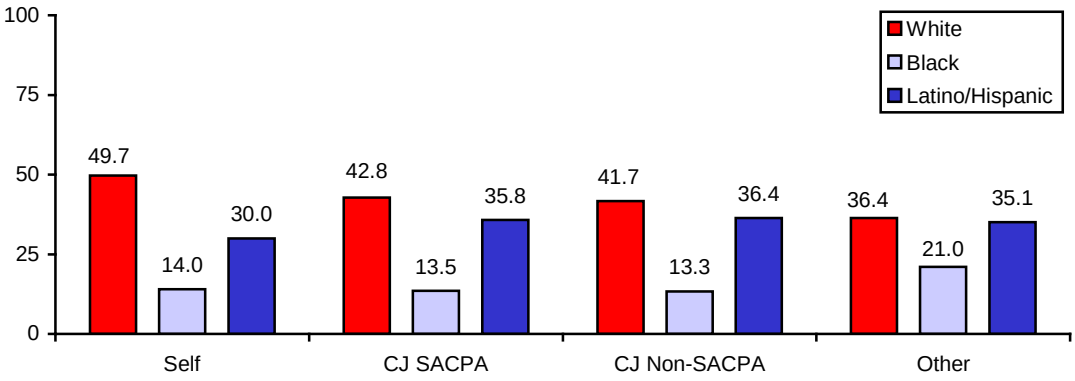
Gender. Most criminal justice SACPA referrals to treatment were among males (73%). Most referrals by self and non-SACPA criminal justice sources were also more likely to be among males than among females (62.3% & 64.4%). Females had higher proportions of referrals to treatment by "other" sources (43.3%) as shown in Figure 32.

Figure 32: Referral Source by Gender



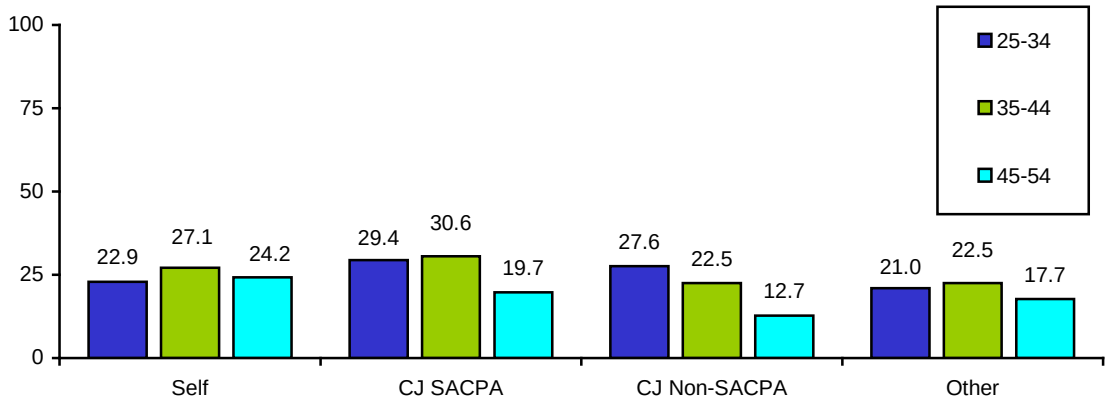
Race/Ethnicity. Whites, Blacks, and Latinos/Hispanics were closely examined since these groups constitute the vast majority of admissions, and analyses of the other race/ethnicities would yield very small numbers when sorted by referral source. As shown in Figure 33, self-referral to treatment was commonly reported among White clients (49.7%), followed by Latino/Hispanics (30%), and Blacks (14%). A similar trend was observed among criminal justice referrals (both SACPA and non-SACPA): Whites (42.8% & 41.7%), Latinos/Hispanics (35.8% & 36.4%), and Blacks (13.5% & 13.3%). Unlike these referral sources, clients referred through "other" sources had a large representation of Blacks (21%) and fewer Whites (36.4%), with a similar proportion of Latino/Hispanics (35.1%).

Figure 33: Referral Source by Ethnicity/Race



Age. Figure 34 displays referral sources by age categories. Self-referrals to treatment were fairly spread across age groups: 25-34 (22.9%), 35-44 (27.1%), and 45-54 (24.2%). Most criminal justice SACPA referrals fell between the ages of 25 and 34 (29.4%) and 35 and 44 (30.6%), with fewer in the 45–54 age category (19.7%). The age range for non-SACPA criminal justice referred clients was more varied, with few in the 45–54-aged group (12.7%). Clients referred by "other" sources were also least likely to have fairly equal representation across the age groups.

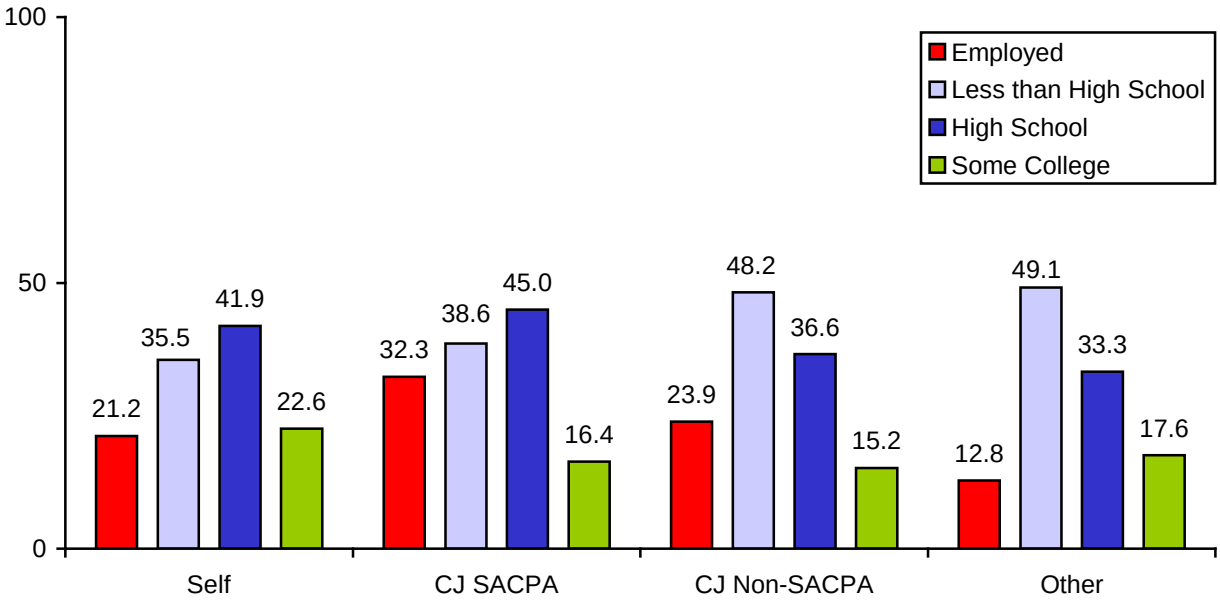
Figure 34: Referral Source by Age



Employment & Education[35]

SACPA-referred clients were the most likely to report employment at admission (32.3%), whereas "other" referred clients were the least likely (12.8%). Similar proportions of self-referred and non-SACPA criminal justice referred clients were employed at admission (21.2% and 23.9%). Clients referred to treatment by "other" and non-SACPA criminal justice sources were least likely to have completed high school (49.1% and 48.2%) compared to clients who were referred through self and SACPA criminal justice sources, who were most likely to having earned their high school diploma (41.9% and 45%). Figure 35 displays referral sources by employment/education status.

Figure 35: Referral Source by Employment and Education Status



Living Arrangements

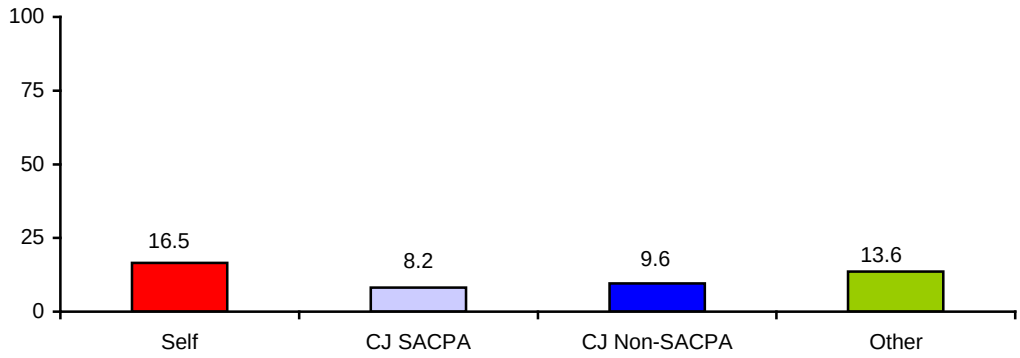
The largest percentage of clients who were self- or SACPA-referred to treatment reported and independent living situation (45% and 44%), whereas fewer non-SACPA and "other" referred clients reported such a living situation (35.9% and 29%).

[35] Statistics reported include admission data for youth under 18. Chapter 2 describes data specific to youth 12–17 on measures of employment and education.

Serious Family Conflict

Self-referred clients to treatment were most likely to report serious family conflict in the 30 days prior to treatment admission (16.5%) than clients referred by "other" (13.6%), non-SACPA (9.6%), or SACPA (8.2%) sources (Figure 36).

Figure 36: Referral Source by Serious Family Conflict

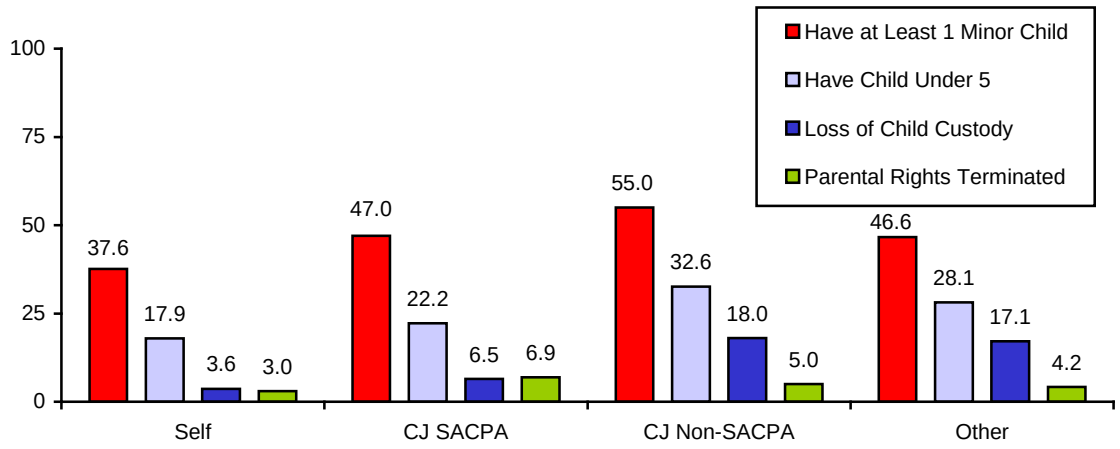


Parental Status & Dysfunction

Figure 37 displays referral sources by parental status measures. As shown, clients referred by non-SACPA criminal justice sources were most likely to report having at least one minor child under the age of 17 (55%) as well as children under 5 (32.6%). Similar proportions of clients referred by "other" and SACPA reported at least one minor child (46.6% and 47%); although "other"-referred clients were more likely to have children under 5 (28.1% and 22.2%). Fewer clients who indicated self-referral reported at least one minor child under 17 (37.6%) or under 5 (17.9%).

Non-SACPA criminal justice referred clients were most likely to report a loss of child custody (i.e., children living elsewhere due to a court mandate; 18%) and terminated
parental rights (5%). "Other"-referred clients were the second most likely to report a loss of the custody of their children (17.1%) and terminated parental rights (4.2%). SACPA-referred and self-referred clients were least likely to report a loss of child custody (6.5% and 6.9%) and terminated parental rights (3.6% and 3%).

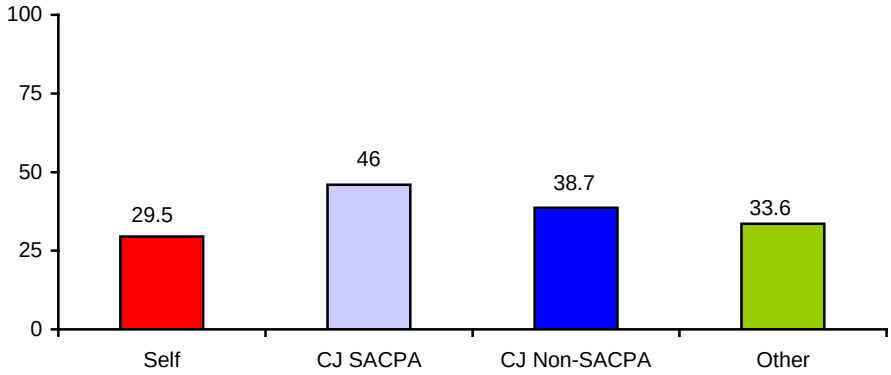
Figure 37: Referral Source by Parental Status & Dysfunction



Social Support Involvement

Criminal justice SACPA referred clients were most likely to report involvement in social support activities (46%), with an average of 6.1 days. About one-third of self-referred treatment clients participated in some form of social support activity (29.5%), with the average number of days of such involvement being 3.6. More than one-third of non-SACPA criminal justice referred treatment clients participated in some form of social support activity (38.7%), for an average of 5.5 days. About a third of other-referred treatment clients participated in some form of social support activity (33.6%), for an average of 4.6 days. Figure 38 displays referral sources by social support involvement.

Figure 38: Referral Source by Social Support Involvement



Treatment Referral Source by Health Status Factors

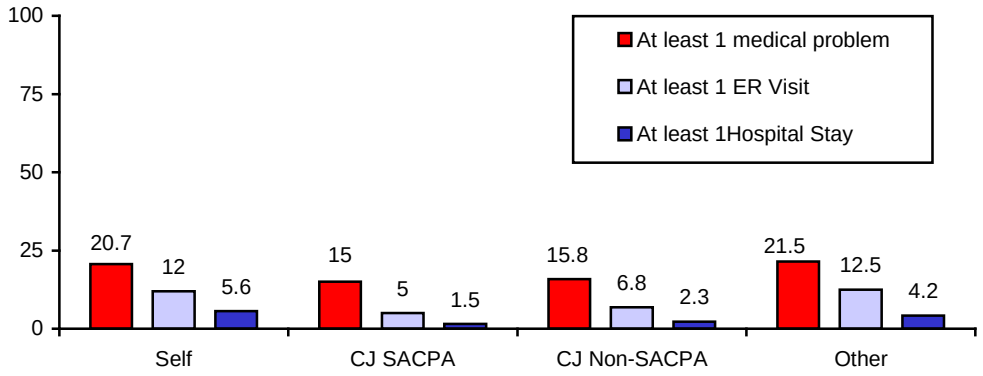
Table 6 provides a description of referral source by health status factors.

Medical Health

Self-referred and "other"-referred clients were likely to report experiencing at least one medical problem in the month prior to treatment entry (20.7% and 21.5%). Similar proportions of clients referred from criminal justice sources (SACPA and non-SACPA) reported at least one medical problem in the prior 30 days (15% and 15.8%). A higher proportion of clients referred by "other" and "self" reported at least one emergency room (ER) visit (12.5% and 12%) and one overnight hospital stay (5.6% and 4.2%) in the month before treatment, compared to criminal justice referral sources (non-SACPA: 6.8% and 2.3% vs.

SACPA: 5% & 1.5%). Figure 39 displays referral sources by medical health measures of problems and medical treatment utilization in the month before treatment admission.

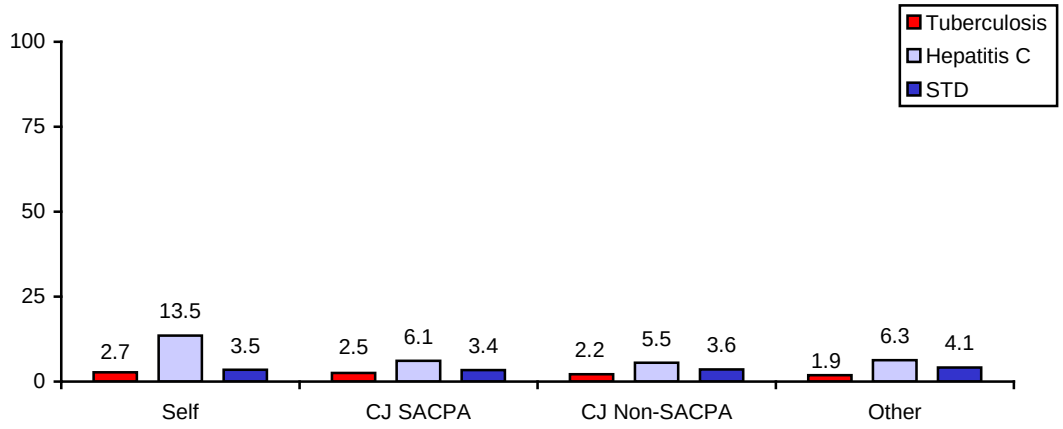
Figure 39: Referral Source by Medical Health



Infectious Disease Status

As shown in Figure 40, the proportion of reported cases of tuberculosis and hepatitis C was highest for self-referred clients (2.7% and 13.5%). Similar proportions of tuberculosis and hepatitis C were reported among clients referred through the criminal justice system (SACPA: 2.5% and 6.1% vs. non-SACPA: 2.2% and 5.5%). Reports of tuberculosis were lowest among clients referred by "other" sources (1.9%), with a relatively similar proportion of hepatitis C (6.3%) was reported among clients referred by the criminal justice referred clients. Reports of sexually transmitted diseases (STDs) were highest among clients referred by "other" sources (4.1%) and were distributed fairly equally across the rest of the sources: self-referred (3.5%), SACPA (3.4%), and non-SACPA (3.6%).

Figure 40: Referral Source by Infectious Disease Status



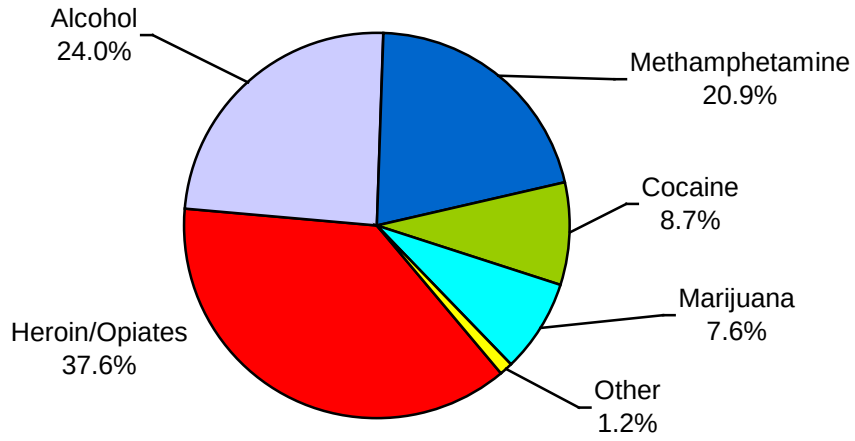
Referral Source by Primary & Secondary Substance Use

Table 7 provides a description of referral source by primary and secondary substance use.

Self-Referral

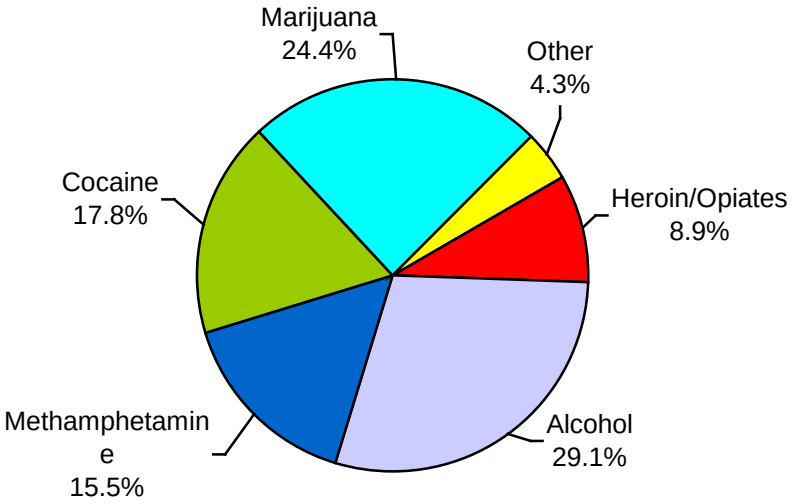
Primary Substance Use. As shown in Figure 41, the largest percentage of self-referred clients reported heroin/opiates (37.6%) as their primary substance problem at admission, followed by primary alcohol (24%), and methamphetamine (20.9%). Fewer self-referred clients reported primary cocaine/crack (8.7%) or marijuana (7.6%) use. The majority of self-referred clients reported use of their primary substance during the prior 30 days (82.2%). The mean age of first use of the primary substance among self-referred clients, regardless of the substance, was 20.2 years.

Figure 41: Primary Substance Use of Self Referred Clients



Secondary Substance Use. Figure 42 shows secondary substance use reported among self-referred clients. Substances identified as secondary problems for self-referred clients included alcohol and marijuana (29.1% and 24.4%), followed by the stimulants cocaine/crack (17.8%) and methamphetamine (15.5%). Secondary heroin/opiate use was less often reported among self-referred clients (8.9%). On average, clients reported that age of first secondary substance use, regardless of the substance was 19.3.

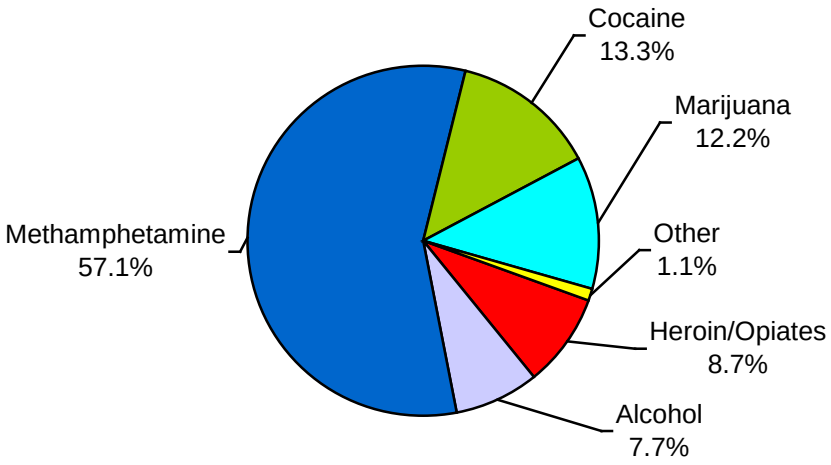
Figure 42: Secondary Substance Use of Self Referred Clients



SACPA Criminal Justice Referral[36]

Primary Substance Use. As shown in Figure 43, methamphetamine was the most commonly used primary substance by SACPA-referred admissions (57.1%). This trend is seen nationally, where the criminal justice system has been the principal source of referral for 49% of primary methamphetamine treatment admissions across the states compared to other primary substances (SAMHSA, TEDS, 2006). Other primary substances reported by SACPA referrals (from most to least) included cocaine/crack (13.3%), marijuana (12.2%), heroin/opiates (8.7%), and alcohol (7.7%). About half of this group reported use of their primary substance at some point during the prior 30 days (53.5%). The mean age at first use of the primary substance, regardless of the substance, was 21.2 years.

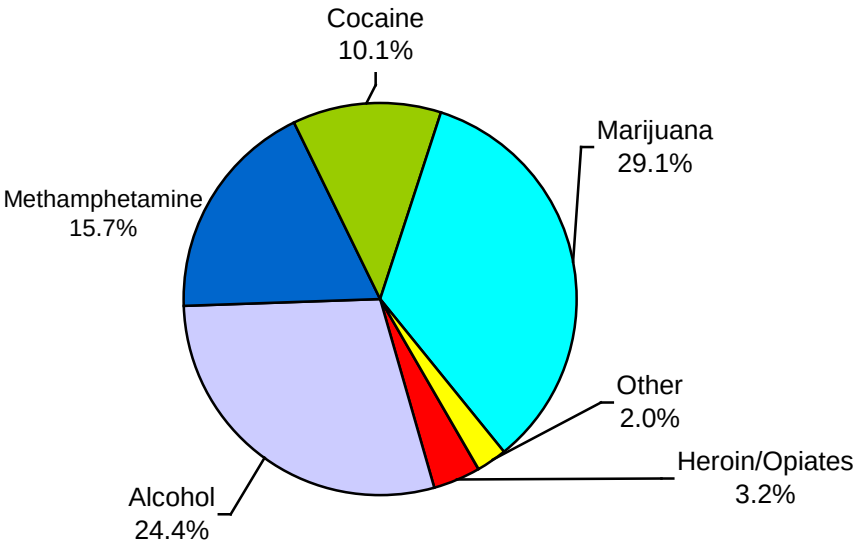
Figure 43: Primary Substance Use by SACPA Referred Clients



Secondary Substance Use. Figure 44 shows secondary substance use reported among SACPA-referred clients. Secondary substance use among clients referred through SACPA mostly included marijuana and alcohol (29.1% and 24.4%), followed by the stimulants methamphetamine (15.7%) and cocaine/crack (10.1%). Few SACPA-referred clients reported secondary heroin/opiate use (3.2%). The mean age at first use of the secondary substance, regardless of the substance, was 18.2 years.

[36] SACPA clients are eligible for SACPA based on an arrest for illicit drugs. Therefore the percentage reporting a primary alcohol problem is very low.

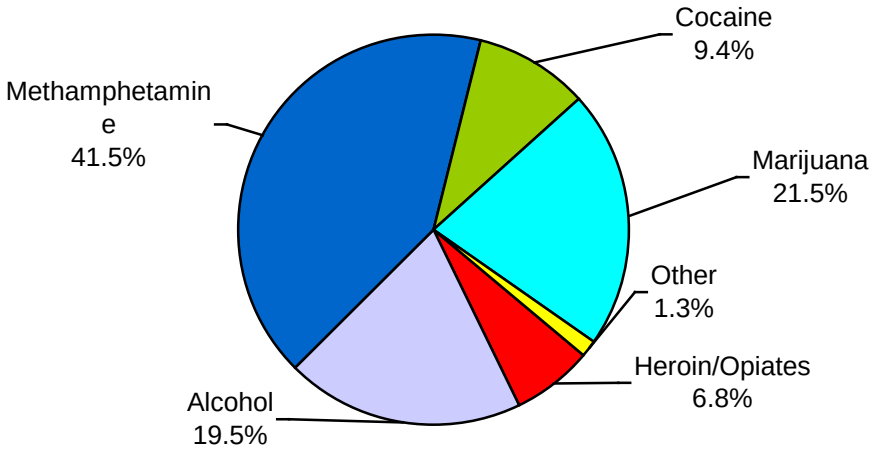
Figure 44: Secondary Substance Use by SACPA Referred Clients



Non-SACPA Criminal Justice Referral

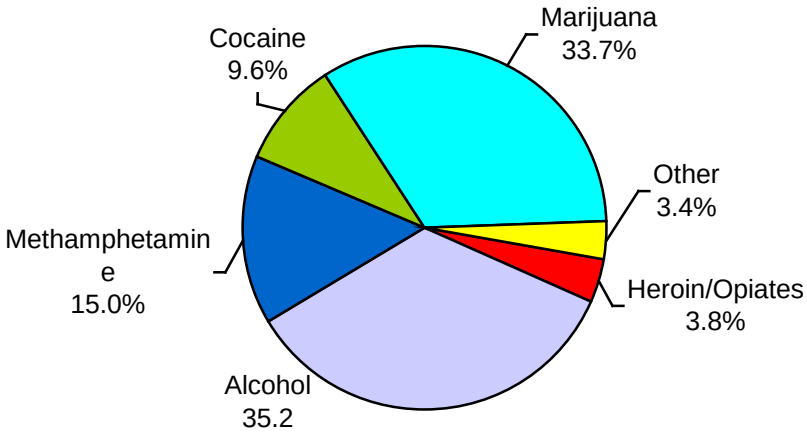
Primary Substance Use. Figure 45 shows primary substance use by non-SAPCA-referred clients. Methamphetamine was the most commonly reported primary substance among clients referred by non-SACPA sources (41.5%). Approximately 21.5% of non-SACPA referrals reported primary marijuana use. Primary alcohol was reported by 19.5% of non-SACPA referrals. Fewer non-SACPA client referrals reported primary cocaine/crack use (9.4%) and heroin/opiate use (6.8%). About half (47.4%) of this referral group reported use of their primary substance during the 30 days prior to admission. The mean age at first use of the primary substance among non-SACPA referred clients, regardless of the substance, was 18.7 years.

Figure 45: Primary Substance Use by Non-SACPA Referred Clients



Secondary Substance Use. As shown in Figure 46, the most commonly used secondary substances for non-SACPA-referred clients were alcohol (35.2%) and marijuana (33.7%). Primary methamphetamine was reported by 15% of non-SACPA referred clients, and 9.6% reported primary cocaine/crack problems. Secondary heroin/opiate use was less often reported by non-SACPA-referred clients (3.8%). The mean age at first use of the secondary substance by non-SACPA referred clients, regardless of the substance, was 17.3 years.

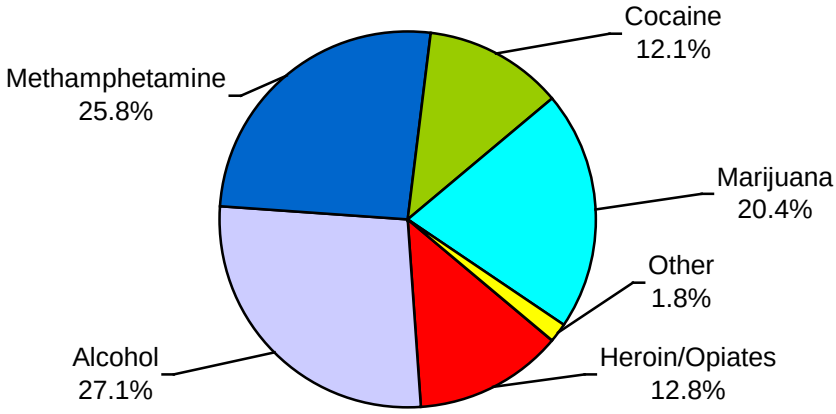
Figure 46: Secondary Substance Use by Non-SACPA Referred Clients



"Other" Referral Sources

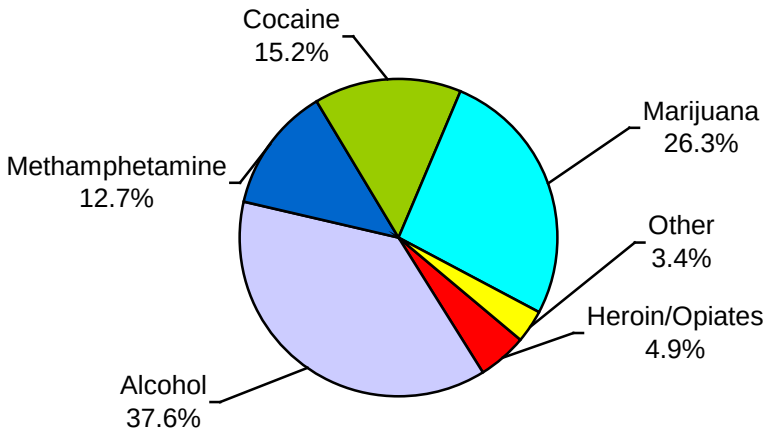
Primary Substance Use. Figure 47 displays primary substance use reported among "other"-referred clients. Clients entering treatment by "other" referral source tended to report primary alcohol use (27.1%), closely followed by primary methamphetamine use (25.8%). Roughly 20.4% of clients who reported "other" referral sources indicated primary marijuana problems at admission. Similar proportions of "other"-referred clients reported primary heroin/opiates (12.8%) and cocaine/crack (12.1%). Most (65.1%) clients from this referral group reported using their primary substance during the 30 days prior to admission. The mean age at first use of the primary substance by these clients, regardless of the substance, was 18.4 years.

Figure 47: Primary Substance Use by Clients Referred by "Other" Sources



Secondary Substance Use. Figure 48 shows secondary substance use reported among "other"-referred clients. The most commonly reported secondary substances among clients referred from "other" sources consisted of alcohol (37.6%), followed by marijuana (26.3%). The stimulants cocaine/crack and methamphetamine were reported as secondary problems by 15.2% and 12.7%, respectively of clients in this referral group. Secondary heroin/opiate use was reported by 4.9% of clients with "other" referrals. The mean age of first secondary use among these clients, regardless of the substance, was 17.9 years.

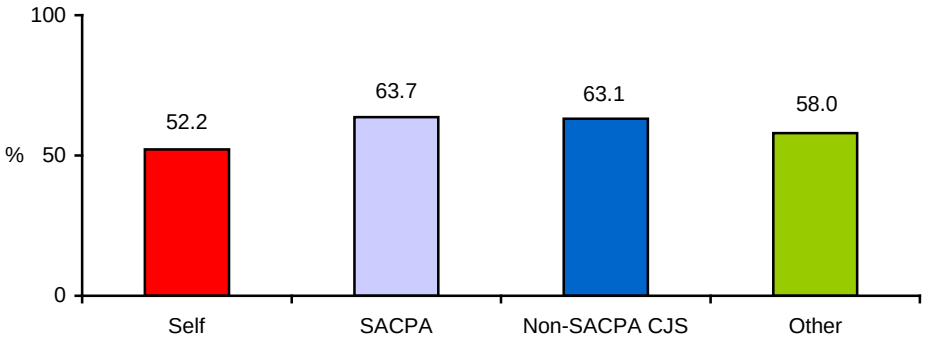
Figure 48: Secondary Substance Use by Clients Referred by "Other" Sources



Referral Source for Polydrug Users

As shown in Figure 49, large proportions of criminal justice referred clients (SACPA & non-SACPA) reported polydrug use at admission (63.7% and 63.1%). About 58% of "other"-referred treatment clients reported polydrug use at admission, with 52.5% of self-referred clients reporting use of a primary and secondary substance (polydrug use) at treatment admission.

Figure 49: Referral Source for Polydrug Users



Implications of Age of First Use

For every referral source, age of first use of the secondary drug is younger than for the primary drug. Kandel (1975) suggests that substance user progress through sequential stages of drug use, commencing with the use of the licit drugs, alcohol and tobacco, progressing to the use of marijuana, and

finally to the use of illicit drugs other than marijuana. It has been noted by Clayton (1986) that this model implies that the drugs used at earlier stages of development are carried through to the later stages. Rather than substituting drugs used later for the older drug classes (e.g., heroin supplanting marijuana), earlier drug use is carried forward into the latter stage. The range of drugs used would thus be expected to increase with age.

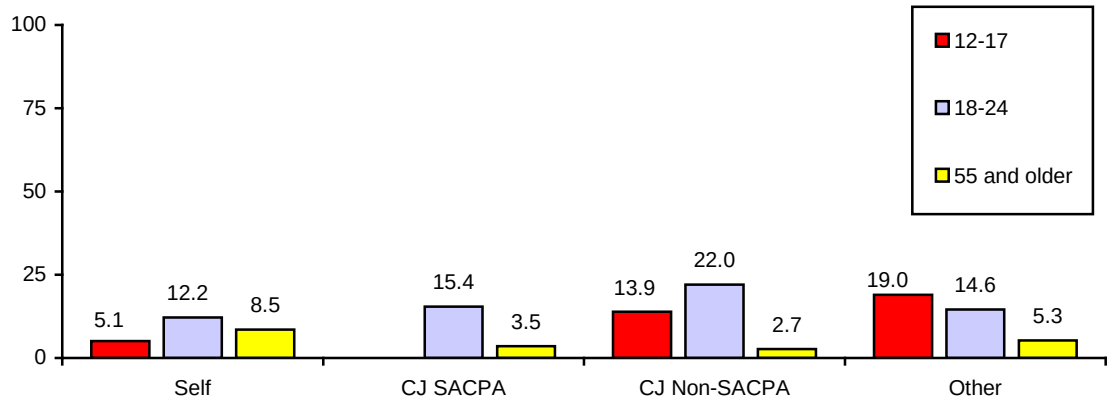
Referral Source by Priority Groups

Table 8 provides a description of treatment referral source by priority groups.

Priority Age Groups

Age. Figure 50 displays the age range for non-SACPA criminal justice referred clients was more varied, with a larger proportion falling in the younger age groups: 22% were 18–24 years and 13.9% were between the ages of 12 and 17 years, with fewer in the 55 and older group (2.7%). Clients referred by "other" sources also included greater representation by the younger age groups: 19% for 12–17 year olds and 14.6% for 18–24 year olds.

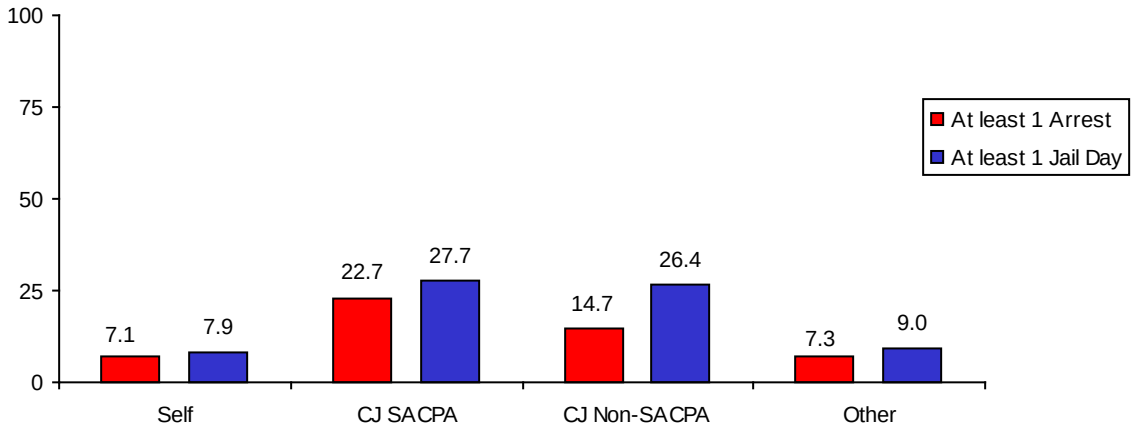
Figure 50: Referral Source by Priority Age Groups



Individuals with Criminal Justice Involvement

Figure 51 displays referral sources by criminal justice involvement. As shown, SACPA criminal justice referred clients were most likely to report being under parole supervision (16.9), as compared to non-SACPA (15.6), "other" (5.6%), and self-referrals (6.2%). In addition, criminal justice referred clients from both SACPA and non-SACPA sources, had a high proportion of arrests (at least once) and jail days (at least once) in the month prior to admission (arrests: 22.7% and 14%; jail: 27.7% & 26.4%) compared to "other" and self-referred sources. Similarly, prison stays were most often reported among clients referred through the criminal justice system (non-SACPA: 5.1% and SACPA: 3%) in the month before treatment admission; fewer prison stays were reported among clients referred by self or "other" sources (1.2% and 1.8%).

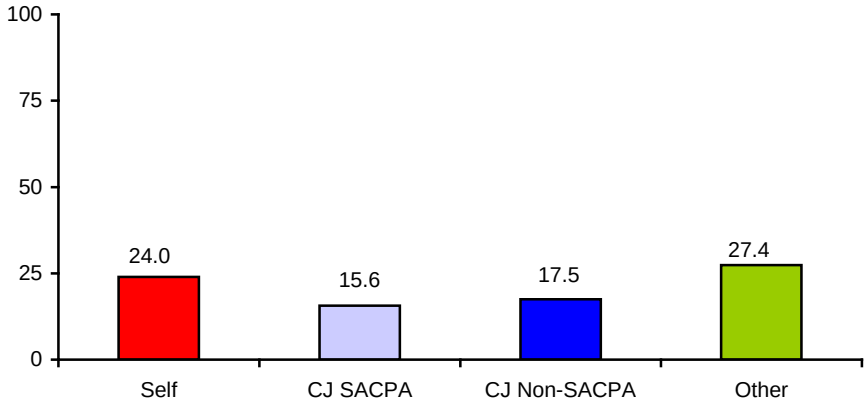
Figure 51: Referral Source by Criminal Justice Involvement



Individuals with Lifetime Mental Illness Diagnosis[37]

Figure 52 displays referral sources by reported lifetime mental illness at admission. Clients referred to treatment by "other" sources were the most likely to report a lifetime mental illness diagnosis (27.4%), followed by self-referred clients (24%), and criminal-justice clients (non-SACPA: 17.5%, and SACPA: 15.6%).

Figure 52: Referral Source by Lifetime Mental Illness Diagnosis



Injection Users

As shown in Figure 53, self-referred clients were most likely to report injection of their primary drug (30.4%). A similar proportion of clients referred to treatment by "other" and SACPA reported injection of their primary drug (12.7% and 12.2%). Non-SACPA criminal justice referred clients were least likely to report injection of their primary substance (10.1%).

[37] Please note that differences in rates of reported mental illness may be related to factors other than actual prevalence rates in the subgroups. For instance, there have been anecdotal accounts that criminal justice referred individuals have as high or higher rates, but they have not been diagnosed within the criminal justice system.

Homeless

Clients referred by self and "other" sources were the most likely to report being homeless at admission (22.8% and 24.6%). This is similar to national trends, showing that homeless admissions are likely to refer themselves for treatment (SAMHSA, TEDS, 2006). The proportion of clients referred by the criminal justice system reporting a homeless status at admission was from 12% from SACPA sources and 13.8% from non-SACPA sources (see Figure 53)

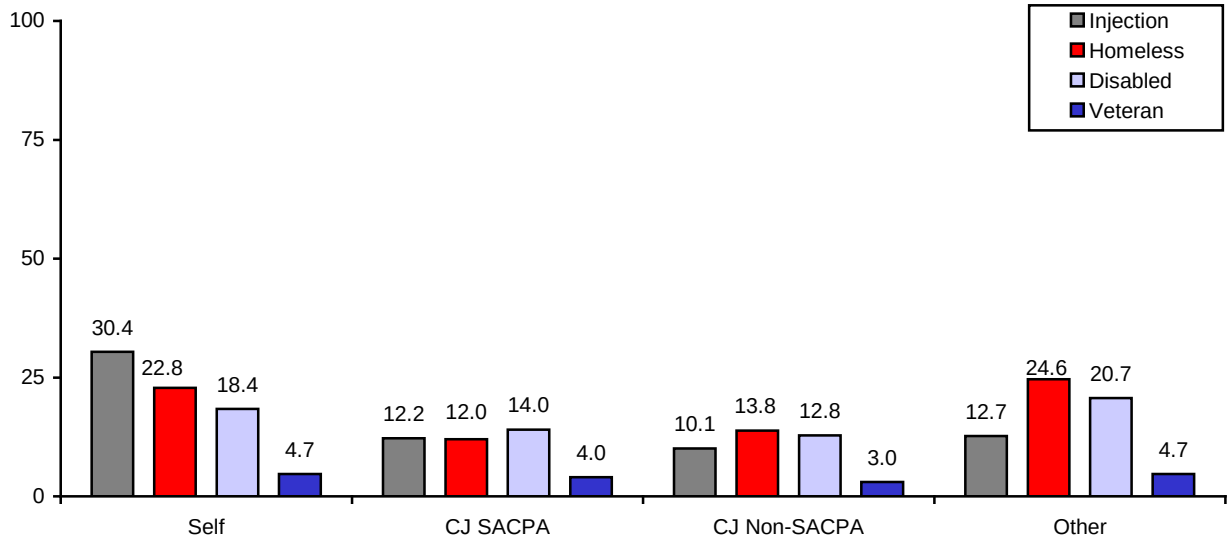
Disability

As shown in Figure 53, a disability was most commonly reported among clients referred from "other" and self sources (20.7% and 18.4%). Criminal justice referrals were least likely to report a disability (14% SACPA and 12.8% non-SACPA).

Veteran Status

A veteran status was reported in similar proportions of admissions by referral sources: 4.7% self, 4.7% "other," 4% SACPA, and 3% non-SACPA (see Figure 53).

Figure 53: Referral Source by Injection, Homeless, Disabled & Veteran Status



Links to Public Assistance Programs

In addition to substance abuse treatment services, substance-dependent clients are increasingly using other services from public assistance programs to address the complex problems they face, including poverty, legal involvement, vocational deficits, and health issues. Understanding their access to and utilization of these public assistance programs is important, given that publicly funded treatment facilities may not have sufficient capacity to provide services to all individuals who request treatment (Friedmann, Alexander, & D'Aunno, 1999). This section provides information on treatment client admissions' links to other public assistance programs, specifically including:

California Work Opportunity and Responsibility to Kids (CalWORKs)

The national welfare reform program, Temporary Assistance to Needy Families (TANF), was adopted in California and renamed the California Work Opportunity and Responsibility to Kids (CalWORKs) program. This program provides funding to counties for supportive services, such as mental health care, assistance to victims of domestic violence, and alcohol and drug treatment. The main goal of these services is to remove barriers to those trying to obtain and retain employment.

Criminal Justice Services: Parolee Services Network (PSN) & Female Offender Treatment and Education Program (FOTEP)

PSN provides community alcohol and drug treatment and recovery services to parolees either from the community parole systems or immediately upon release from prison custody. The program operates in 17 counties statewide and provides up to 180 days of alcohol or other drug treatment and recovery services. FOTEP provides residential and outpatient alcohol and drug treatment and recovery services to female parolees in four counties. FOTEP programs provide up to six months (180 days) of alcohol and drug treatment services to each participant.

Medi-Cal

In California, the federal Medicaid Program is administered by the state as the Medi-Cal Assistance Program, which provides health care services to welfare recipients and other qualified low-income persons (primarily families with children and the aged, blind, or disabled). The federal Centers for Medicare and Medicaid Services oversees the program to ensure compliance with federal law.

All information described in the following section refers to client admissions who reported links with CalWORKS programs, services under the criminal justice system (Parolee Services Network or the Female Offender Treatment and Education Program), or Medi-Cal.

Links to Public Assistance Programs by Sociodemographic Factors

Basic Demographics. Approximately 31.5% of treatment admissions in California during fiscal year 2006–2007 had links to public assistance programs (as listed above). Many of these client admissions were female (48.6%). The race/ethnicity of these client admissions was fairly distributed: 37% White, 36.5% Latino/Hispanic, and 19.3% African American. Similar to general treatment admissions, few of these admissions were Asian/Pacific Islander (2.1%), American Indian/Alaskan Native (1.7%), or an "Other" race/ethnicity (3.4%). Age groups most represented by client admissions with links to other public assistance programs included 25–34 year olds (21.5%) and 35-44 year olds (21.7%). The older aged group (45–54 years) constituted 16.8% of these admissions.

Education & Employment. Most client admissions with links to public assistance programs had not graduated from high school (53.1%) and only a small proportion of this group reported any employment at admission (11.6%).

Living Situation. Close to half (49.7%) of client admissions with links to public assistance programs were in dependent living situations; 36.7% reported living independently.

Serious Family Conflict. Serious family conflict was reported by 14.5% of client admissions with links to public assistance programs. On average, these client admissions reported experiencing 1.8 days of serious family conflict in the 30 days prior to treatment admission.

Parental Status & Dysfunction. Slightly over half (53.7%) of client admissions with links to public assistance programs reported having at least one minor child under 17; 32.1% reported having children under the age of 5. Approximately 14.4% of client admissions with links to public assistance programs

reported a custody loss (i.e., children living elsewhere due to a court mandate). Terminated parental rights were reported by 4.9% of these admissions.

Involvement in Social Support. About 32.8% of client admissions with links to public assistance programs reported participating in some form of social support activity before treatment admission (32.8%; mean = 4.3 days in the prior 30 days at admission).

Links to Public Assistance Programs by Health Status Factors

Medical Health. Close to a quarter (24%) of client admissions with links to public assistance programs reported experiencing at least one medical problem (24%) in the 30 days prior to admission. Emergency room visits and overnight hospital stays were reported, respectively, by 12.4% and 4.8% of client admissions with public assistance links to programs.

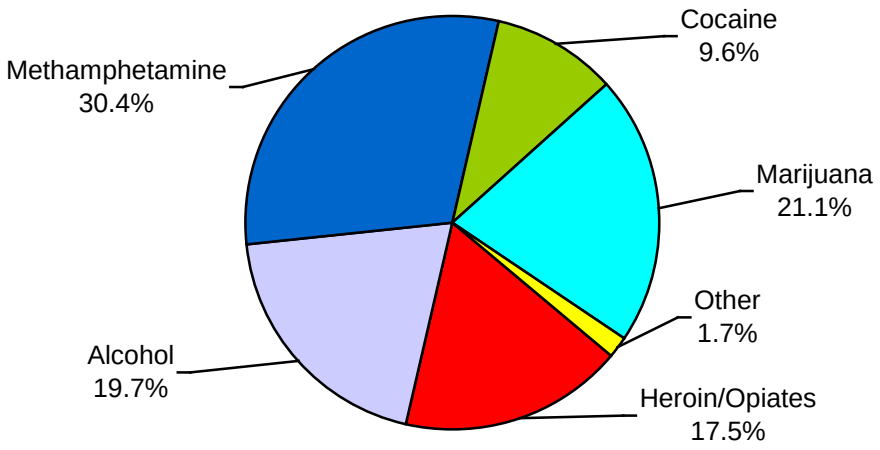
Infectious Disease Status. Infectious diseases, including tuberculosis and hepatitis C were reported by 3% and 11.9% of client admissions with links to public assistance programs. A positive status of sexually transmitted diseases was reported by 4.9% of these client admissions.

Links to Public Assistance Programs by Drug Use Factors

Primary Substance Use

As shown in Figure 54, primary methamphetamine use was most often reported among client admissions with links to public assistance programs (30.4%), followed by marijuana (21.1%), alcohol (19.7%), and heroin/opiate (17.5%) primary use. Fewer clients with such links reported primary cocaine/crack problems (9.6%). More than half of this group reported use of their primary substance at some point during the prior 30 days (62.7%). The mean age at first use of the primary substance, regardless of the substance, was 19 years.

Figure 54: Links to Public Assistance Programs by Primary Substance Use

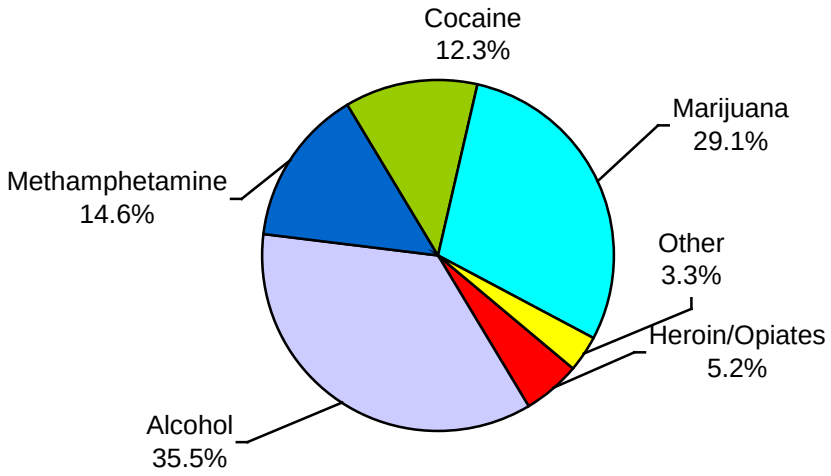


Secondary Substance Use

The most commonly reported secondary substances for treatment client admissions with links to public assistance programs were alcohol (35.5%) followed by marijuana (29.1%; Figure 55). The stimulants methamphetamine and cocaine/crack were reported as secondary substances by 14.6% and 12.3%,

respectively, of these clients, with only 5.2% reporting secondary use of heroin/opiates. The mean age at first use of the secondary substance, regardless of the substance, was 17.9 years.

Figure 55: Links to Public Assistance Programs by Secondary Substance Use



Polydrug Use. A large proportion (57.6%) of client admissions with links to public assistance programs reported polydrug use.

Links to Public Assistance Programs by Priority Groups

In terms of priority groups with links to public assistance programs, youth and young adults made up 18.4% and 14.9%, respectively, of these client admissions, with the older age (55 and over) group constituting 6.8% of these admissions. Approximately 29.2% of client admissions with links to public assistance programs indicated a lifetime mental illness diagnosis, and 13.7% with links to public assistance were homeless. Veteran status was reported among 3.3% of these client admissions and 26.1% reported a disability. Almost a tenth of client admissions with links to public assistance programs were on parole (11.5%), and 9.7% reported arrests and 12.7% reported jail time in the month before treatment entry. Injection as primary route of use was reported by 16.6% of treatment client admissions with links to public assistance programs.

Summary

The information presented in this chapter makes an important contribution to our understanding of treatment utilization patterns in California. As the Institute of Medicine (1990) concluded regarding treatment effectiveness: No single treatment "works" for a majority of the people who seek treatment. Each of the treatment modalities can fairly be said to work for many of the people who seek that treatment; and enough of them do find the right treatment, and stay with it long enough, to make the current aggregate of treatment programs worthwhile. Additional information is needed to understand more about broad patterns of treatment utilization and the impact that referral sources have on access to treatment, particularly for vulnerable populations.

REFERENCES

Andersen, R.M. (1995). Revisiting the behavioral model and access to medical care: Does it matter? *Journal of Health and Social Behavior, 36*, 1–10.

Anglin, M.D., & Hser, Y.-I. (1990). Treatment of Drug Abuse Drugs & Crime. In M. Tonry, & J.Q. Wilson (Eds.), *Drugs and crime* (Vol. 13, pp. 393-460). Chicago: The University of Chicago Press.

Anglin, M.D., & Hser, Y.I. (1992). Drug abuse treatment. In R.R. Watson (Ed.), *Drug and alcohol abuse reviews* (Vol. 4, pp. 1-36). Totowa, NJ: Humana Press.

Anglin, M.D., Hser, Y., Grella, C.E., Longshore, D., & Prendergast, M. L. (1997). *Drug treatment careers: Conceptual overview and application to DATOS*. Unpublished manuscript, University of California, Los Angeles, Drug Abuse Research Center.

Anglin, M.D., Kaplan, J., & Sells, S.B. (1983). Drugs and crime: Behavioral aspects. In S. H. Kadish (Ed.), *Encyclopedia of crime and justice* (Vol. 2, pp. 636-643). New York: Free Press.

Anglin, M.D., Ryan, T.M., Booth, M.W., & Hser, Y. (1988). Ethnic differences in narcotics addiction. I. Characteristics of Chicano and Anglo methadone maintenance clients. *International Journal of the Addictions, 23*(2), 125-149.

Bachman, J.G., O'Malley, P.M., & Johnston, L.D. (1997). Drug use among young adults: The impacts of roles status and social environment. *Journal of Personality and Social Psychology, 47*, 629-645.

Ball, J.C., & Ross, A. (1991) *The effectiveness of methadone maintenance treatment*. New York: Springer-Verlag.

Baumrind, D. (1985). Familial antecedents of adolescent drug use: A developmental perspective. *NIDA Research Monograph, 56*, 13-44.

Bloom, B., & Covington, S. (1998) *Gender-specific programming for female offenders: what is it and why is it important?* Paper presented at the 50th annual meeting of the American Society of Criminology, Washington, DC.

Blume, S. (1992). Women, alcohol and drugs. In J. Lowinson, P. Ruiz, R. Millman, & J. Langrod (Eds.), *Substance abuse. A comprehensive textbook* (pp. 794-807). Baltimore, MD: Williams, & Wilkins.

Blume, S. (1997). Women: Clinical aspects. In J. Lowinson, P. Ruiz, A. Milkman, & J. Langrod (Eds.), S*ubstance abuse: A comprehensive textbook* (pp. 645-654). Baltimore, MD: Williams and Wilkins.

Bride, B.E. (2001). Single-gender treatment of substance abuse: Effect on treatment retention and completion, *Social Work Research, 25*, 4, 223-232.

Burke, J.G., Thieman, L.K., Gielen, A.C., O'Campo, P., & McDonnell, K.A. (2005). Intimate partner violence, substance use, and HIV among low-income women: Taking a closer look. *Violence against Women, 11*(9), 1140-1161.

Burnam, M.A., Bing, E.G., Morton, S.C., Sherbourne, C., Fleishman, J.A., London, A. S., Vitiello, B., Stein, M., Bozzette, S.A., & Shapiro, M.F. (2001). Use of mental health and substance abuse treatment services among adults with HIV in the United States. *Archives of General Psychiatry, 58,* 729–736.

Chitwood, D.D., Comerford, M., & McCoy, H.V. (2002). Satisfaction with access to health care among injection drug users, other drug users, and nonusers. *Journal of Behavioral Health Services & Research, 29,* 189–197.

Clayton, R.R. (1986) Multiple drug use epidemiology, correlates and consequences. *Recent Developments in Alcoholism, 4*, 7-38.

Coffey, R.M., Mark, T., King, E., Harwood, H., McKusick, D., Genuardi, J., Dilonardo, J., & Chalk, M. (2001). National estimates of expenditures for substance abuse treatment, 1997. U.S. Department of Health and Human Services, SAMHSA. Available at: www.openminds.com/indres/spending.pdf.

Covington, S., & Beckett, L. (1988) *Leaving the enchanted forest* (pp. 49-55) New York: HarperCollins.

Covington, S., & Surrey, J. (1997). The relational model of women's psychological development: Implications for substance abuse. In S. Wilsnack & R. Wilsnack (Eds.), *Gender and alcohol: Individual and social perspectives* (pp. 335-351). New Brunswick, NJ: Rutgers University Press.

Cunningham, J.A., Sobell, L.C., Sobell, M.B., Agrawal, S., & Toneatte, T. (1993). Barriers to treatment: Why alcohol and drug abusers delay or never seek treatment. *Addictive Behaviors, 18*(3), 347–353.

Dana, R.H. (2002). Mental health services for African Americans: A cultural/racial perspective. *Cultural Diversity & Ethnic Minority Psychology, 8*(1), 3–18.

Darke, S., Swift, W., Hall, W., & Ross, M. (1994b). Drug use, HIV risk-taking and psychosocial correlates of benzodiazepine use among methadone maintenance clients. *Drug and Alcohol Dependence, 34*, 67-70.

Edlund, M.J., Belin, T.R., & Tang, L. (2006). Geographic variation in alcohol, drug, and mental health services utilization: what are the sources of the variation? *Journal of Mental Health Policy and Economics, 9*(3), 123-32.

Friedmann, P.D., Alexander, J.A., & D'Aunno, T.A. (1999). Organizational correlates of access to primary care and mental health services in drug abuse treatment units. *Journal of Substance Abuse Treatment, 16,* 71–80.

Gonzales, R., Marinelli-Casey, P., Shoptaw, S., Ang, A., & Rawson, R.A. (2006). Hepatitis C virus infection among methamphetamine-dependent individuals in outpatient treatment. *Journal of Substance Abuse Treatment, 31*, 195-202.

Green-Hennessy, S. (2002). Factors associated with receipt of behavioral health services among persons with substance dependence. *Psychiatric Services, 53*(12), 1592-1598.

Harwood, H., Fountain, D., & Fountain, G. (1999). The economic costs of alcohol and drug abuse in the United States 1992. Alcohol/Drugs COI Study Team. *Statistical bulletin (Metropolitan Life Insurance Company), 80*(4), 2-9.

Hodgins, D.C., Ed-Guebaly, N., & Addington, J. (1997). Treatment of substance abusers: Single or mixed gender programs? *Addiction, 92*, 7, 805-812.

Hser, Y-I., Hoffman, V., Grella, C.E., & Anglin, D.M. (2001). A 33-year follow-up of narcotics addicts. *Archives of General Psychiatry, 58*, 503-508.

Johnson, R.A., Hoffman, J.P., & Gerstein, D.R. (1996). *The relationship between family structure and adolescent substance use.* Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies.

Kandel, D.B. (1975). Stages in adolescent involvement in drug use. *Science 190*, 912-914.

Kaufman, P., Alt, M.N., & Chapman, C.D. (2000). *Dropout rates in the United States.* Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Kessler, R.C., Aguilar-Gaxiola, S., Berglund, P.A., Caraveo-Anduaga, J.J., DeWit, D.J., Greenfield, S.F., Kolody, B., Olfson, M., & Vega, W.A. (2001). Patterns and predictors of treatment seeking after onset of a substance use disorder. *Archives of General Psychiatry, 58,* 1065–1071.

Khantzian, E.J. (1985). The self-medication hypothesis of addictive disorders: Focus on heroin and cocaine dependence. *American Journal of Psychiatry, 142*, 1259-1264.

Kopstein, A. (1992). Drug abuse related emergency room episodes in the United States. *British Journal of Addiction, 87,* 1071-1075.

Korper, S.P., & C.L. Council. (Eds.) 2002. *Substance use by older adults: Estimates of future impact on the treatment system*. DHHS Publication No. SMA 03-3763, Analytic Series A-21. Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies.

Kushel, M.B., Vittinghoff, E., & Haas, J.S. (2001). Factors associated with the health care utilization of homeless persons. *Journal of the American Medical Association, 285,* 200–206.

Laine, C., Hauck, W.W., Gourevitch, M.N., Rothman, J., Cohen, A., & Turner, B.J. (2001). Regular outpatient medical and drug abuse care and subsequent hospitalization of persons who use illicit drugs. *Journal of the American Medical Association, 285*, 2355–2362.

Lowinson, J.H., Millman, R.B., Langrod, J.G., & Ruiz, P. (Eds.). (2004). *Substance abuse: A comprehensive textbook* (pp. 645-654). Baltimore, MD: Lippincott Williams and Wilkins.

Longshore, D., Prendergast, M. L., Hser, Y., & Evans, E. (2002). Evaluation of California's Substance Abuse and Crime Prevention Act of 2000: What we need to know; what we've learned so far. *Offender Substance Abuse Report*, *2*(2), 17, 25-27.

Maccoby, E.E. (1992). The role of parents in the socialization of children: A historical review. *Developmental Psychology, 28*, 1006-1017.

Mark, T.L., Coffey, R.M., King, E., Harwood, H., McKusick, D., Genuardi, J., Dilonardo, J., & Buck, J.A. (2000). Spending on mental health and substance abuse treatment, 1987-1997. *Health Affairs, 19*(4), 108-120.

McLellan, A.T. (2002). The outcomes movement in substance abuse treatment: Comments, concerns and criticisms. In J. Sorenson, & R. Rawson (Eds.). *Drug abuse treatment through collaboration: Practice and research partnerships that work* (pp. 119-134). Washington, DC: American Psychological Association Press.

McLellan, A.T., Arndt, I.O., Metzger, D.S., Woody, G.E., & O'Brien, C.P. (1993). The effects of psychosocial services in substance abuse treatment. *JAMA, 269*, 1953-1959.

McLellan, A.T., Carise, D., & Kleber, H.D. (2003). The national addiction treatment infrastructure: Can it support the public's demand for quality care? *Journal of Substance Abuse Treatment, 25*, 117-121.

McLellan, A.T., Grissom, G.R., Zanis, D., Randall, M., Brill, P., & O'Brien, C.P. (1997). Problem-service "matching" in addiction treatment: a prospective study in 4 programs. *Archives of General Psychiatry, 54*, 730-735.

McLellan, A.T., Luborsky, L., Woody, G.E., & O'Brien, C.P., (1980). An improved diagnostic evaluation instrument for substance abuse patients, the Addiction Severity Index. *Journal of Nervous and Mental Disorders, 168*, 26-33.

McLellan, A.T., & Weisner, C. (1996). Achieving the public health potential of substance abuse treatment: Implications for patient referral, treatment 'matching' and outcome evaluation. In W. Bickel & R. DeGrandpre (Eds.), *Drug policy and human nature* (pp. 61-80). Philadelphia, PA: Wilkins and Wilkins.

National Institute on Drug Abuse. (2006). Available at: www.nida.gov.

National Survey on Drug Use and Health (2004). *Summary of findings from the 2004 NSDUH*. Rockville, MD: Substance Abuse and Mental Health Services Administration. Available at: http://www.oas.samhsa.gov/nsduh/2k4nsduh/2k4Results/2k4Results.htm#toc.

Nelson-Zlupko, L., Kauffman, E., & Dore, M.M. (1995). Gender differences in drug addiction and treatment: Implications for social work intervention with substance-abusing women. *Social Work, 40*, 1, 45-54.

Office of Applied Studies. (1998). *Prevalence of substance use among racial and ethnic subgroups in the United States, 1991–1993* (DHHS Publication No. SMA 98–3202, Analytic Series A-6). Rockville, MD: Substance Abuse and Mental Health Services Administration. Available at http://www.oas.samhsa.gov/analytic.htm .

Office of Applied Studies. (2002). *National and state estimates of the drug abuse treatment gap: 2000 National Household Survey on Drug Abuse* (DHHS Publication No. SMA 02–3640, NHSDA Series H-14). Rockville, MD: Substance Abuse and Mental Health Services Administration. Available at http://www.oas.samhsa.gov/TXgap/cover.htm.

Snowden, L.R. (2001). Barriers to effective mental health services for African Americans. *Mental Health Services Research, 3,* 181–187.

Stein, M.D., O'Sullivan, P.S., Ellis, P., Perrin, H., & Wartenberg, A. (1993). Utilization of medical services by drug abusers in detoxification. *Journal of Substance Abuse, 5*, 187-193.

Substance Abuse and Mental Health Services Administration. (2003). *Overview of findings from the 2006 National Survey on Drug Abuse and Health.* NHSDA Series H-21, DHHS Publication No. SMA 03-3773. Rockville, MD: Office of Applied Studies, SAMHSA.

Swan, A., & Ritter, A. (2001). *Working with polydrug users, Key principles and practices: Clinical treatment guidelines for alcohol and drug clinicians*. No. 7. Fitzroy, Victoria, Australia: Turning Point Alcohol and Drug Centre.

Treatment Episode Data Set (TEDS). (2004, August). *1992-02: National admissions to substance abuse treatment services*. DASIS Series S-11, DHHS Publication no. (SMA) 003463 Rockville, MD: Substance Abuse and Mental Health Services Administration (SAMHSA). Available at: http://wwwdasis.samhsa.gov/teds02/2002_teds_rpt.pdf.

U.S. Department of Health and Human Services. (2000). *Gender differences in drug abuse risks and treatment*. Rockville, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Institute on Drug Abuse.

Weisner, C., & Matzger, H. (2002). A prospective study of the factors influencing entry to alcohol and drug treatment. *Journal of Behavioral Health Services & Research, 29,* 126–137.

Weisner, C., & Schmidt, L.A. (1995). Expanding the frame of health services research in the drug abuse field. *Health Services Research, 30*(5), 707-727.

Wells, K., Klap, R., Koike, A., & Sherbourne, C. (2001). Ethnic disparities in unmet need for alcoholism, drug abuse, and mental health care. *American Journal of Psychiatry, 158,* 2027–2032.

Wenzel, S.L., Audrey Burnam, M., Koegel, P., Morton, S.C., Miu, A., Jinnett, K.J., & Greer Sullivan, J. (2001). Access to inpatient or residential substance abuse treatment among homeless adults with alcohol or other drug use disorders. *Medical Care, 39,* 1158–1169.

Woodward, A.M., Dwinell, A.D., & Arons, B.S. (1992). Barriers to mental health care for Hispanic Americans: A literature review and discussion. *Journal of Mental Health Administration, 19,* 224–236.

Glossary of Terms

Type of Treatment Service/Modality

- Outpatient includes Outpatient Treatment/Recovery and Day Care Rehabilitative.
- Residential includes short-term (<31 days) and long-term (>31 days).
- Detoxification Services includes outpatient detoxification, non-hospital detoxification, residential detoxification.
- Narcotic Treatment Programs (NTPs) include detoxification and maintenance.

Source of Referral

- Self-Referral includes referral by the individual as well as by their family, friends, or acquaintances.
- Criminal Justice System referral includes SACPA and non-SACPA sources.
- Other - Alcohol/Drug Abuse Program, Other Health Care Provider, School/Educational, Employer/Employee Assistance Programs, or 12-Step Mutual Aid

Links to Public Assistance Programs

- California Work Opportunity and Responsibility to Kids (CalWORKs)
- Criminal Justice System includes Parolee Services Network (PSN) & Female Offender Treatment Program (FOTP).
- Medi-Cal Beneficiary

Table 1: Treatment Utilization by Sociodemographic Factors

	Outpatient (%)	Residential (%)		Detox (%)	Narcotic Treatment Program (%)	
		<30 days	> 31 days		Detox	Maintenance
Gender						
Male	62.8	72.0	60.7	72.7	70.3	64.1
Female	37.2	28.0	39.3	27.3	29.7	35.9
Age Categories						
25-34	25.6	26.8	29.4	20.6	20.8	19.1
35-44	23.6	28	29	33.4	25.8	25.6
45-54	15.2	18.6	18.1	28.8	32.3	33.3
Race/Ethnicity						
White	39.2	55.7	46.5	54.1	48.9	48.9
Hispanic/Latino	14.8	8.9	17.2	18.4	11.9	11.6
Black	37.9	29.3	29.1	21.1	34	34.9
Asian/Pacific Islander	39.2	55.7	46.5	54.1	48.9	48.9
American Indian/Alaska Native	14.8	8.9	17.2	18.4	11.9	11.6
Other	37.9	29.3	29.1	21.1	34.0	34.9
Education						
Less than high school	27.7	11.6	7.6	13.5	30.1	32.6
High School	47.4	38.8	38.3	27.1	33.4	34.9
Some College/Graduate School	37.4	39.8	41.1	43.3	45.0	46.6
Employment						
Employed	27.7	11.6	7.6	13.5	30.1	32.6
Unemployed	72.4	88.4	92.4	86.5	70.0	67.4
Living Situation						
Independent	63.1	0.7	10.0	8.0	7.7	10.6
Dependent	69.7	1.9	15.7	6.6	2.4	3.7
Serious Family Conflict	11.0	18.5	16.3	16.5	7.0	7.3
Parental Status						
Minor children (under 17)	50.9	46.7	50.0	32.1	24.7	50.9
Children under 5	28.4	21.6	26.7	13.2	9.4	28.4
Parental Dysfunction	12.8	7.7	14.4	6.5	2.2	12.8
Loss of Child Custody	4.0	3.6	5.2	2.9	1.4	4.0
Termination of Parental Rights	38.6	39.9	47.1	30.3	11.9	38.6

Table 2: Treatment Utilization by Health Status Factors

	Outpatient (%)	Residential (%)		Detox (%)	Narcotic Treatment Program (%)	
		<30 days	> 31 days		Detox	Maintenance
Medical Problems (past month)						
At least 1 medical problem	16.4	23.4	19.8	25.8	15.2	17.0
Medical Treatment (past month)						
At least 1 emergency room visit	2.3	2.5	21.8	28.6	3.5	5.3
At least 1 overnight hospital stay	6.6	14.7	11	20.8	6.4	7.3
Infectious Disease Status						
Tuberculosis	2.1	2.5	2.4	2.1	3.2	4.6
Hepatitis C	5.2	9.8	6.8	10.3	20.4	28.2
Sexually Transmitted Disease	3.9	3	4.3	2.2	2.2	2.8

Table 3: Treatment Utilization by Drug Use Factors

	Outpatient (%)	Residential (%)		Detox (%)	Narcotic Treatment Program (%)	
		≤30 days	≥ 31 days		Detox	Maintenance
Primary Drug of Abuse						
Heroin/Other Opiates	6.3	15.3	10.2	19.7	98.4	98.2
Alcohol	18.7	27.3	20.0	41.5	0.3	0.2
Cocaine/Crack	41.3	36.0	46.0	21	0.1	0.4
Methamphetamine	10.4	9.8	15.6	15.0	0.1	0.4
Marijuana	21.8	10.5	7.1	2.1	0.02	0.2
Other	1.6	1.2	1.1	0.8	0.9	0.7
Secondary Drug of Abuse						
Heroin/Other Opiates	3.3	6.7	5.9	8.7	17	14.5
Alcohol	37.5	28.7	30.3	32.5	13.2	12.7
Cocaine/Crack	9.4	13.2	12.8	18.3	38.9	41.4
Methamphetamine	14.4	16.1	15.1	16.7	12.5	16.7
Marijuana	32.7	31.8	32.9	21.0	10.1	8.6
Other	2.7	3.6	3.1	2.9	8.2	6.1
Primary + Secondary (Polydrug Use)	60.4	63.4	67.1	54.7	39.5	38.7

Table 4: Treatment Utilization by Priority Groups

	Outpatient (%)	Residential (%)		Detox (%)	Narcotic Treatment Program (%)	
		≤30 days	≥ 31 days		Detox	Maintenance
Age Groups						
12-17	14.1	7.0	2.2	0.1	0.04	0.2
18-24	17.8	15.1	17.5	8.9	9.4	6.6
55 and older	3.7	4.5	3.9	8.1	11.8	15.3
Any criminal justice status	69.3	57.8	62.3	27.4	17.6	16.7
Arrests (past 30 days)	13.4	16.2	15.7	9.8	4.1	4.4
Jail (past 30 days)	18.6	21.3	26.6	8.8	4.0	4.4
Prison (past 30 days)	1.9	3.7	6.2	1.3	0.7	0.9
Lifetime Mental Illness Diagnosis	19.8	23.9	24.4	27.3	16.9	18.7
Injection Use	8.3	16.8	14.4	18.5	72.5	76.9
Homeless	7.6	33.5	39.3	49.7	13.6	6.2
Disability	16.3	13.5	17	16.7	16.1	22.1
Veteran Status	3.0	5.8	5.0	8.4	4.1	4.1

Table 5: Referral Source by Sociodemographic Factors

	Self (%)	Criminal Justice: SACPA (%)	Criminal Justice: Non-SACPA (%)	Other (%)
Gender				
Male	62.3	73.0	64.4	56.7
Female	37.7	27.0	35.6	43.3
Age Categories				
25-34	22.9	29.4	27.6	21.0
35-44	27.1	30.6	22.5	22.5
45-54	24.2	19.7	12.7	17.7
Race/Ethnicity				
White	49.7	42.8	41.7	36.4
Hispanic/Latino	14.0	13.5	13.3	21
Black	30.0	35.8	36.4	35.1
Asian/Pacific Islander	49.7	42.8	41.7	36.4
American Indian/Alaska Native	14.0	13.5	13.3	21.0
Other	30.0	35.8	36.4	35.1
Education				
Less than high school	35.5	38.6	48.2	49.1
High School	41.9	45.0	36.6	33.3
Some College/Graduate School	22.6	16.4	15.2	17.6
Employment				
Employed	21.2	32.3	23.9	12.8
Unemployed	78.8	67.7	76.1	87.2
Living Situation				
Independent	37.4	27.5	19.1	16.0
Dependent	25.1	25.8	25.1	23.9
Serious Family Conflict	16.5	8.2	9.6	13.6
Parental Status				
Minor children (under 17)	37.6	47	55	46.6
Children under 5	17.9	22.2	32.6	28.1
Parental Dysfunction				
Loss of Child Custody	3.6	6.5	18	17.1
Termination of Parental Rights	3.0	6.9	5.0	4.2
Social Support Involvement	29.5	46	38.7	33.6

Table 6: Referral Source by Health Status Factors

	Self (%)	Criminal Justice: SACPA (%)	Criminal Justice: Non-SACPA (%)	Other (%)
Medical Problems (past month)				
At least 1 medical problem	20.7	15	15.8	21.5
Medical Treatment (past month)				
At least 1 emergency room visit	12	5.0	6.8	12.5
At least 1 overnight hospital stay	5.6	1.5	2.3	4.2
Infectious Disease Status				
Tuberculosis	2.7	2.5	2.2	1.9
Hepatitis C	13.5	6.1	5.5	6.3
Sexually Transmitted Disease	3.5	3.4	3.6	4.1

Table 7: Referral Source by Drug Use Factors

	Self (%)	Criminal Justice: SACPA (%)	Criminal stice: Non-SACPA (%)	Other (%)
Primary Drug of Abuse				
Heroin/Other Opiates	37.6	8.7	6.8	12.8
Alcohol	24.0	7.7	19.5	27.1
Cocaine/Crack	8.7	13.3	9.4	12.1
Methamphetamine	20.9	57.1	41.5	25.8
Marijuana	7.6	12.2	21.5	20.4
Other	1.2	1.1	1.3	1.8
Secondary Drug of Abuse				
Heroin/Other Opiates	8.9	3.2	3.8	4.9
Alcohol	29.1	34.0	35.2	37.6
Cocaine/Crack	17.8	10.1	9.6	15.2
Methamphetamine	15.5	15.7	15.0	12.6
Marijuana	24.4	35.0	33.7	26.3
Other	4.3	2.0	2.7	3.4
Primary + Secondary (Polydrug) Use	52.5	63.7	63.1	58.2

Table 8: Referral Source by Priority Groups

	Self (%)	Criminal Justice: SACPA (%)	Criminal Justice: Non-SACPA (%)	Other (%)
Age Groups				
12-17	5.1	1.4	12.5	19.0
18-24	12.2	15.4	22.0	14.6
55 and older	8.5	3.5	2.7	5.3
Any criminal justice status	14.5	42.6	31	11.9
Arrests (past 30 days)	7.3	22.7	14.7	7.3
Jail (past 30 days)	7.9	27.7	26.4	9.0
Prison (past 30 days)	1.2	3.0	5.1	1.8
Lifetime Mental Illness Diagnosis	24.0	15.6	17.5	27.4
Injection Use	30.4	12.2	10.1	12.7
Homeless	22.8	12	13.8	24.6
Disability	18.4	14	12.8	20.7
Veteran Status	4.7	4.0	3.0	4.7

CHAPTER 4: PERFORMANCE MEASUREMENT IN CALOMS

A top priority in the addiction field is delivering quality treatment for substance use disorders (Institute of Medicine, 2006). For the successful advancement of the field in the health care arena, substance abuse treatment is under intense pressure to measure and monitor performance of programs and outcomes of clients more systematically. Performance measures, by definition, are used at the program level to estimate and monitor the extent to which the actions of a program conform to standards of quality (Garnick et al., 2002a). Information gained from measuring program performance can be used to identify where service problems exist, which programs are meeting or exceeding treatment expectations of quality, and what, if any, changes should be made to service delivery (Garnick et al., 2002b). Performance measures contrast with outcome measures, which examine critical life functioning areas of clients that are expected to be positively influenced by treatment (McLellan, Chalk, & Bartlett, 2006) and are described in Chapter 5.

Background of Measurement in the Field

These pressures to improve treatment quality have generated a search for appropriate measures of performance and outcomes by federal and state leaders and purchasers of substance abuse treatment. To date, performance measurement efforts in substance abuse treatment programs have been slow and the development of such measures is at an early stage (McLellan, Bartlett & Chalk, 2006). The Substance Abuse and Mental Health Services Administration (SAMHSA) developed a set of National Outcome Measures (NOMS) in 2001 that include the following 10 domains [38]: substance use, employment/education, criminal justice, housing stability, social connectedness, access/service capacity, retention, client perceptions of care, use of evidence-based practices, and treatment cost effectiveness. In addition, the Center for Substance Abuse Treatment (CSAT) in 1998 supported the development of the Washington Circle Group, a multidisciplinary group of service providers, researchers, managed care representatives, and policymakers, to identify and establish a set of performance measures for substance abuse treatment (McCorry et al., 2000). The group outlined seven performance measures that represent four domains within a primary care context (Garnick et al., 2002a) as outlined in the box below. In 2003, the Committee for Quality Assurance (NCQA) adopted the Washington Circle performance measures for inclusion in its Health Plan Employer Data and Information Set (HEDIS®), an information system that tracks quality of care in health plans (Garnick et al., 2002b).

Washington Circle Performance Domains and Measures

Domains	Measures
Prevention/Education	- Percentage of adult clients with care visits who are advised or given information about substance use disorders.
Identification/Recognition	- Number of cases per 1,000 client members who are identified/diagnosed with substance use disorders.
Treatment Initiation and Engagement	- Initiation of substance use disorder services within 14 days. - Treatment engagement within 30 days of initiation of care - Linkage of detoxification and substance use disorders plan services within 14 days. - Interventions for family members/significant others of substance use disorders clients in treatment.
Maintenance of Treatment Effects	- Percentage of patients who report specific services provided and/or monitored by the health care plan to promote and sustain positive treatment outcomes after discharge.

Because these performance measures began in a primary care context, more work is needed to determine the extent to which these measures are applicable to treatment settings and client populations

[38] Domains are categories that require specific measures or defined metrics to adequately characterize the domain.

in the public sector. To continue these efforts and more adequately address the chronic nature of addiction and the need for continuing-care service delivery models, the National Quality Forum (NQF) recently developed a set of consensus standards outlined in the box below.

National Quality Forum Performance Standards

Consensus Standards for Performance	Activities
Identification of Substance use Conditions	- Screening and case finding - Assessment and diagnoses for positive screens
Treatment Initiation and Engagement	- Brief interventions - Promoting engagement - Withdrawal management
Therapeutic Interventions to Treat Substance Use Illness	- Psychosocial interventions - Pharmacotherapy
Continuing Care Management of Substance Use Illness	- Long-term continuing care management - Self-management - Recovery support

These initiatives have, at best, only partially succeeded in establishing standard performance measurement domains and measures,[39] as there is still a substantial amount of work being done to establish measurement criteria for many of these domains and measures (McCorry et al., 2002).

Current State of the Field of Addiction

The system-wide performance and outcome measures in development are considerably different from traditional ways of examining substance abuse treatment programs. Virtually all substance abuse treatment programs since the 1960s have largely focused on three generic outcome goals following treatment discharge: (1) reduced drug and alcohol use, (2) reduced criminal activity; and (3) increased productivity by way of employment (McCollister & French, 2003; Gerstein & Lewin 1990) and have been evaluated using an acute, episodic model of treatment.

With the advances in an understanding of the fundamental nature of addiction disorders as a result of longitudinal and neurobiological research (Hser et al, 1997; McLellan, et al, 2000), addiction is now viewed by many as a chronic and relapsing disorder, similar to other chronic medical conditions (e.g., diabetes, hypertension; McLellan, 2005). In a comparative review of treatments for addiction and chronic illnesses, such as hypertension and diabetes, McLellan and others (2000) uncovered many similarities, including: (1) genetic, behavioral, and social influences, (2) similar treatment response patterns, and (3) high relapse rates post-treatment. Despite these similarities, there are important differences among substance use disorders that require different models of disease management. Consequentially, there is substantial variability among available treatment settings (type/modality) to treat specific substance use disorders. These settings have evolved over the past 30 years into major modalities of treatment rooted in a shared belief that substance use disorders are uniquely complex and require differential treatment (NIDA, 2006). Given this variability, it is necessary to identify different sets of performance measures that can more appropriately capture differences in substance use disorders and their treatment.

California Application of Performance and Outcome Measurement

The California Department of Alcohol and Drug Programs (ADP) implemented a statewide data system in 2006 called the California Outcomes Measurement System (CalOMS) to comprehensively measure client outcomes based largely on the federally required reporting mandate of NOMS. While CalOMS measures allow for a comprehensive understanding of outcome measures, inclusion of performance measures were not considered at the time of its development. However, as CalOMS continues to evolve, it is hoped that

[39] Performance domains are categories of performance that require specific measures or defined metrics to adequately characterize the domain.

some of the information collected through it may be useful in measuring performance. To investigate this possibility, this chapter examines several possible performance domains/measures described in the box below using admission and discharge data collected by CalOMS during fiscal year July 1, 2006, through June 30, 2007; data as of December 2007. It should be noted that because California has not yet identified standard performance domains/measures, these measures are examined as "potential measures" of performance.

CalOMS Potential Performance Domains and Measures

Domains	Measures
Access	- Mean wait list time as measured by admission data.
Continuity of Care	- Proportion of clients with a discharge status from a given treatment service type/modality who had a subsequent admission to another level of care during 30 days after discharge as measured by treatment episode data.
Retention	- Mean and median length of treatment stay in days as measured by treatment episode data. - Proportion of clients with lengths of stay 60 days or more as measured by treatment episode data. - Proportion of clients with lengths of stay 90 days or more as measured by treatment episode data.
Completion	- Proportion of clients with a treatment completion (referred/not referred) discharge status as measured by treatment episode data.

Methods

This chapter has four sections. The first discusses results related to the continuity of care measure. The next three examine access, retention and completion measures by important client characteristics (sociodemographic, health status, and drug use factors), priority groups,[40] and treatment utilization factors. Interpretations of the results for retention and completion have been done using "episode data" as a reference and not single service set data, as described in the data analysis section below. In addition, each section provides results and discussion for data that have meaningful relevance to the field. Detailed tables are provided at the end of the chapter that include all of the data examined.

Data Analysis

The performance measures (with the exception of access) are examined using treatment episode data. As described in Technical Notes 1 and 2 at the end of this chapter, treatment episode data consist of service sets delineated by an admission and discharge to a specific type of service/modality within a 30-day period. A treatment episode can include a single type of treatment service/modality or a sequence of treatment types/modalities for a given client. Specifically, if a discharged client is subsequently re-admitted within 30 days of the discharge, this re-admission is considered the beginning of a new service set, but part of the continuing episode of care. Hence, a treatment episode can consist of one or more service sets that are delineated or strung together by matching admission and discharge records. For simplicity, we often use the term "client" to discuss performance results, although this label refers to a "client episode" rather than to a specific admission record or single service set (i.e., admission to discharge).

[40]Priority groups include women with minor children or who are pregnant, youth, young adults, older adults, individuals with criminal justice involvement or mental illness, injection drug users, homeless, disabled, and veterans.

SUMMARY OF KEY FINDINGS[41]

Highlighted below is a summary of key findings related to performance measures collected by CalOMS.

CONTINUITY OF CARE

- Of the 154,414 episodes used in the assessment of performance measures, 84.9% comprised only one single treatment service, 11.5% consisted of two service sets, 2.6% included three service sets, and 1.2% consisted of more than 3 service sets.
- The majority of the 154,414 episodes started in outpatient treatment (59.8%), 1.6% in short-term residential, 17.3% started in long-term residential, 11.2% in non-NTP detoxification, 4.5% in NTP detoxification, 5.6% in NTP maintenance.

ACCESS

- African American clients waited the shortest time for treatment compared to other racial/ethnic groups.
- Of the primary substances, methamphetamine users were on a treatment waiting list the longest, whereas clients admitted for primary marijuana use spent the fewest days on a treatment waiting list.
- Individuals involved with the criminal justice system spent more days on a treatment waiting list than those without criminal justice involvement.
- Individuals referred to treatment through criminal justice non-SACPA sources spent the most time on a waiting list.

RETENTION

- Females stayed in treatment longer than males and were more likely to remain in treatment for clinical benchmarks of 60 days or more and 90 days or more during a treatment episode.
- Black and "Other" racial/ethnic groups had the shortest lengths of stay in treatment and Asian/Pacific Islanders had the longest stay during a treatment episode.
- Clients involved in AA meetings, church support groups, and other recovery social support activities before treatment spent more time in treatment during a treatment episode than those without social support involvement.
- Clients with serious family conflict in the month before treatment entry had shorter stays in treatment during a treatment episode than those without such conflict.
- Clients with one or more children under the age of 5 had shorter treatment episodes than clients without young children.
- Clients reporting hepatitis C or sexually transmitted disease status at admission had shorter treatment episodes than clients without such a infectious disease status.
- Clients with a self-reported lifetime mental illness had a shorter treatment episode compared to clients without self-reported mental illness disorders.
- Clients who reported injection drug use in the past month had a shorter treatment episode than clients who reported no injection use in the past month.

COMPLETION

- White and Asian/Pacific Islander clients had the highest proportion of completed treatment episodes, with Latino and African American clients having the lowest proportion of completed treatment episodes.

[41] Results for retention and completion are reported in aggregate (i.e., across all treatment types/modalities). Keep in mind that some programs have very specific durations while others have no limit as to how long one can be in the program.

- Clients with terminated parental rights had a lower proportion of completed treatment episodes than those who did not have parental rights terminated.
- Treatment episode completion rates were lower among clients with an infectious disease status at admission compared to those without.

GENERAL OVERVIEW OF POTENTIAL PERFORMANCE MEASURES IN CALOMS

Continuity of Care

The chronic nature of addiction calls for treating it under a continuum of care, where clients move between different levels of care. Under a continuum of services model, in an ideal treatment approach, clients are transitioned from intense or high levels of care to low levels of service where recovery can be maintained. Findings from the literature, however, demonstrate that many substance-abusing clients are not getting continuing care at this time. One study showed that 64% of people in treatment were readmissions to treatment and 19% had more than four admissions in publicly funded treatment. Results of a large study from 23 states revealed that only 17% of persons discharged from intensive treatment were transitioned to outpatient continuing care (Dennis and Scott, 2007).

The measurement of continuity of care can be potentially examined using treatment episode data in CalOMS, which tracks the proportion of clients who are discharged from treatment and subsequently begin another treatment program within 30 days. Overall, of the 154,414 episodes[42] used in the assessment of performance measures, 84.9% comprised only one treatment service—that is, for a single service type/modality, there was a client admission record matched with a client discharge record, or a single "service set." Approximately 11.5% of the episodes consisted of two service sets (i.e., for a given client there was an admission record matched to a discharge record for two treatment services, such as detoxification and outpatient), 2.6% included three service sets, and 1.2% consisted of more than 3 service sets.

As shown in Figure 1, the majority of the 154,414 episodes started in outpatient[43] treatment (59.8%). Episodes starting in long-term residential made up the second largest percentage (17.3%), followed by episodes beginning with non-NTP detoxification treatment (11.2%). Smaller percentages of episodes began in short-term residential treatment (1.6%), NTP detoxification treatment (4.5%), and NTP maintenance treatment (5.6%).

[42]Because sequences of services can count as part of an episode if the subsequent admission is within 30 days of the previous discharge, episodes with the last available discharge during the last month of fiscal year 2006-07 may not yet have been fully completed within the period included in analyses. That is, clients represented by these episodes could still have experienced additional treatment within the episode but outside the time frame of the current analysis. Thus, performance measures might be underestimated for this subset of episodes; however, the proportion of episodes potentially affected is estimated to be very small (i.e., less than 1%, roughly estimated from the 11.5% with multiple services of the 7.9% of the episodes ending in the last month of fiscal year 06-07). Note also that we have not distinguished in this analysis between temporal sequences of services and multiple types of treatment occurring at the same time or different types of treatment overlapping, as the multiple service episodes could occur either in sequence with a later admission within 30 days of discharge, overlapping or contemporaneous.

[43]Includes intensive day treatment.

Figure 1: Percentage of All Episodes by the First Service Type of the Episode

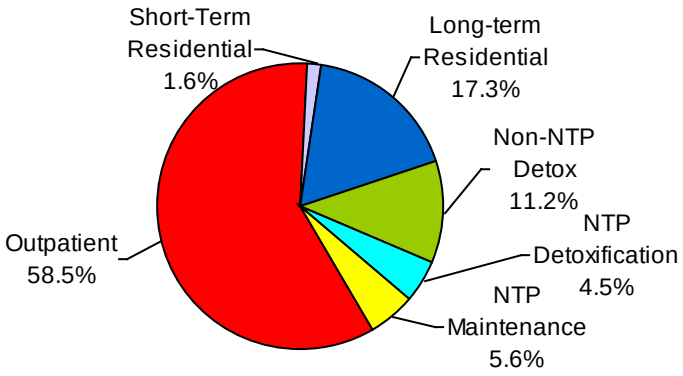
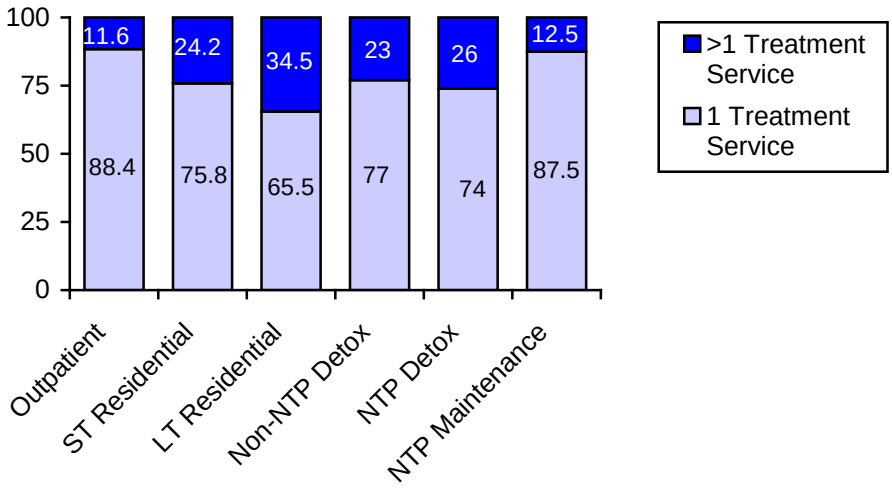


Figure 2 displays the distribution of a "single" service set versus a "multiple" service set (more than 1) among the treatment episodes within each respective treatment service type/modality that initiated the episode. As shown, episodes beginning with outpatient treatment had the largest proportion (88.4%) of single service sets (i.e., outpatient only) as the complete episode, and a few received additional services (11.6%) following the initial outpatient service. Similarly, most of the episodes beginning with NTP maintenance had only one service set (87.5%), and a few had additional service sets (12.5%) following the initial treatment. A large proportion of episodes beginning in non-NTP detoxification and short-term residential programs had only single service sets as the complete episode (77% and 75.8%), and fewer had additional linkages to other services following the initial service (23% and 24.2%). Similarly, of the episodes beginning with NTP detoxification, three-fourths (74%) had only one service set as the complete episode, and 26% had at least one additional service following the initial service. As stated in SAMSHA Treatment Improvement Protocol (TIP) 45, "Detoxification, in and of itself, does not constitute complete substance abuse treatment; rather a successful detoxification process can be measured, in part, by whether an individual who is substance dependent enters and remains in some form of substance abuse treatment/rehabilitation after detoxification."[44,45]

[44] These findings - that around three-fourths of clients entering detoxification programs do not go on to more intensive treatment is concerning. CalOMS data validation procedures have confirmed issues with detoxification treatment data that may account for the relatively low proportions of two-service or three-service episodes. Specifically, when providers transfer clients from detoxification to another level of care they don't always close out the detoxification and open an admission for the subsequent service.

[45] As noted in Technical Note 2 at the end of this chapter, analyses that controlled for time in treatment outliers showed that there were not enough outliers to reduce the percentages much.

Figure 2: Treatment Episodes by Initial Service Type



For a general picture, Table 1 contains information on the proportion of multiple service episodes across all types of treatment in aggregate. Among all types of initial treatment, the most dominant pattern of multiple service episodes (more than 1) was outpatient-to-outpatient treatment (27.2%), followed by long-term residential-to-outpatient treatment (14.2%). The third most common episode pattern of multiple services was outpatient-to-long-term residential treatment (11.3%). Another pattern observed was non-NTP detoxification-to-long-term residential programs (8.8%).

Multiple service combinations within a given episode [46] were examined for specific treatment types/modalities (see Table 2 at the end of chapter for a review). Percentages are based on the subset of episodes that have multiple services, i.e., two or more services (15.1% of the total episodes). Key results are presented below.

Outpatient-Initiated Episodes: The most common pattern of multiple services for episodes beginning in outpatient treatment was outpatient-to-outpatient treatment (59.4%). Almost one-fourth (24.7%) of multiple-service episodes beginning with outpatient had long-term residential treatment as a second service.

Residential-Initiated Episodes: Among multiple-service episodes beginning with short-term residential, 41.7% had a second service of outpatient treatment; 30.2% moved from short-term residential into longer-term residential treatment and 24.0% into another period of short-term residential treatment. For long-term residential initiated episodes, a majority (62.9%) continued to outpatient treatment as the second service in the episode, whereas 31.8% had another session of long-term residential treatment following the initial long-term residential treatment.

Non-NTP Detoxification-Initiated Episodes: For multiple-service episodes starting with non-NTP detoxification, a majority (51.4%) had long-term residential as the second service, and 29.9% had at least two sequential non-NTP detoxification services.

NTP Detoxification or Maintenance-Initiated Episodes: Multiple-service episodes starting with NTP detoxification most commonly had a second service of NTP detoxification (43.0%) or NTP maintenance (42.8%). A majority (58.0%) of multiple-service episodes starting with NTP maintenance had a second NTP maintenance service.

[46] More than 700 different types of service-set patterns emerged from the 154,414 episodes. The number of services in a multi-service episode ranged from 2 to 25, including multiple admissions to the same type of service (e.g., 2 to 8 outpatient admissions within a single episode, or as many as 25 admissions to non-NTP detoxification within a single episode). For purposes of discussion, only the most common service set types are presented.

Access[47]

Access is another important performance indicator that measures a program's capacity[48] to treat clients. In CalOMS, access is examined by the number of days a client spent on a waiting list before treatment admission (as measured by mean and median).[49] Waiting for appropriate care is a common phenomenon across the healthcare system. Across the nation, full treatment programs commonly put substance dependent men and women who present for treatment on waiting lists. This measure of access has been largely ignored in the substance abuse literature (Downey et al., 2003). Available research indicates that limited treatment access can negatively affect treatment utilization, including motivation and adherence (Rapp, et al., 2006; Rooney & Hanson, 2001; Tsogia et al., 2001). For instance, some studies have found that by the time a treatment slot becomes available, the deferred individuals often have lost touch with the program or no longer desire treatment (Tsogia et al., 2001). Waiting for treatment has also been shown to negatively affect a client's perception of care with regard to the usefulness of treatment and general satisfaction with care (Klag et al., 2008).

It is widely known in the field that "access" to publicly funded treatment is largely dependent upon external factors, including funding and availability, which differentially affects waiting lists for distinct treatment settings/modalities. The access issue for entering residential programs, for example, is different than that for other treatment types/modalities, as residential program beds are very limited. In this context, it is not a matter of programs not providing adequate access to care, but rather a matter of limited availability or capacity constraints. Because of these capacity issues, which are not necessarily in control of programs, research suggests that interim therapeutic interventions (i.e., counseling or medication) for clients on a waiting list for residential treatment can be a significant tool as it exposes clients to some degree of structure and helps them ease into a more intensive, full-service program and accommodate their lifestyle to the structure required in the full service program (Rapp, et al., 2007; Schwartz, R.P., et al., 2006;). In contrast, this capacity constraint in outpatient treatment modalities is less problematic. Here, research suggests that process improvement strategies, such as those suggested by the Network for Improving Addiction Treatment (NIATx) are important for improving access and reducing treatment wait time. Hence, access should be examined separately by each treatment type/modality, not as a composite (episode).

Figure 3 highlights how waiting list time varied by treatment type/modality. As can be seen, CalOMS admission data are reflective of these capacity issues, such that clients admitted to residential programs (both long-term and short-term) waited the longest (10.4 $\pm$[50] 27.6 days and 6.8 $\pm$ 16.1 days, respectively). Clients entering outpatient programs and non-NTP programs waited an average of 3 days. The shortest waiting list times were among narcotic treatment program (NTP) clients, averaging about 2 days.

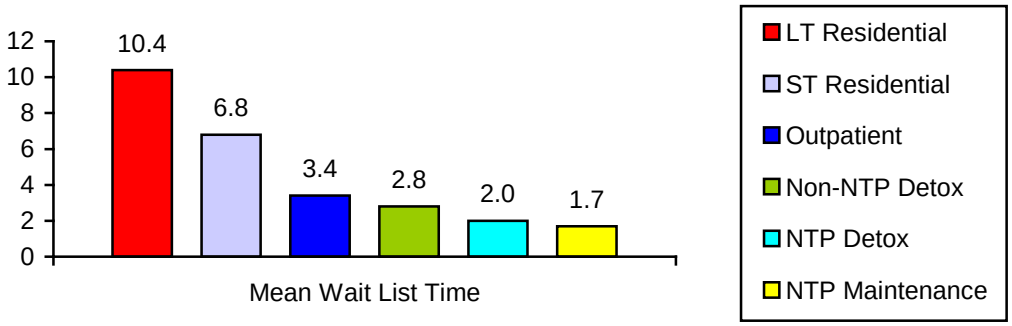
[47] Data discussed with regard to access comes from a self-report measure that asks: "How many days was the client on a waiting list before being admitted to this treatment program?"

[48] Service capacity is included with the access performance measure, although data on service capacity and treatment need is not available in CalOMS.

[49] It should be noted that appearance on a wait list is simply one way to examine access and by no means do these results imply that this is an adequate or valid performance measure of access.

[50] The $\pm$ notation refers to the mean plus or minus the standard deviation from the mean.

Figure 3: Access by Treatment Type/Modality



Retention

Retention of clients in treatment is considered by many in the field of addiction to be an important indicator of treatment success (De Leon 1990, Hubbard, et al., 1997; Simpson, 1981); however lack of retention is also one of the greatest challenges interfering with treatment effectiveness in substance abuse programs (Stahler, et al. 1993; Sia, Dansereau & Czuchry 2000). As indicated by Anglin and Hser (1990), the time spent in treatment does not directly mediate good outcomes; rather staying in treatment enables the client to acquire new skills and to make progress in the program, and this benefit increases with more time in the program. Further, because most individuals in substance abuse treatment programs have chronic and complex problems, it is to be expected that the longer they remain in treatment, the greater the likelihood that significant lifestyle improvements will be achieved and consolidated (Joe, Simpson, & Broome, 1999).

Retention was examined using treatment episode data, meaning that results should be interpreted as retention for a treatment episode (i.e., the sum of the time in a single service set or multiple service sets across various treatment types/modalities). See Technical Notes 1 and 2 for more details on the analysis procedure of treatment episodes. Given the wide degree of variability within treatment episodes, as discussed above under the continuity of care measure, results of retention should be examined separately, particularly since results are calculated beginning with the first treatment the client entered at admission. It is also important to keep in mind that retention for a single service set will differ by treatment type/modality. For instance, short-term residential programs are typically delivered over a month (30-day period), whereas long-term residential programs usually range from 3 to 12 months. Detoxification (non-NTP) programs are commonly used to stabilize clients from acute withdrawal problems and typically range from 3 to 21 days. Outpatient programs are the most variable, with treatment durations averaging more than 100 days. Treatment duration of narcotic treatment programs (methadone maintenance) can have an indefinite time period, but typically range between 18 to 24 months.

Using CalOMS data, retention was examined using the following measures: average and median[51] length of stay (in days), length of stay for 60 days or more, and length of stay for 90 days or more. Clinical research has found that the latter two measures are benchmark or "optimal minimal doses" of treatment for producing positive client outcomes (Gerstein & Harwood, 1990; Hubbard, 1989).

Retention of clients initiating treatment in NTP settings was 523.9 ± 844.6 days for maintenance and 71.6 ± 201 days for detoxification. Approximately 66.4% of clients entering maintenance programs stayed in treatment for at least 90 days, with 72.5% remaining in treatment for at least 60 days. Retention for clients initiating treatment in outpatient settings averaged 149.5 ± 178.9 days, with 54.5% remaining in treatment for at least 90 days and 65% for at least 60 days. Clients starting treatment in long-term residential programs stayed in treatment for an average of 93.0 ± 93.9 days. Slightly over half of these clients (54.5%) stayed in treatment for 60 days or more, while fewer stayed for 90 days or more (41.4%). Clients starting treatment in short-term residential programs stayed in treatment for an average of 38.3 ±

[51] Median results are listed in each of the tables at the end of the chapter.

61.0 days. Clients entering non-NTP detoxification programs[52] remained in treatment for an average of 22.8 ± 58.1 days.[53] Because treatment durations for short-term residential and detoxification programs are designed to be shorter in length, applying retention benchmarks for these programs is not useful. A better performance measure for these modalities may be the extent to which clients discharging from these short-duration treatment settings go on to another level of care, as was discussed earlier under the continuity of care section.

Overall, these retention results are consistent with those reported in the literature, as a growing body of studies typically report rates of retention from 25% to 75%, depending on the treatment modality and definition of "drop-out" (De Leon et al., 2000; Hiller, Knight & Simpson 1999, Joe et al., 1999; Lang & Belenko 2000; Stahler, Cohen & Shipley 1993; Veach, Remley & Kippers 2000).

Completion

Client drop-out is of great concern in substance abuse treatment, given that completion has been a major focus in treatment evaluations (Simpson & Joe, 2004). A substantial amount of literature supports the notion that clients who complete treatment will have better long-term outcomes than those who leave prematurely (DeLeon, Wexler & Jainchill, 1982; Gossop et al., 2001; Hubbard, 1992; Simpson, 2006). The same treatment episode measurement methods described above regarding retention also need to be considered when interpreting results for completion. For instance, completion may be a totally irrelevant or a counterproductive concept with programs that are ongoing, in which the optimal treatment plan is for maintained treatment involvement for a very long time (in some cases, a lifetime), such as NTP maintenance programs. So, rather than using "completion" for this modality, a better performance indicator for NTP programs would be the percent of clients in treatment for 365 days or more. Moreover, for detoxification services, a better performance indicator would be the percent of clients that transfer to another treatment modality.

CalOMS has eight different discharge status codes that a client can receive upon discharge from treatment, two of which include treatment completion (codes 1 and 2) as described in the box below.[54]

CalOMS Discharge Status

	N (%)
1. Completed Treatment, Referred	32,160 (20.9%)
2. Completed Treatment, Not Referred	25,851 (16.8%)
3. Left Before Completion with Satisfactory Progress, Referred	9,903 (6.4%)
4. Left Before Completion with Satisfactory Progress, Not Referred	14,590 (9.5%)
5. Left Before Completion with Unsatisfactory Progress, Referred	16,690 (10.9%)
6. Left Before Completion with Unsatisfactory Progress, Not Referred	50,690 (33.0%)
7. Death	381 (0.3%)
8. Incarceration	3,443 (2.2%)

As shown above, 37.7% of total treatment episodes received a status of completion (referred or not) at the end of an episode. Examining treatment episode data by initial treatment type/modality, completions

[52]It should be noted that ADP Office of Applied Research is excluding detoxification-only services from retention and completion statistics and SACPA allocations.
[53]Some CalOMS discharge records are included in the analysis where the lengths of stay are abnormally long (i.e., detoxification), where some of these records with very long service stays are for clients that a discharge record was not completed until long after the client actually left, thereby artificially inflating the time in treatment. Future analyses could statistically control for this issue. See Technical Note 2 at the end of this chapter for further discussion.
[54] For a review of discharge codes and definitions see Appendix A.

varied. There were high proportions of completions among clients who initiated treatment in either short-term residential programs or non-NTP detoxification programs (68.1% and 64.7%, respectively).[55] Approximately 46.4% of clients who initiated treatment in long-term residential programs completed treatment. Among clients who initiated treatment in outpatient programs, 33.8% completed treatment. Treatment completion among clients who initiated in NTP settings was less common: 25% in NTP detoxification and 14.4% in NTP maintenance. This latter finding is expected given that for many NTP maintenance programs the underlying goal is "maintenance for life." These completion results are similar to what is seen across other treatment studies (Maglione, Chao & Anglin, 2000).

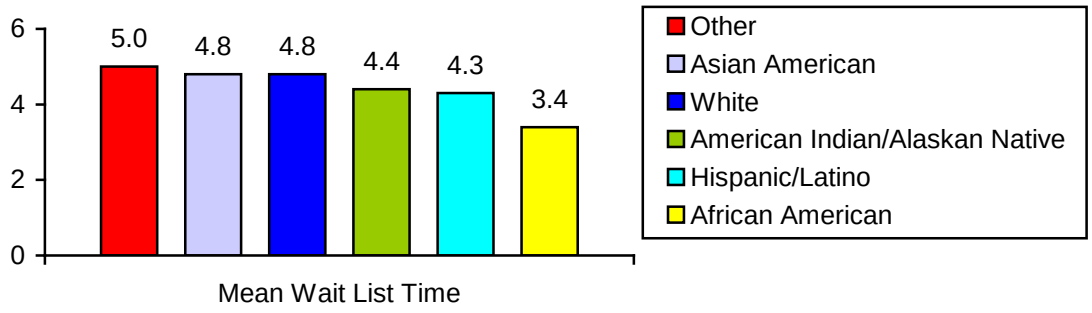
CALOMS PERFORMANCE MEASURES AND CLIENT CHARACTERISTICS

This section describes CalOMS performance measures by key sociodemographic characteristics of clients (Tables 3-5). These factors are important to consider as research shows that they differentially affect treatment entry rates after waiting for treatment (Downey et al., 2003), retention in treatment (Amodeo et al., 2008; Siqueland et al., 2002), and treatment completion (Simpson & Joe, 2004).

Access by Sociodemographic Factors

CalOMS data indicate that female clients spent slightly fewer days on a treatment waiting list than did male clients (5 vs. 4 days). This finding is positive as other treatment studies indicate that females tend to encounter multiple barriers to treatment access (Downey et al., 2003). Figure 4 shows that African American clients had the shortest average number of days on a treatment waiting list (3 days) and that longer wait times were experienced by Asian American clients, White clients, and "Other" race/ethnicity clients (approximately 5 days). These results contrast with the large body of literature on differences in access to and utilization of health care services among minorities (Deck & McFarland, 2000; LaVeist, 2001).

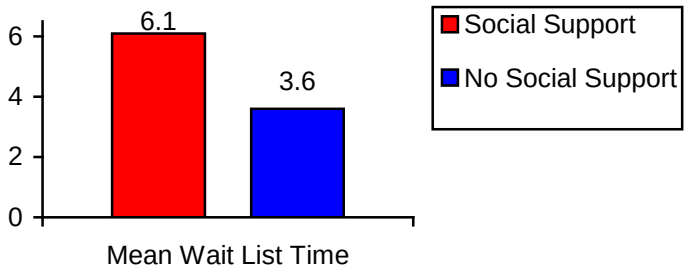
Figure 4: Access by Race/Ethnicity



Involvement with Social Support. Clients without social support involvement (defined as participation in AA meetings, church support groups, and other recovery support meetings) in the past month at admission spent substantially less time on a waiting list than those with social support involvement (3.6 ± 16.3 vs. 6.1 ± 20.5) as shown in Figure 5. Given that treatment need is a function of the severity of conditions (Hadorn, 2000), it is important to understand participation in social support activities prior to treatment. Results from the SACPA evaluation have observed that in the criminal justice system, if there is not an immediate treatment opening, judges will often order the offender to attend 12-step groups until a spot opens up.

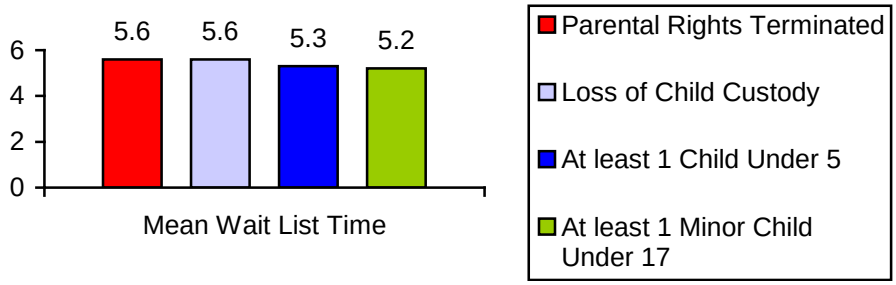
[55]Short-term residential and detoxification services in general often set reduced or only intermediate goals. Therefore direct comparisons of completion rates for these service types with other longer term services should not be made.

Figure 5: Access by Social Support



Parental Status & Dysfunction. Research shows that women with small children are at risk for poor treatment initiation due to the lack of emotional support, financial resources, childcare, or transportation (Green et al., 2002; Mertens & Weisner, 2000). As shown in Figure 6, CalOMS data indicate that clients with a minor child (under the age of 17) were on a treatment waiting list an average of 5 days. Similarly, clients who reported a loss of child custody (i.e., children living elsewhere due to court order) or terminated parental rights waited close to 6 days.

Figure 6: Access by Parental Status & Dysfunction



Retention & Completion by Sociodemographic Factors

Client characteristics can greatly influence the treatment process and have been shown to be determinants of treatment retention and completion (Joe et al., 1994).

Gender. Women in treatment for substance abuse have been reported to have more severe problems at assessment than men (including responsibility for caring for dependent children, psychological functioning, and histories of trauma) and as a result are at higher risk for premature treatment drop-out than men (Arfken et al., 2001; Sayre et al., 2002; Simpson, Joe, Broome, et al., 1997a). Although some treatment studies have observed that women stay in treatment longer than men (Broome, Flynn, & Simpson, 1999), the majority of studies show that men are more likely to stay in treatment longer than women (Baekeland & Lundwall, 1975; Mammo & Weinbaum, 1993; McCaul, Svikis, & Moore, 2001; Stark, 1992).

As shown in Figures 7 and 8, CalOMS data indicate that females have longer lengths of stay over a treatment episode than males (153.3 vs. 133.8 days) and were more likely to remain in treatment for clinical benchmarks of 60 days or more (57% vs. 53.9%) and 90 days or more (47.4% vs. 44.2%). However, females were less likely to complete treatment than males during a given treatment episode (37% vs. 39.6%). A potential reason for males having shorter mean average episodes and higher rates of completion is that they have a higher percentage of detoxification services. Because women tend to have unique substance abuse treatment needs from men, Hser and colleagues (1999) suggest that matching clients to treatment based on such gender-specific needs can result in longer stays in treatment and successful outcomes.

Figure 7: Retention by Gender

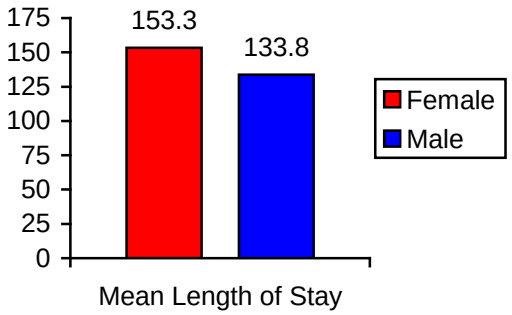
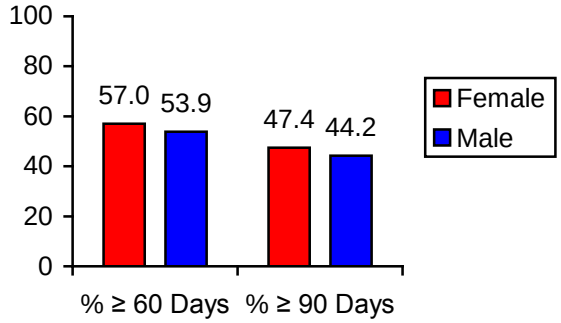


Figure 8: Benchmark Retention by Gender



Race/Ethnicity. Race/ethnicity has been found to be associated with length of stay (McCaul et al., 2001). In a study based in a health maintenance organization outpatient alcohol and drug treatment program, characteristics predictive of longer retention included belonging to racial/ethnic groups other than African American (Mertens & Weisner, 2000). CalOMS data support this research, showing that in addition to the "Other" racial/ethnic group, African Americans had the shortest average length of stay in treatment, which may speak to the finding that they are mostly entering outpatient treatment, rather than intensive residential settings that tend to have a longer wait. Asian/Pacific Islanders had the longest time in treatment compared to the other groups (Figure 9). As shown in Figure 10, White and Asian/Pacific Islander clients had the highest proportion of treatment completion over a treatment episode (42.4% and 41.3%), and Latino and African American clients had the lowest (35.4% and 34.9%). A lack of attention is given to race/ethnicity in the treatment literature (McNeece, Springer, & Arnold, 2001; Rhodes & Jason, 1990), despite their clear importance to effective and appropriate delivery of treatment to this population (Anglin et al., 1992). This important issue is further compounded when one considers that cultural sensitivity in treatment design and delivery has been essentially ignored in the research literature (Bloom, 1999; Covington, 1998; Rhodes & Jason, 1990) and that this type of focus may be critical for enhancing client retention.

Figure 9: Retention by Race/Ethnicity

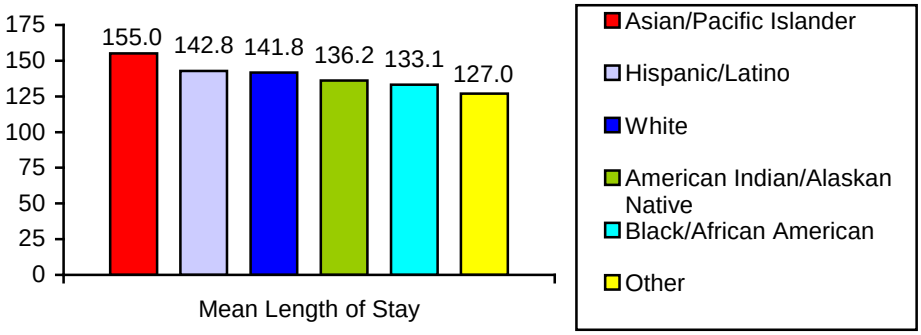
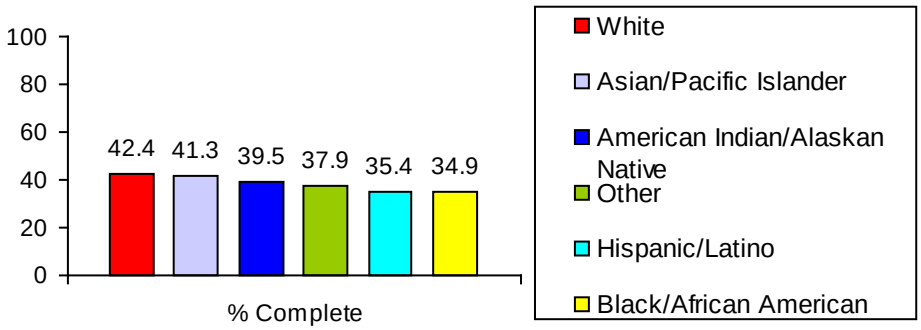


Figure 10: Completion by Race/Ethnicity



Employment & Education. Research has consistently shown that stable employment and education are strong predictors of increased retention and completion (Anglin, et al. 1990; Kelly, Blacksin, & Mason, 2001; Knight, Logan, & Simpson, 2001; Mertens & Weisner, 2000; Veach, et al. 2000;). CalOMS data supports past research on employment, in that that CalOMS clients who were employed had longer lengths of stay and were more likely to complete treatment over a treatment episode than unemployed individuals (see Figures 11-13). Similarly, as shown in Figure 14, clients with some college or who graduated college had the highest rate of completion (45.5%) compared to those with only a high school education (40.4%) and those with less than a high school education (34.2%).

Figure 11: Retention by Employment

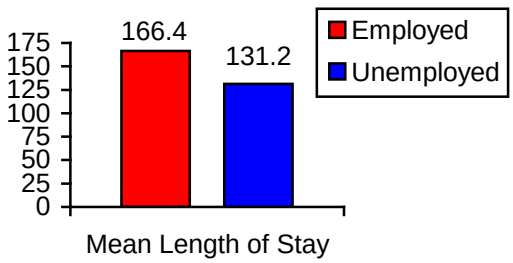


Figure 12: Benchmark Retention by Employment

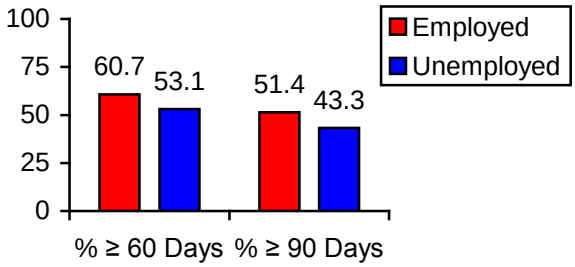


Figure 13: Completion by Employment

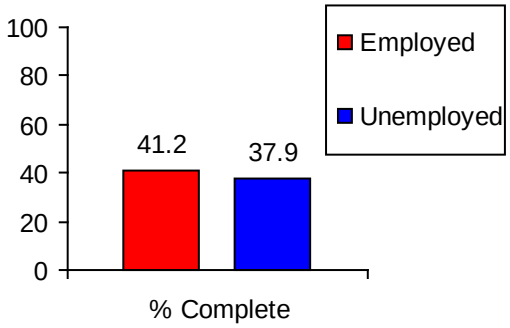
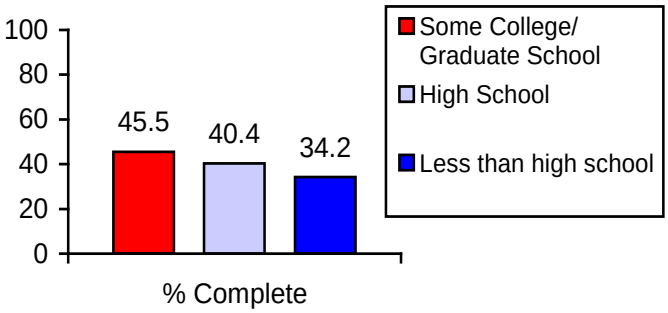


Figure 14: Completion by Education



Social Support Involvement. Involvement with social support (i.e., AA meetings, church support groups, and recovery support meetings) before treatment entry has been shown to be a consistent predictor of successful treatment response (Havassy et al., 1991; McLellan et al., 1994) and treatment completion (Etheridge et al., 1999; Fiorentine & Hillhouse, 2000). CalOMS data lend support to past research, as CalOMS clients who reported involvement in social support activities spent more time in treatment over a

treatment episode than did clients reporting no social support (119.9 ± 226.1 and 118.9 ± 148.5) and that a higher proportion of those with social support involvement remained in treatment 60 days or more (58.2%) and 90 days or more (47.5%; Figures 15 and 16). Similarly, clients involved in social support activities before treatment were more likely to complete treatment than those without involvement (43.9% vs. 35%).

Figure 15: Retention & Social Support Involvement

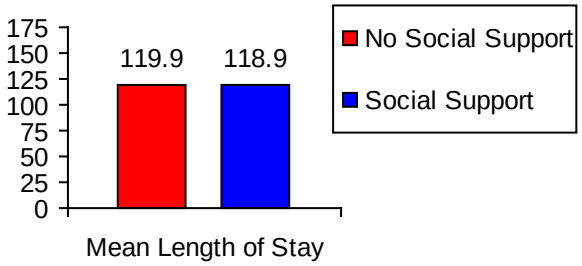
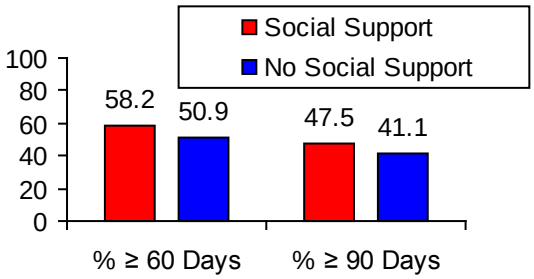


Figure 16: Benchmark Retention & Social Support Involvement



Serious Family Conflict. Past research indicates that interpersonal distress due to conflicts within families and other relationships is associated with poor treatment response (Tucker et al., 1991). Findings from CalOMS data support this research as highlighted in Figure 17: clients with serious family conflict in the month before treatment entry had shorter stays over a treatment episode than those without such conflict (95.6 ± 151.4 vs. 122.1 ± 212.6). In addition, they were less likely to remain in treatment for the two benchmark doses, as show in Figure 18.

Figure 17: Retention by Family Conflict

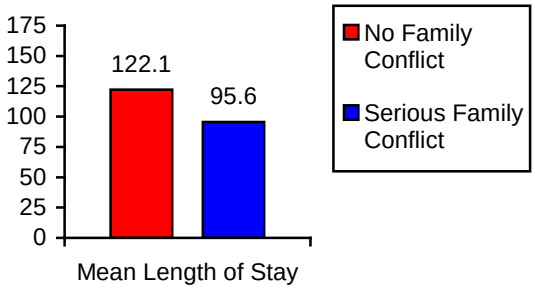
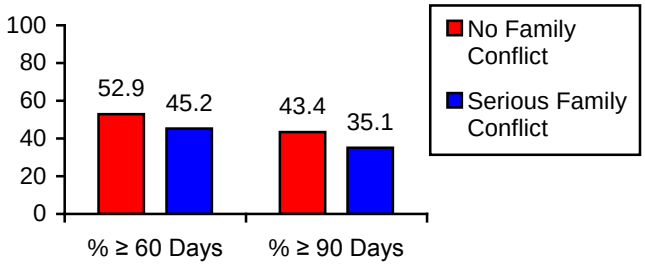


Figure 18: Benchmark Retention by Family Conflict



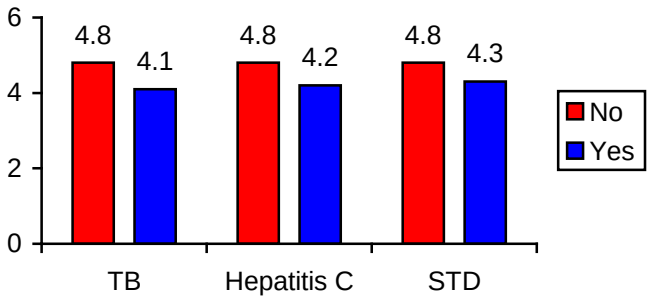
CalOMS Performance Measures by Health Status Factors

This section describes CalOMS performance measures by health status factors among clients (Tables 6-8).

Access

Infectious Disease Status. Clients with an infectious disease spent less time on a treatment waiting list than those without one, as shown in Figure 19. Clients with infectious disease status of tuberculosis, hepatitis C, or sexually transmitted infections spent about a day less on a waiting list than those without such infections.

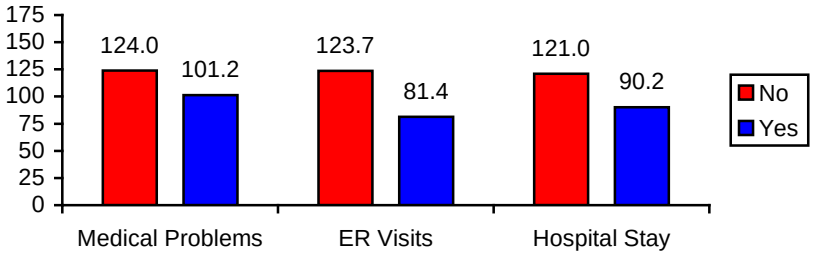
Figure 19: Access by Infectious Disease Status



Retention & Completion

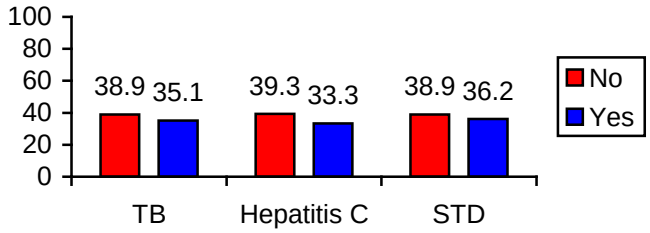
Medical Health. Research examining the impact of medical problems on treatment participation has demonstrated that poor health status and medical problems can negatively affect length of treatment stay (Moos et al., 2002). CalOMS data reflects this, as CalOMS clients experiencing medical problems or receiving medical treatment in the month before treatment admission had shorter treatment stays over a treatment episode than those without such problems or medical treatment (Figures 20).

Figure 20: Retention by Medical Health (past 30 days)



Infectious Disease Status. Completion rates were lower among clients with an infectious disease status at admission compared to those without such a status, as shown in Figure 21.

Figure 21: Completion by Infectious Disease



CalOMS Performance Measures by Substance Use Disorders

Given the unique characteristics associated with different substance use disorders,[56] we examined performance measures by primary, secondary, and primary plus secondary substance use (i.e., polydrug use proxy measure). Not only have certain illicit drugs, such as heroin, crack cocaine, and

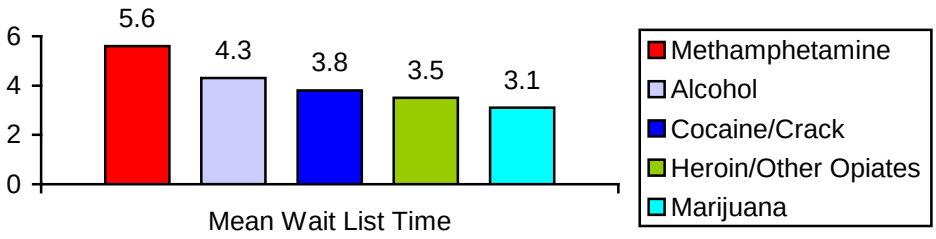
[56]Chapter 1 describes the unique characteristics associated with various substance use disorders.

methamphetamine had a major impact on the treatment needs of clients, research has shown that heroin use (Havassy et al., 1991), methamphetamine use (Brecht et al., 2005; Hillhouse et al., 2006), crack cocaine use (Gainey et al., 1993; Reiber et al., 2002), and alcohol use (Babor et al., 1988; Havassy et al., 1991) can differentially affect treatment retention and completion. Tables 9-11 describe performance measures by substance use disorders.

Primary Substance Use

Access. As shown in Figure 22, individuals entering treatment for primary methamphetamine use were on a treatment waiting list the longest, averaging about 6 days (5.6), compared to users of the other primary substances. Clients admitted for primary marijuana use spent the fewest days on a waiting list, averaging 3.1 days.

Figure 22: Access by Primary Substance Use



Retention & Completion[57]

Primary heroin/opiate users stayed in treatment a long time over a treatment episode (230.5 ± 545.4 days) and had low rates of completion (27.3%). These findings are expected given that the treatment type/modality for heroin/opiate users tends to be NTP maintenance programs that are characterized by longer treatment durations where ongoing maintenance and not completion are often the primary goal. Further research might examine how primary heroin/other opiate users performed in non-NTP programs to get a sense of treatment compliance outside of a NTP treatment setting. Clients reporting primary marijuana use were retained in treatment over a treatment episode an average of 133.5 days, with 33.4% completing treatment. Primary methamphetamine users remained in treatment over a treatment episode for an average of 126.9 days, which was more than for users of its stimulant counterpart, cocaine/crack (114 days), although completion among stimulant users was relatively similar: methamphetamine: 40.7% and cocaine/crack 40.3%. Primary alcohol users stayed in treatment for an average of 102.6 days over a treatment episode and had high rates of completion (48%), which is most likely a result of the tendency for alcohol users to have higher admissions in detoxification programs that have short durations and, therefore, create a higher likelihood for client completion.

CalOMS Performance Measures by Priority Groups

Treatment access, retention, and completion have been shown to be important factors of treatment outcomes among substance abusers with special needs as these groups are considered to be particularly vulnerable for continued use and relapse (McLellan & Hunkeler, 1998; Tsogia et al., 2001). Tables 12-14 describe results for performance measures by priority groups.

[57] It should be noted that because each of these primary substances have specific treatment modalities designed to specifically treat the problem, these performance data should not be used to compare substances against each other, but rather they should be considered separately by treatment modality. For example, heroin addicts look like the champions of retention. However, that is not because they are easier to treat, but rather because they are receiving treatment that is by nature longer than what most other drug users receive (i.e., methadone maintenance). Similarly, primary users of other substances who go into non-NTP detoxification or residential settings, for example, have shorter retention and higher completion because the modalities are shorter, not because the substance-using groups are poorer performers.

Women's Groups

An important priority group of women examined in this chapter is pregnant women. In studies of substance abuse treatment, pregnancy is an event that presents barriers to seeking, retaining, and completing treatment among women (Ayyagari et al., 1999; DeAngelis, 1993; Finkelstein, 1994; Grella, 1997).

Retention & Completion

Pregnant women with substance use disorders may delay or avoid seeking treatment for fear of stigmatization or legal repercussions (Associated Press, 2003; Chavkin et al., 1998; Paltrow, 1998). For example, 14 states consider substance use during pregnancy to be child abuse under civil child-welfare statutes, and 9 states require health care professionals to report suspected prenatal substance abuse (Figdor & Kaeser, 2005). Figure 23 shows retention of CalOMS pregnant women and women of childbearing age (15 to 44 years old): pregnant women stayed in treatment for an average of 172.7 ± 307.4 days; which is longer than that for non-pregnant women (147.0 ± 282 days).

As shown in Figure 24, completion for pregnant women was lower than for non-pregnant women (38.3% vs. 61.7%). Past research also shows that pregnant women are at increased risk for performing poorly in programs (Nelson-Zlupko, Dore, Kauffman, & Kaltenbach, 1996). Longer stays in treatment among pregnant substance abusers is important given that it is associated with improved pregnancy and neonatal outcomes (Kissin et al., Stitzer, 2004). In a drug treatment program for pregnant and postpartum women in New York City, for example, increased length of stay was associated with less maternal drug use, greater mean birth weight, and less intrauterine growth retardation among infants (McMurtrie et al., 1999).

Figure 23: Retention by Women

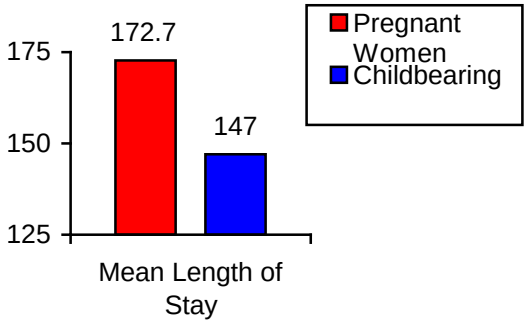
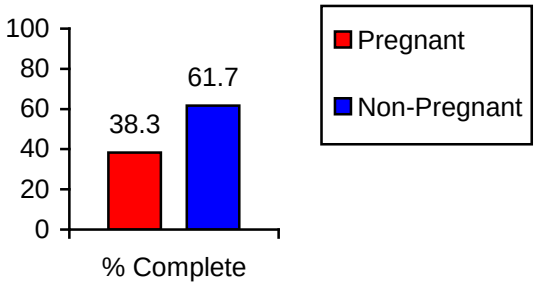


Figure 24: Completion by Women



Age Groups[58]

Access. Examining access patterns by priority age groups, CalOMS data indicate that adolescents (aged 12-17) spent fewer days on a waiting list (1.6 ± 8.0) than adults aged 55 and older (3.7 ± 13.1), although young adults (aged 18-24), on average, spent the most time on a waiting list (4.7 ± 20.4) when compared to these other two age groups.

Retention & Completion

Age has been shown to be a significant predictor of treatment response, as some reports show that older adults remain in treatment longer than younger adults (Wickizer et al., 1994). In addition, past research has found that younger aged clients are at high risk for poor treatment adherence and early drop-out (Brecht et al., 2005). CalOMS data supports these past studies, as older aged CalOMS clients (55 years

[58]An abbreviated set of outcome information was collected from youth 17 and younger in CalOMS.

and older) remained in treatment the longest (mean 170 days), whereas the young adult group (18-24) remained in treatment for fewer days (mean 124 days; Figures 25 and 26). Similarly, older adults 55 and older (43.5%) had the highest proportion of completion compared to youth 12-17 (28.1%) and young adults 18-24 (36.1%). These findings may be related to the tendency for older adults to be enrolled in longer-term programs (i.e., NTP maintenance). It's important to acknowledge the research that has found that adults older than 65 are at risk for early treatment drop-out, given the medical and psychiatric complexities they may suffer, such as depression and cognitive impairment (Satre et al., 2004).

Figure 25: Retention by Age

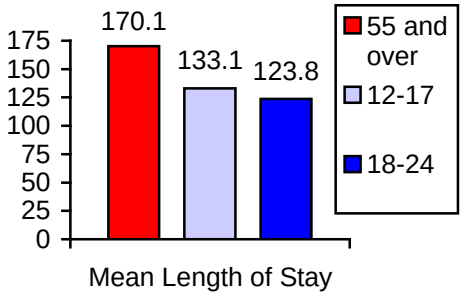
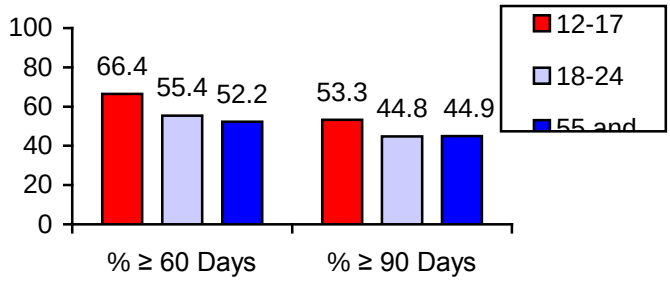


Figure 26: Benchmark Retention by Age



Individuals with Lifetime Mental Illness

Retention & Completion

Research shows that clients with psychiatric symptoms and disorders at intake to treatment are at risk for poor treatment engagement and early treatment dropout (DeLeon, 1984; McLellan & Wisner, 1996). However, research results on treatment response among individuals with co-occurring psychiatric disorders have not been uniform. Some studies show that clients with psychiatric conditions have poorer treatment adherence rates than those without such mental problems (Carroll et al., 1993), whereas other research indicates that clients with psychiatric problems, particularly depression, stay longer and become more invested in treatment (Agosti et al., 1991; Joe et al., 1995). CalOMS data show that clients who reported being diagnosed with a mental illness during their lifetime had a shorter length of time in treatment and were less likely to complete treatment over a treatment episode compared to clients without self-reported mental illness disorders, as displayed in Figures 27 and 28.

Figure 27: Retention by Lifetime Mental Illness Diagnosis

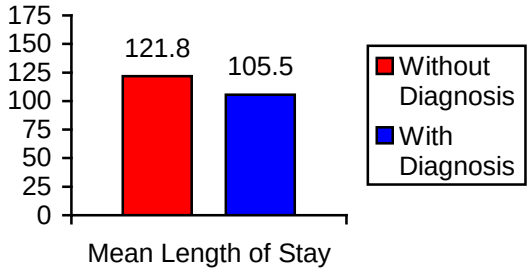
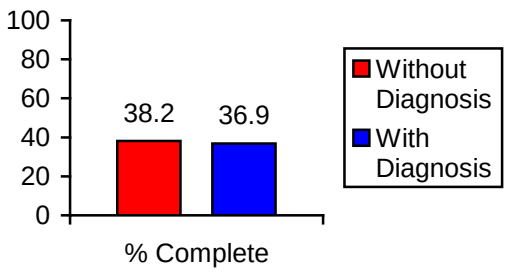


Figure 28: Completion by Lifetime Mental Illness Diagnosis



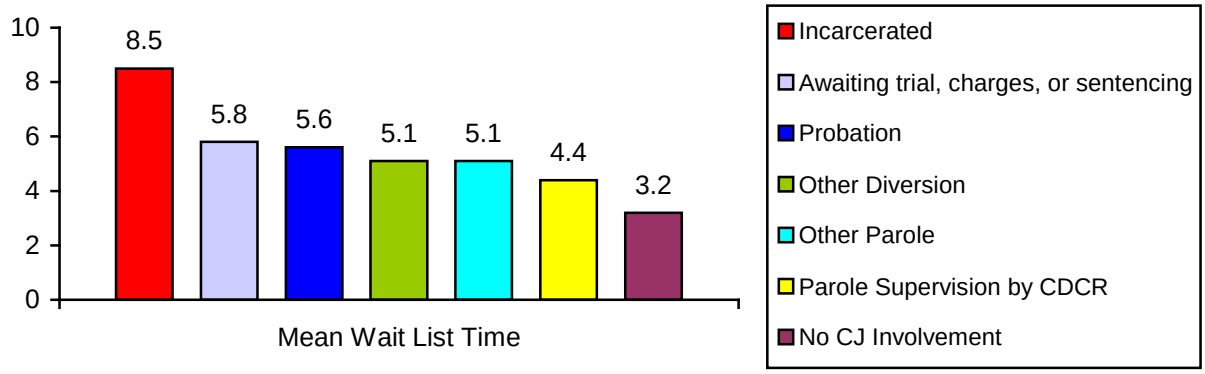
Individuals with Criminal Justice Involvement

Access

CalOMS data indicate that individuals involved with the criminal justice system spent more days on a treatment waiting list than those without such involvement. Clients who spent the most time

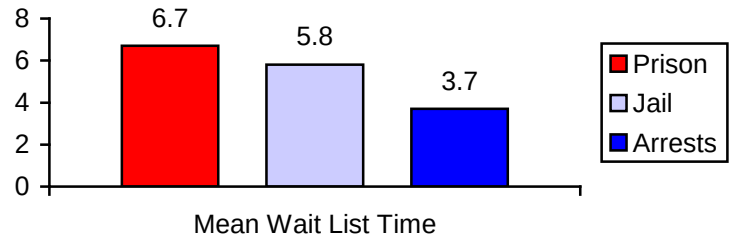
on a waiting list were individuals who were incarcerated in the month before admission (8.5 ± 13.3 days).[59] Waiting list time for treatment averaged between 5 to 6 days for individuals with criminal justice involvement, as shown in Figure 29. Research has found that motivation and readiness among criminal-justice-involved clients are important determinants of engagement in treatment that can be negatively impacted by longer waiting time (Simpson et al., 1997a; Anglin and Hser, 1990).

Figure 29: Access by Criminal Justice Involvement



As shown in Figure 30, clients that had at least one arrest within the previous 30 days spent fewer days, on average (3.7 ± 13.1) than those who had not been arrested in the past 30 days (4.5 ± 18.5). On average, clients that had spent at least one day in jail during the past 30 days spent more days on a waiting list than clients who had not spent any time in jail (5.8 ± 17.7 vs. 4.5 ± 18.9, respectively). Similar to the mean wait among clients with jail time, clients that had spent at least one day in prison within the previous 30 days also, on average, were on a waiting list longer than clients who had not spent any time in prison (6.7 ± 33.4 vs. 4.7 ± 18.1, respectively).

Figure 30: Access by Criminal Involvement in Past Month



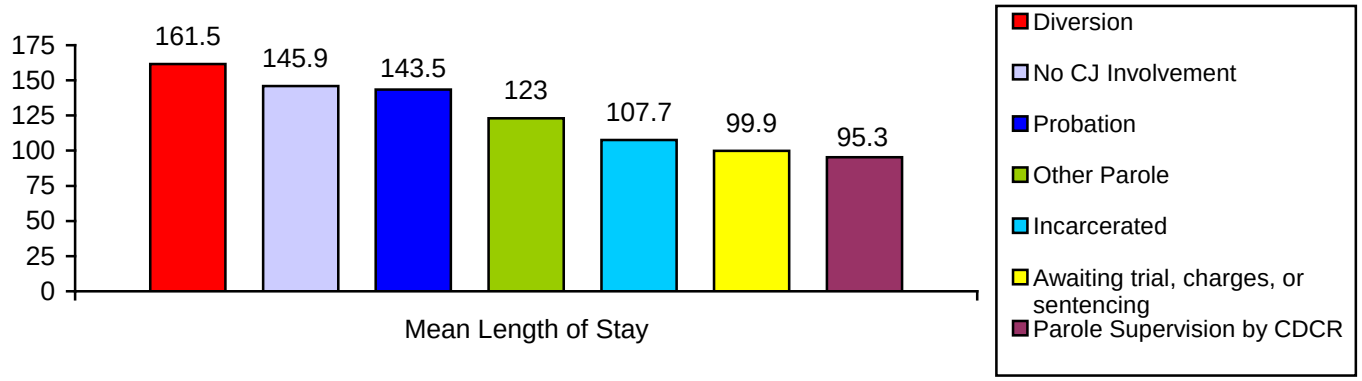
Retention

Studies have found that involvement with the criminal justice system has been associated with longer stays in treatment (Green et al., 2002; Grella et al., 1994; Nishimoto & Roberts, 2001). However, some research indicates that clients with criminal justice involvement tend to be harder to treat and retain (Lang & Belenko, 2000). CalOMS data show that clients under parole supervision through the California Department of Corrections and Rehabilitation (CDCR) had the shortest length of stay (95.3 ± 181.7 days), followed by clients who were awaiting trial, charges or sentencing (99.9 ± 119.2 days) during a treatment episode. Clients who were admitted under

[59]Waiting list time is self-reported. Therefore, the increased waiting time for incarcerated clients may be the result of the client including incarceration time in their count of days waited and not necessarily because of program slot unavailability or lack of capacity. This issue speaks to the impact of the quality of the data collected on this measure and therefore the need for further investigation.

diversion[60] or did not have any criminal justice involvement had the longest length of stay during a treatment episode (161.5 and 145.9, respectively), as shown in Figure 31.

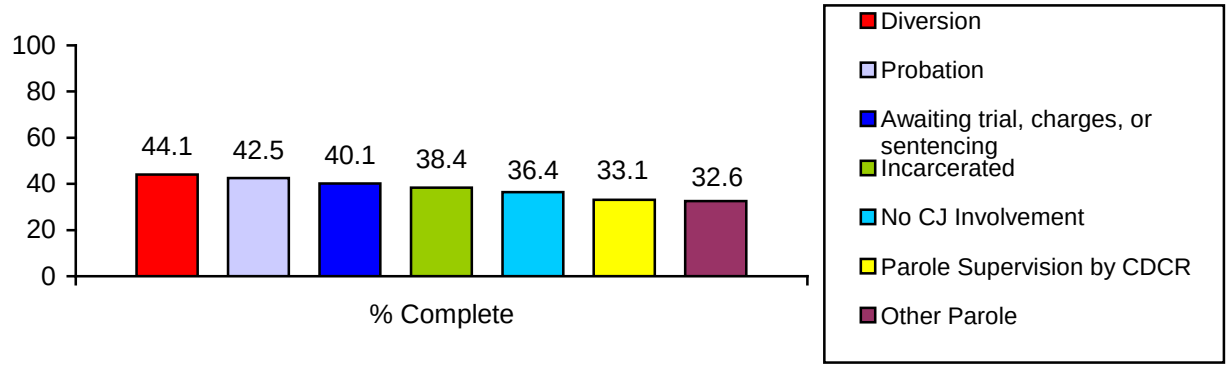
Figure 31: Retention by Criminal Justice Involvement



Completion

As shown in Figure 32, 36.4% of clients without criminal justice involvement completed treatment during a treatment episode. Clients under "diversion" were the most likely to complete treatment (44.1%), followed by those who were on probation (42.5%) during a treatment episode. Approximately 40.1% of clients awaiting trial, charges, or sentencing completed treatment during a treatment episode. About 38.4% of clients who were incarcerated completed treatment during a treatment episode. Clients under parole supervision by the CDCR and under parole from any other jurisdiction had similar proportions of completion during a treatment episode (33.1% and 32.6%, respectively).

Figure 32: Completion by Criminal Justice Involvement



Injection Drug Users

Retention & Completion

Research has shown that injection use is a substantial risk factor for poor retention across treatment modalities (Brecht et al., 2005). According to CalOMS data (Figure 33), clients who reported injection drug use at least one time in the previous month stayed in treatment a shorter time than did clients who reported no injection use in the previous month (116.3 vs. 124 days). Clients reporting injection use in the previous 12 months were more likely to stay in treatment longer than those that did not use needles (195.1 vs. 130.6 days). This latter finding is likely an artifact of the fact that clients who inject are more likely to be in longer-duration treatment programs (i.e., NTP maintenance). Similarly, as shown in Figure 34, clients who did not use needles in the previous month and previous year before treatment were more likely to complete treatment compared to those who used needles.

[60] Clients who were admitted under other diversion from any court under California Penal Code, Section 1000.

Research shows that retaining high-risk clients (i.e., injection users) in specific treatment modalities such as methadone maintenance or long-term residential care can significantly lower the risk for HIV infection and the transmission of other infectious diseases (Metzger et al., 1993).

Figure 33: Retention by Injection Use

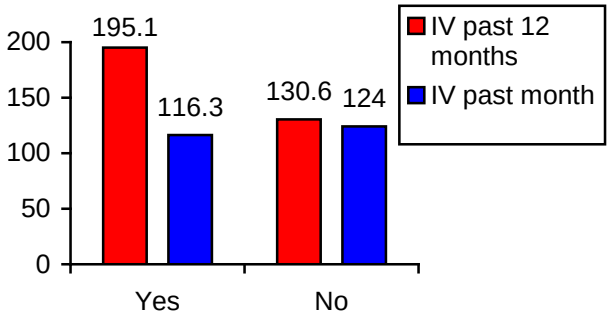
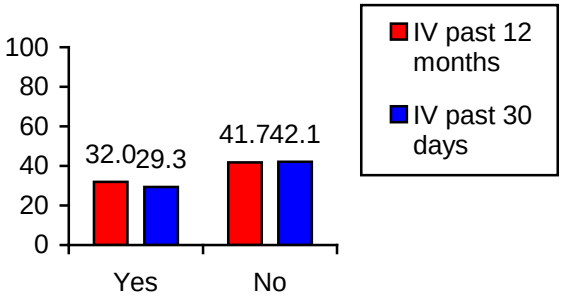


Figure 34: Completion by Needle Use



Disability, Veteran, or Homeless Status

Retention & Completion

Research from Brecht and colleagues (2005) indicates that having a disability is a significant predictor of poor retention. However, CalOMS data shows that the mean length of stay for clients with a disability was longer over a treatment episode (147.8 ± 281.9 days) than the length of stay of clients who did not report a disability (139.7 ± 267.9 days). Over half of the clients with a disability remained in treatment for 60 days or more (57.0%). Veterans had a shorter average length of stay compared to non-veterans (98.0 ± 168.4 days vs. 119.5 ± 203.6 days, respectively). Fewer than half (46%) of clients with a veteran status were in treatment for 60 days or more, and only 37.4% were in treatment for 90 days or more over a treatment episode.

The challenge of retaining clients in substance abuse treatment is intensified when the target population is homeless—drop-out rates of two-thirds or more are common—leading to the conclusion that "retention problems with homeless clients are as or more pervasive than in the general addicted population" (Orwin et al., 1999). Stahler et al. (1993) examined why homeless clients drop out of treatment early by conducting an ethnographic study of homeless male substance users in a large Northeastern city. This study found that in most cases, homeless clients were either pushed away by the treatment milieu for not having stable housing or because of the client's propensity for treatment and "lack of fit" with the treatment program. Furthermore, research shows that lifestyle instability, characterized by frequent moves, negatively impacts an individual's adherence to treatment in terms of "staying in" (Rooney & Hanson, 2001). CalOMS data indicate that the average length of stay for homeless clients was low (77.5 ± 121.5 days) and that few were in treatment for 60 or 90 days or more (40% and 30.9%). Similarly, fewer than half of the homeless clients completed treatment (47%). Although the data for homeless were not calculated by each treatment type/modality, these results suggest that housing is critical since research shows that programs that provide housing have consistently lower drop-out rates (Orwin et.al., 1999).

CalOMS Performance Measures by Referral Source

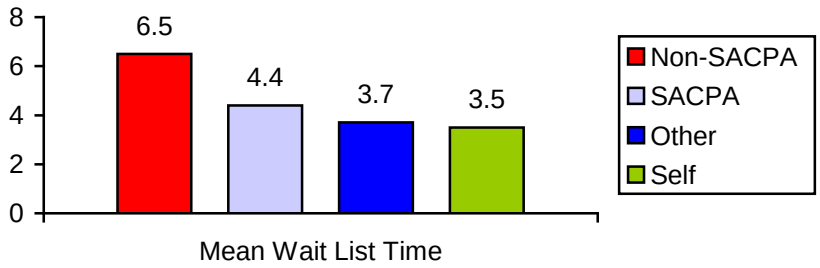
Referral source, which has been shown to be an important indicator of treatment utilization (Tsogia et al., 2001), was examined by performance measures (Tables 15-17).

Access

Clients who were self-referred to treatment spent the least number of days on a waiting list (3.5 ± 15.5) followed by "other" sources of referral (3.7 ± 21.0). Individuals referred to treatment through the criminal

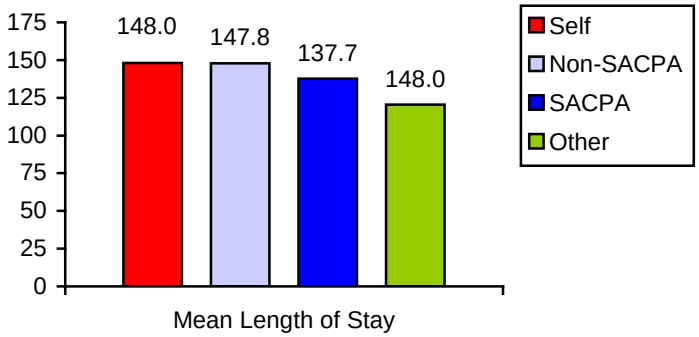
justice system (especially non-SACPA) spent the most time on a waiting list (6.5 ± 21.2 days); those referred through SACPA waited an average of close to 5 days (4.4 ± 14.1) as shown in Figure 35.

Figure 35: Access by Referral Source



Retention. Prior research has associated length of stay in treatment with referral source (Wickizer et al., 1994). Clients who were self-referred to treatment had a higher mean days of treatment (148.0 ± 384.6) during a treatment episode than did clients referred through the criminal justice sources: Non-SACPA: 147.8 ± 187.2 days, and SACPA: 137.7 ± 146.0 days. Clients referred through "Other" sources of referral had the shortest length of stay (120.4 ± 213.1 days) during a treatment episode, as shown in Figure 36.

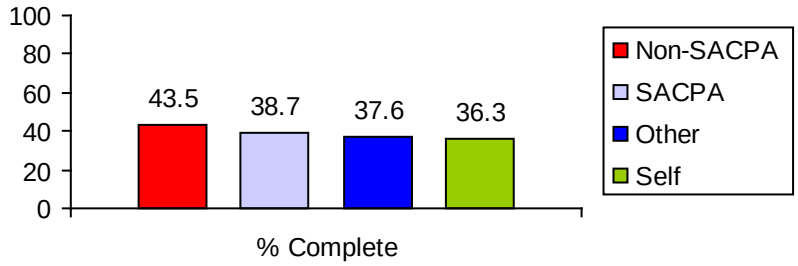
Figure 36: Retention by Referral Source



Completion.[61] As shown in Figure 37, clients who were referred to treatment through the criminal justice system, non-SACPA specifically, had the highest rate of completion (43.5%), followed by those who were referred through SACPA (38.7%) during a treatment episode. About 37.6% of clients who reported "Other" sources of referral completed treatment, whereas clients who were self-referred had the smallest percentage of completion (36.3%) during a treatment episode.

[61] In the recently released SACPA Evaluation 2008 Report, the SACPA completion rate was 32.2%, which differs from the rate found in the current analyses of SACPA-referred clients. This difference is likely due to the differences in methods used to create the treatment episode, as SACPA analysis tracks a cohort of offenders who entered treatment in California State Fiscal Year 2004/05 (4th year of SACPA admissions) using CADDS data.

Figure 37: Completion by Referral Source



Policy, Research, and Practice Implications

Results from this chapter reveal that continuity of care, access, retention, and completion, in most cases, are useful measures to identify areas that programs can improve upon. Although performance measures are considered to be important measures of quality treatment services, California (like most other states) is in the early stages of a major transition to develop a more accountable, continuous system of care, where the use of transparent performance measures is the norm. Deciding which performance measures are important to assess by each treatment type/modality is a first requirement. As was done by the Washington Circle group, key stakeholders across the California treatment system need to work together in order to create a consistent, comprehensive set of performance measures. Because the California treatment system is diverse in treatment settings and clients (as is described in Chapters 1-3), the ideal solution for developing an effective performance and outcome measurement system in California would be to identify a "set of multiple and complementary program performance and client outcome measures" that provide adequate coverage of the diverse programs throughout the treatment system.

Future Directions

This chapter begins to examine potential performance measures collected in CalOMS for the California treatment system. However, findings suggest that a core set of performance measures should be identified that can adequately address a continuum-of-care framework that considers the shift from treating addiction as an acute disorder to a chronic illness. In this respect, a very important measure in the future will be the degree to which a treatment program or system successfully moves a client through a continuum of care.

Limitations

Each of the measures described in this chapter have both strengths and weaknesses.

Continuity of Care

With the existing CalOMS data, the degree to which a client referral is carried out cannot be determined. Furthermore, while there is capacity to measure the degree to which a client is "transferred" to another program or level of care using the admission transaction-type variable collected at admission, investigation of CalOMS data indicate that this measure is not adequately used. Furthermore, with the current data, the extent to which a certain level of care is necessary or appropriate for a particular client cannot be assessed, as no clinical guidelines are collected in CalOMS (e.g., American Society for Addiction Medicine [ASAM] criteria[62]). A substantial number of studies have attempted to "match" particular kinds of clients with specific modalities or settings of treatment (via ASAM criteria) and have shown this method to be effective, although the degree of adherence and fidelity to such criteria varies a great deal among programs (McLellan et al., 1997).

[62] ASAM placement criteria are not a requirement of CalOMS data collection, and the use of ASAM criteria at the program level varies by county.

Access

The data only reflects waiting-list inclusion among clients who reported a wait at admission to treatment. This is limiting, as we do not know how many people left because the wait was too long. Also, this item is self-reported, so it could be under- or overestimated. In addition, the data reported on access is based on admission data and may not reflect or capture the extent of waiting-list time among clients who are transferred to or referred to other levels of care.[63] Another layer not considered is the degree to which waiting-list criteria complies to SAPT rules at the program level. For instance, 45 CFR Part 96 requires that clients be prioritized when programs are at maximum capacity as follows: 1. pregnant injection users, 2. pregnant users, 3. injection users, and then 4. all others. Service capacity is also not readily captured with the existing CalOMS data in terms of assessing the number of clients served compared to the number of individuals in need. For instance, CalOMS data do not capture information relevant to alcohol and drug use patterns from individuals in the prison system, though such information could be used to identify treatment needs of a population not currently accessing treatment services.

Research shows that substance abuse treatment programs for substance-dependent inmates in prison have insufficient capacity and lengthy waiting lists (Tsogia et al., 2001). It appears that many inmates in need of substance abuse treatment have to wait many years to receive it. As of February 2007, California Department of Corrections and Rehabilitation (CDCR) prisons held approximately 90,000 inmates in 70 facilities over the course of the year. Data from the prison system estimates that 77% of the prison population are "identified substance abusers," translating into approximately 69,000 inmates in custody last year. Treatment is provided to only 33,000 inmates each year, and this figure does not represent the actual number of people who have received treatment in that it includes "duplicated individuals," inmates who were enrolled in more than one program during the year or who had multiple admissions to the same program and ere therefore counted as multiple entries. Many inmates are automatically placed on a waiting list for treatment as a result of screening conducted by the CDCR upon entry to prison, although they are unlikely to be placed in a program until they are within two years or less of their earliest possible release date. The result is that thousands of inmates with unmet treatment needs wait, sometimes for years, before they are able to begin addressing their substance abuse problems.

Retention & Completion

Simple retention measures may be very meaningful for some modalities, but may have limitations in assessing performance for all modalities of care. For example, unlike short-term residential and detoxification programs, more treatment exposure is presumed to be the goal in NTP maintenance and outpatient programs; hence longer retention is good and the two benchmark retention measures are meaningful, clinically. Although with long-term residential programs, more may not be necessarily better, but rather the degree to which clients are moved to a different level of care is optimal. These considerations will need to evolve over time as the use of CalOMS data is applied to measurement of treatment performance. Another area that needs further attention is the discharge status of completion, as it is currently a controversial measure across the state. Specifically, because a client's treatment/recovery plan differs between various types of treatment/modalities and within programs, completion requirements vary and the determination of whether a client has completed those plans may be subjective. In addition, some providers may resist use of the discharge status "complete" on the basis of its perceived inconsistency with a chronic illness model of dependence. If stakeholders wish to use treatment completion as a performance measure, then a much more specific, standard definition of completion needs to be created to ensure that completion means the same thing across diverse program settings.

Other Performance Measures

Performance measures of treatment initiation and engagement as identified by the Washington Circle Group are not captured by CalOMS. If used, these measures might provide a better understanding of quality care and service delivery in California. In addition, measurement of a client's perception of care or

[63] CalOMS is designed to capture "transfer/change in service" during admission. Specifically, if the admission is the second in an episode, the provider is supposed to indicate "transfer/change in service" in the admission transaction type field. More work is needed to understand the extent to which providers and counties are using the "admission transaction type" properly.

need for care is lacking. This information is important as it may explain differences in retention and completion. For instance, a client's belief about "how much" treatment is necessary may influence how long they stay in treatment, regardless of program attributes, as was found by Stahler et al. (1993). Additionally, measures of an organization's cultural competence and readiness to implement evidence-based practices and models have been shown to be an important measure affecting client outcomes (Iguchi, 2002). Despite passing mention of the importance of neighborhood context and treatment facility location (i.e., county differences) on treatment retention and completion in the literature (Davis & Tunks 1990-1991; Iguchi & Stitzer 1991; Joe, Simpson, & Sells 1994; Tucker, Vuchinich & Gladsjo, 1991), thoughtful consideration of how performance is affected by these mechanisms is lacking.

REFERENCES

Amodeo, M., Chassler, D., Oettinger, C., Labiosa, W., & Lundgren, L.M. (2008). Client retention in residential drug treatment for Latinos. *Evaluation Program Planning, 31*(1), 102-12.

Babor, T.F., Dolinsky, Z., Rounsaville, B., & Jaffe, J. (1988). Unitary versus multidimensional models of alcoholism treatment outcome: An empirical study. *Journal of Studies on Alcohol, 49*, 167-177.

Brecht, M.L., Greenwell, L., & Anglin M.D. (2005). Methamphetamine treatment: Trends and predictors of retention and completion in a large state treatment system (1992-2002). *Journal of Substance Abuse Treatment, 29*, 295-306.

Carroll, K.M., Power, M.E.D., Bryant, K., & Rounsaville, B.J. (1993). One-year follow-up status of treatment-seeking cocaine abusers psychopathology and dependence severity as predictors of outcome. *Journal of Nervous and Mental Disease, 181*, 71-79.

Deck, D.D., McFarland, B.H., Titus, J.M., et al. (2000). Access to substance abuse treatment services under the Oregon Health Plan. *JAMA, 284*, 2093–2099.

DeLeon, G., Wexler, H.K., & Jainchill, N. (1982). The therapeutic community: Success and improvement rates 5 years after treatment. *International Journal of Addiction, 17*, 703-747.

Dennis, M., & Scott, C.K. (2007). Managing addiction as a chronic condition. *Addiction Science & Clinical Practice, 4*(1), 45-55.

Downey, L., Rosengren, D.B., & Donovan, D.M. (2003). Gender, waitlists, and outcomes for public-sector drug treatment. *Journal of Substance Abuse Treatment, 25*(1), 19-28.

Etheridge, R.M., Craddock, S.G., Hubbard, R.L., & Rounds-Bryant J.L. (1999). The relationship of counseling and self-help participation to patient outcomes in DATOS. *Drug and Alcohol Dependence, 57*, 99-112.

Fiorentine, R., & Hillhouse, M.P. (2000). Drug treatment and 12-step program participation: The additive effects of integrated recovery activities. *Journal of Substance Abuse Treatment. 18*, 65-74.

Fleming, M.F., & Barry, K.L. (Eds.). (1992). *Addictive disorders.* St. Louis: Mosby Yearbook Primary Care Series.

Gainey, R.R., Wells, E.A., Hawkins, J.D., & Catalano R.F. (1993). Predicting treatment retention among cocaine users. *International Journal of Addictions, 28*, 487-505.

Garnick, D.W., Hodgkin, D., & Horgan, C.M. (2002a). Selecting data sources for substance abuse services research. *Journal of Substance Abuse Treatment, 22*,11–22.

Garnick, D.W., Lee, M.T., Chalk, M., et al. (2002b). Establishing the feasibility of performance measures for alcohol and other drugs. *Journal of Substance Abuse Treatment, 23*, 375–385.

Gerstein, D.R., & Harwood, H.J., (Eds.). (1990). *Treating drug problems: A study of the evolution, effectiveness, and financing of public and private drug treatment systems* (Vol. 1). Washington, DC: Institute of Medicine. National Academy of Press.

Gossop, M., et al. (2001). Outcomes after methadone maintenance and methadone reduction treatments: Two year follow-up results from the National Treatment Outcome Research Study. *Drug and Alcohol Dependence, 62*, 255-264.

Havassy, B.E., Hall, S.M., & Wasserman D.A. (1991). Social support and relapse: Commonalities among alcoholics, opiate users, and cigarette smokers. *Addictive Behaviors, 16*, 235-246.

Hser, Y.-I., Huang, D., Teruya, C., & Anglin M.D. (2003). Gender comparisons of drug abuse treatment outcomes and predictors. *Drug and Alcohol Dependence, 72*, 255-264.

Hubbard, R.L. (1989). *Drug abuse treatment: A national study of effectiveness*. Chapel Hill, North Carolina: University of North Carolina Press.

Hubbard, R.L. (1992). Evaluation and treatment outcomes. In J. Lowinson, P. Ruiz, R. Millman, J., & Langrod (Eds.), *Substance abuse: A comprehensive textbook* (2nd ed., pp. 596-611). Baltimore, MD: Williams & Wilkins.

Joe, G.W., Simpson, D.D., & Broome, K.M. (1999). Retention and patient engagement models for different treatment modalities in DATOS. *Drug and Alcohol Dependence, 57*(2), 113-125.

Klag, M.J., MacKenzie, E.J., Carswell, C.I., & Bridges, J.P. (2008). The role of the patient and waiting in promoting outcomes research. *The Patient*, 1-3.

LaVeist, T.A. (Ed). (2001). *Race, ethnicity, and health.* San Francisco, Jossey-Bass.

McLellan, T., Grissom, G.R., Zanis, D., Randall, M., Brill, P., & O'Brien, C.P. (1997). Problem-service 'matching' in addiction treatment: a prospective study in four programs. *Archives of General Psychiatry, 54*, 730-735.

McLellan, A.T., Alterman, A.J., Metzger, D.S., Grisson, G.R., Woody, G.E., Luborsky, L. et al. (1994). Similarity of outcome predictors across opiate, cocaine, and alcohol treatments: Role of treatment services. *Journal of Consulting and Clinical Psychology, 62*, 1141-1158.

Rapp, R.C., Xu, J., Carr, C.A., Lane, D.T., Redko, C., Wang, J., & Carlson, R.G. (2007). Understanding treatment readiness in recently assessed, pre-treatment substance abusers. *Substance Abuse, 28*(1), 11–23.

Rapp, R.C., Xu, J., Carr, C.A., Lane, D.T., Wang, J., & Carlson, R.G. (2006). Treatment barriers identified by substance abusers assessed at a centralized intake unit. *Journal of Substance Abuse Treatment, 30*, 227–235.

Reiber, C., Ramirez, A., Parent, D., & Rawson R.A. (2002). Predicting treatment success at multiple timepoints in diverse patient populations of cocaine-dependent individuals. *Drug and Alcohol Dependence, 68*, 35-48.

Satre, D., Knight, B.G., Dickson-Fuhrmann, E., & Jarvik, L.F. (2004). Substance abuse treatment initiation among older adults in GET SMART program. *Aging and Mental Health, 8*(4), 346-354.

Schwartz, R.P., et al. (2006). A randomized controlled trial of interim methadone maintenance. *Archives of General Psychiatry, 63*(1),102-109.

Simpson, D.D., & Joe, G.W. (2004). A longitudinal evaluation of treatment engagement and recovery stages. *Journal of Substance Abuse Treatment, 27*, 89-97.

Siqueland, L., Crits-Christoph, P., Gallop, R., Barber, J.P., Griffin, M.L, Thase, M.E., et al. (2002). Retention in psychosocial treatment of cocaine dependence: Predictors and impact on outcome. *American Journal on Addictions, 11*, 24-40.

Tsogia, D., Copello, A., & Orford, J. (2001). Entering treatment for substance misuse: A review of the literature. *Journal of Mental Health, 10*(5), 481–499.

Westerberg, V.S. (1998). What predicts success? In W.R. Miller, W.R., Heather, N. (Eds). *Treating addictive behaviors* (2nd ed., pp. 301-315). New York: Plenum Press.

Westermeyer, J. (1989). Nontreatment factors affecting treatment outcome in substance abuse. *American Journal of Drug and Alcohol Abuse, 15*, 13-29.

Technical Notes

Technical Note 1: Service Sets and Treatment Episodes

Each service type/modality that is provided to a client should have a CalOMS admission and matching CalOMS discharge record; some will also have a matching annual update record. The combination of an admission and matching annual update and/or discharge is labeled a *service set*. Thus, a *service set* is a set of matching records that pertain to one type of service provided to a client, which can include: admission to discharge, admission to annual update, or admission to annual update to discharge. CalOMS considers a service set "complete" if an admission is matched with either an annual update or a discharge. A *treatment episode* is a collection of temporally contiguous or contemporaneous service sets for the same client. Service sets are included in the same treatment episode only if the break between each discharge and subsequent admission is 30 days or less. If the break between the discharge from one service set and admission to the next service set for the same client is more than 30 days, these service sets will not be included in the same treatment episode.

The data analysis process used for creating a treatment episode identifier within CalOMS is the following, as documented and communicated to UCLA Integrated Substance Abuse Programs by ADP staff:

Each time CalOMS admission data is submitted and accepted for a unique client, it is assigned a unique service set ID number. When a matching CalOMS discharge or annual update is submitted and accepted, a set of processes is set in motion:

(a) The matching CalOMS discharge or annual update data is assigned the same unique service set ID number that was assigned to the CalOMS admission.

(b) Once a CalOMS admission is matched with a CalOMS discharge or annual update, a new complete service set is formed.

(c) At this point, this new complete service set is going to be assigned an Episode ID. In order to assign the Episode ID, the file processor will scan all existing service sets for the same unique client ID (that is part of each CalOMS admission, discharge, or annual update record). If it finds any other existing completed service sets for the same unique client ID, it will evaluate if there is more than a 30-day break between the admission of the new service set and the discharge of the existing service set. If the break is 30 days or fewer, the new service set is assigned the same Episode ID as the existing service set. If the break is more than 30 days, the new service set is assigned a new Episode ID. If no existing service sets with the same unique client ID are found, then the new service set is assigned a new Episode ID.

Technical Note 2: Creating Treatment Episodes for Analysis of CalOMS Data

For data analyses on performance measures of retention and completion, we first identified episodes ending during the fiscal year 2006-2007 (data available as of December 2007). For individual clients who had more than one episode of care ending in fiscal year 2006-2007, we selected the episode with the earliest discharge. Episodes were omitted from analysis if they did not have an initiating admission record within the CalOMS data set. A few additional episodes were omitted because of inconsistent client identifier codes within episodes or other inconsistencies. The resulting episode data set size for performance analyses was *N*=154,414. Some performance analyses were based on fewer episodes because of missing data on specific measures. Note that outcomes analyses were based on a further subset of episodes, based on availability of outcomes measures (see Chapter 5).

Controlling for treatment type is important given the wide variability in typical length of treatment. An additional note of caution in interpreting retention is based on the potential impact on averages of outliers within each type of treatment. For example, retention for 1.0% of episodes was longer than 1,095 days. The process of documenting discharge from a treatment program can be complex (see Chapter 7), resulting in some potentially artifactually long retentions. Since establishing clear-cut rules for identifying outliers is difficult, we have not omitted outliers from the current analyses, and the issue becomes more

complex when analyzing episodes which can be sequences or combinations of multiple modalities. This issue deserves additional attention, both in terms of data collection processes and analysis.

ADP has proposed the following criteria to use when examining treatment length by type/modality:

- If treatment is outpatient drug free (service = 1 and medication = 1 or 99903) and days in treatment (titd) is greater than 1,095, then drop record
- If treatment is day care rehabilitative (service = 2) and days in treatment is greater than 365 then drop record
- If treatment is outpatient detox (service = 3 and medication = 1 or 99903) and days in treatment is greater than 21 then drop record
- If treatment is narcotic detox (service = 3 and medication in 2, 3, 4, 5) and days in treatment is greater than 180 then drop record
- If treatment is residential detox (service = 4 or 5) and days in treatment is greater than 21 then drop record
- If treatment is short term residential (service 6) and days in treatment is greater than 30 then drop record
- If treatment is long term residential (service = 7) and days in treatment is greater than 548 then drop record

As an exploratory procedure, we applied the ADP outlier criteria to the approximately 85% of episodes with only a single service set, with the result that 1,417 of the 154,414 episodes would have been omitted from analyses of retention. With these exclusions, the overall average retention would have been 136.3 days (instead of the 140.7 days based on all episodes). Even with these omitted outliers, there is a wide range of days retained in treatment; for example, 0.8% of the episodes still have retention greater than 1,095 days, but a substantial majority of these include NTP maintenance service programs, which can have lengthy retention.

Technical Note 3: Administrative Discharges
Clients who are discharged under status codes 1, 2, 3, and 5 must be asked all of the CalOMS outcome questions at the time they are discharged from treatment. Discharges with one of the remaining four codes (4, 6, 7, and 8) are "administrative discharges" because a client has stopped appearing for treatment and is not available to provide the required CalOMS discharge information.[64] Hence, minimal reporting from the provider is required containing only basic client information, often copied from the client's matching admission record, (i.e., sex, race, age, etc.), primary drug code, and pregnant status obtained at admission. Episodes ending with an administrative discharge were included in analyses of performance measures (e.g., since retention could be calculated from admission and discharge dates); however, such episodes could not be included in analyses of outcomes measures.

[64] Because administrative discharges do not contain the outcome data necessary to calculate the percent change between admission and discharge, an assessment of clients' outcomes from these data are not possible.

Table 1: Multiple Service Episodes across All Types of Treatment Services (Aggregate)

Type of initial treatment service	Multiple service episodes across all types of service[1]
Outpatient (O)[2]	
O-O, O-O-O...etc.	27.2
O-O-xx	2.9
O-SR or O-SR-xx	0.9
O-LR or O-LR-xx	11.3
O-D or O-D-xx	3.6
O-ND or O-ND-xx	0.4
O-M or O-M-xx	0.6
Short-term Residential (SR)	
SR-SR or SR-SR-xx	0.6
SR-O or SR-O-xx	1.1
SR-LR or SR-LR-xx	0.8
SR-other[2]	0.1
Long-term Residential (LR)	
LR-LR or LR-LR-xx	7.2
LR-O or LR-O-xx	14.2
LR-SR or LR-SR-xx	0.1
LR-D or LR-D-xx	0.9
LR-ND or LR-ND-xx	0.1
LR-M or LR-M-xx	0.1
Non-NTP Detoxification (D)	
D-D or D-D-xx	5.1
D-O or D-O-xx	2.3
D-SR or D-SR-xx	0.3
D-LR or D-LR-xx	8.8
D-ND or D-ND-xx	0.4
D-M or D-M-xx	0.2
NTP Detoxification (ND)	
ND-ND or ND-ND-xx	3.2
ND-O or ND-O-xx	0.4
ND-SR or ND-SR-xx	<0.1
ND-LR or ND-LR -xx	0.3
ND-D or ND-D-xx	0.4
ND-M or ND-M-xx	3.2
NTP Maintenance (M)	
M-M or M-M-xx	2.7
M-O or M-O-xx	0.8
M-SR or M-SR-xx	<0.1
M-LR or M-LR -xx	0.4
M-D or M-D-xx	0.2

Table 2: Multiple Service Episodes by Type of Initial Treatment

Type of initial service	Multiple service sets (within each type of initial service episode)[1]
Outpatient (O)[2]	
O-O, O-O-O...etc.	59.4
O-O-xx	4.0
O-SR or O-SR-xx	1.9
O-LR or O-LR-xx	24.7
O-D or O-D-xx	7.8
O-ND or O-ND-xx	0.8
O-M or O-M-xx	1.3
Short-term Residential (SR)	
SR-SR or SR-SR-xx	24.0
SR-O or SR-O-xx	41.7
SR-LR or SR-LR-xx	30.2
SR-other[2]	4.0
Long-term Residential (LR)	
LR-LR or LR-LR-xx	31.8
LR-O or LR-O-xx	62.9
LR-SR or LR-SR-xx	0.4
LR-D or LR-D-xx	3.9
LR-ND or LR-ND-xx	0.4
LR-M or LR-M-xx	0.5
Non-NTP Detoxification (D)	
D-D or D-D-xx	29.9
D-O or D-O-xx	13.4
D-SR or D-SR-xx	1.8
D-LR or D-LR-xx	51.4
D-ND or D-ND-xx	2.3
D-M or D-M-xx	1.3
NTP Detoxification (ND)	
ND-ND or ND-ND-xx	43.0
ND-O or ND-O-xx	5.7
ND-SR or ND-SR-xx	0.2
ND-LR or ND-LR -xx	3.4
ND-D or ND-D-xx	5.1
ND-M or ND-M-xx	42.8
NTP Maintenance (M)	
M-M or M-M-xx	58.0
M-O or M-O-xx	18.5
M-SR or M-SR-xx	0.5
M-LR or M-LR -xx	8.2
M-D or M-D-xx	4.5

[1]Could also have included additional services following the two-service set combination as denoted by xx.
[2] Includes intensive outpatient day treatment.

Table 3: Access by Sociodemographic Factors

	Days on the Waiting List Mean + SD	Median Days on the Waiting List
Gender		
Male	4.5 ± 18.6	0
Female	4.3 ± 16.4	0
Age		
25-34	5.0 ± 19.1	0
35-44	4.9 ± 19.9	0
45-54	4.4 ± 16.6	0
Race/Ethnicity[65]		
White	4.8 ± 18.8	0
Hispanic/Latino	4.3 ± 18.7	0
Black/African American	3.4 ± 12.2	0
American Indian/Alaskan Native	4.4 ± 14.6	0
Asian/Pacific Islander	4.8 ± 14.6	0
Other	5.0 ± 20.9	0
Employment		
Employed	4.0 ± 17.6	0
Unemployed	4.6 ± 17.9	0
Education		
High School	4.8 ± 18.8	0
Less than high school	4.1 ± 18.0	0
Some College/Graduate School	4.5 ± 15.2	0
Social Support Involvement		
Yes	6.1 ± 20.5	0
No	3.6 ± 16.3	0
Serious Family Conflict		
Yes	4.7 ± 19.5	0
No	4.8 ± 18.4	0
Parental Status		
At least 1 child under 17 years old	5.2 ± 20.1	0
At least I child under 5 years old	5.3 ± 21.4	0
Children living elsewhere (court order)	5.6 ± 18.4	0
Parental Rights Terminated	5.6 ± 21.4	0
Living Situation		0
Independent Living	3.9 ± 17.1	0
Dependent Living	4.8 ± 18.9	0

Source: CalOMS Data Fiscal Year 2006-2007

[65] CalOMS collects eight racial categories, however for the purposes of this report, race categories were combined into six standard categories shown in Table 1.

Table 4: Retention by Sociodemographic Factors

	Length of Stay Mean ± SD	Median Length of Stay	> 60 Days %	> 90 Days %
Gender				
Male	133.8 ± 255.1	71	53.9	44.2
Female	153.3 ± 293.9	82	57.0	47.4
Age				
25-34	130.0 ± 233.1	73	54.4	44.9
35-44	149.5 ± 330.7	72	54.0	44.7
45-54	154.0 ± 315.6	65	52.0	43.6
Race/Ethnicity[66]				
White	141.8 ± 278.6	71	53.9	44.6
Hispanic/Latino	142.8 ± 268.1	81	57.0	46.9
Black/African American	133.1 ± 240.8	68	53.1	43.5
American Indian/Alaskan Native	136.2 ± 299.5	90	54.3	44.1
Asian/Pacific Islander	155.0 ± 279.6	71	59.8	50.2
Other	127.0 ± 212.9	71	54.2	44.0
Employment				
Employed	166.4 ± 298.3	92	60.7	51.4
Unemployed	131.2 ± 254.2	68	53.1	43.3
Education				
Less than high school	143.1 ± 280.5	81	57.2	47.0
High School	142.6 ± 262.3	73	54.3	45.0
Some College/Graduate School	131.2 ± 262.0	63	51.3	42.3
Social Support				
Yes	119.9 ± 226.1	84	58.2	47.5
No	118.9 ± 148.5	62	50.9	41.1
Serious Family Conflict				
Yes	95.6 ± 151.4	48	45.2	35.1
No	122.1 ± 212.6	68	52.9	43.4
Parental Status				
At least 1 minor child	113.8 ± 157.6	72	54.4	44.2
At least 1 child under 5 years old	114.3 ± 140.2	77	55.8	45.4
Children living elsewhere				
Yes	116.9 ± 127.4	86	58.6	48.3
No	120.3 ± 222.0	63	51.2	41.8
Parental Rights Terminated				
Yes	109.8 ± 135.7	71	53.9	43.4
No	120.4 ± 214.4	64	52.0	42.4
Living Situation				
Independent Living	160.1 ± 298.9	85	57.7	48.5
Dependent Living	122.6 ± 170.0	78	57.0	46.3

Source: CalOMS Data Fiscal Year 2006-2007

[66] CalOMS collects eight racial categories, however for the purposes of this report, race categories were combined into six standard categories shown in Table 1.

Table 5: Completion Status by Sociodemographic Factors

	Non-Complete %	Complete %
Gender		
Male	60.4	39.6
Female	63.0	37.0
Age		
25-34	61.1	38.9
35-44	59.1	40.9
45-54	58.2	41.8
Race/Ethnicity[67]		
White	57.6	42.4
Hispanic/Latino	64.6	35.4
Black/African American	65.1	34.9
American Indian/Alaskan Native	60.5	39.5
Asian/Pacific Islander	58.7	41.3
Other	62.1	37.9
Employment		
Full or Part Time	58.8	41.2
Unemployed	62.1	37.9
Education		
Less than high school	65.9	34.2
High School	59.6	40.4
Some College/Graduate School	54.5	45.5
Social Support		
Yes	56.1	43.9
No	65.0	35.0
Family Conflict		
Yes	62.8	37.2
No	60.5	39.5
Parental Status		
At least 1 child	61.7	38.3
At least I child under 5 years old	62.9	37.1
Children living elsewhere		
Yes	61.5	38.5
No	60.7	39.3
Parental Rights Terminated		
Yes	64.6	35.4
No	60.7	39.3
Living Arrangement		
Independent Living	63.2	36.8
Dependent Living	63.3	36.7

Source: CalOMS Data Fiscal Year 2006-2007

[67] CalOMS collects eight racial categories, however for the purposes of this report, race categories were combined into the six standard categories shown in Table 1.

Table 6: Access by Health Status Factors

	Days on the Wait List Mean + SD	Median Days on the Wait List
Medical Health Problems		
At least 1 Medical Problem (past 30 days)		
Yes	4.8 ± 18.6	0
No	4.8 ± 18.7	0
Medical Treatment		
Emergency Room Visits (past 30 days)		
Visits	3.9 ± 17.5	0
No Visits	4.8 ± 18.8	0
Overnight Hospital Stays (past 30 days)		
At least 1 hospital stay	3.5 ± 18.1	0
No hospital stays	4.8 ± 18.7	0
Infectious Disease Status		
Tuberculosis		
Yes	4.1 ± 13.7	0
No	4.8 ± 18.6	
Hepatitis C Infection		
Yes	4.2 ± 22.5	0
No	4.8 ± 18.2	0
Sexually Transmitted Diseases		
Yes	4.3 ± 12.8	0
No	4.8 ± 18.7	0

Source: CalOMS Data Fiscal Year 2006-2007

Table 7: Retention by Health Status Factors

	Length of Stay Mean + SD	Median Length of Stay	> 60 Days %	> 90 Days %
Medical Health Problems				
At least 1 Medical Problem (past 30 days)	101.2 ± 167.9	51	50.3	37.2
No Medical Problems (past 30 days)	124.0 ± 220.1	69	52.2	43.6
Medical Treatment				
Emergency Room Visits (past 30 days)				
Visits	81.4 ± 149.4	33	38.9	30.1
No visits	123.7 ± 216.7	69	53.3	43.7
Overnight Hospital Stays (past 30 days)				
At Least One Hospital Stay	90.2 ± 164.7	40	42.1	33.0
No Hospital Stays	121.0 ± 213.3	66	52.4	42.8
Infectious Disease Status				
Tuberculosis				
With Tuberculosis	123.4 ± 298.8	61	50.2	40.7
No Tuberculosis	119.1 ± 203.6	65	52.2	42.6
Hepatitis C Infection				
With Hepatitis C Infection	117.5 ± 282.9	45	45.0	36.0
No Hepatitis C Infection	119.1 ± 198.1	67	52.7	43.0
Sexually Transmitted Diseases				
With Sexually Transmitted Diseases	114.5 ± 204.9	71	54.1	43.7
No Sexually Transmitted Diseases	118.9 ± 205.9	64	52.0	42.4

Source: CalOMS Data Fiscal Year 2006-2007

Table 8: Completion Status by Health Status Factors

	Non-Complete %	Complete %
Medical Health Problems		
At least 1 Medical Problem (past 30 days)	61.0	39.0
No Medical Problems (past 30 days)	60.8	39.2
Medical Treatment		
Emergency Room Visits (past 30 days)		
Visits	58.0	42.0
No Visits	61.1	38.9
Overnight Hospital Stays (past 30 days)		
At Least 1 Hospital Stay	59.3	40.7
No Hospital Stays	60.9	39.1
Infectious Disease Status		
Tuberculosis		
With Tuberculosis	64.9	35.1
Without Tuberculosis	61.1	38.9
Hepatitis C Infection		
With Hepatitis C Infection	66.7	33.3
Without Hepatitis C Infection	60.7	39.3
Sexually Transmitted Diseases		
With Sexually Transmitted Diseases	63.8	36.2
Without Sexually Transmitted Diseases	61.1	38.9

Source: CalOMS Data Fiscal Year 2006-2007

Table 9: Access by Substance Use Disorders

	Days on the Wait List Mean + SD	Median Days on the Wait List
Primary Drug of Abuse		
Heroin/Other Opiates	3.5 ± 22.1	0
Alcohol	4.3 ± 17.5	0
Cocaine/Crack	3.8 ± 17.1	0
Methamphetamine	5.6 ± 18.4	0
Marijuana	3.1 ± 11.5	0
Other	3.8 ± 11.3	0
Secondary Drug of Abuse		
Heroin/Other Opiates	4.3 ± 15.7	0
Alcohol	4.5 ± 15.8	0
Cocaine/Crack	4.4 ± 21.6	0
Methamphetamine	5.1 ± 17.8	0
Marijuana	5.3 ± 19.3	0
Other	4.6 ± 22.6	0
Primary plus Secondary (Polydrug) Drug Use		
Yes	4.8 ± 18.2	0
No	3.9 ± 17.3	0

Source: CalOMS Data Fiscal Year 2006-2007

Table 10: Retention by Substance Use Disorders

	Length of Stay Mean + SD	Median Length of Stay	> 60 Days %	> 90 Days %
Primary Substance Use				
Heroin/Other Opiates	230.5 ± 545.4	53	48.2	41.1
Alcohol	102.6 ± 144.7	56	48.5	39.1
Cocaine/Crack	114.0 ± 155.3	65	52.0	42.4
Methamphetamine	126.9 ± 146.2	87	58.8	48.7
Marijuana	133.5 ± 151.4	91	63.6	51.5
Other	139.6 ± 200.5	78	56.2	46.3
Secondary Substance Use				
Heroin/Other Opiates	122.7 ± 248.0	49	45.7	37.1
Alcohol	133.1 ± 209.4	84	58.2	47.8
Cocaine/Crack	162.8 ± 339.6	68	52.8	44.2
Methamphetamine	127.3 ± 216.7	71	53.8	44.1
Marijuana	126.1 ± 159.7	82	57.7	47.0
Other	127.3 ± 265.8	64.5	51.8	41.8
Primary plus Secondary (*Polydrug Use*)	133.2 ± 222.9	77	55.9	45.8

Source: CalOMS Data Fiscal Year 2006-2007

Table 11: Completion Status by Substance Use Disorders

	Non-Complete %	Complete %
Primary Drug of Abuse		
Heroin/Other Opiates	72.7	27.3
Alcohol	52.0	48.0
Cocaine/Crack	59.7	40.3
Methamphetamine	59.3	40.7
Marijuana	66.6	33.4
Other	60.5	39.5
Secondary Drug of Abuse		
Heroin/Other Opiates	62.5	37.5
Alcohol	60.8	39.2
Cocaine/Crack	62.0	38.0
Methamphetamine	62.7	37.3
Marijuana	60.8	39.2
Other	63.6	36.4
Primary plus Secondary Polydrug Use	61.4	38.6

Source: CalOMS Data Fiscal Year 2006-2007

Table 12: Access by Priority Groups

	Days on the Wait List Mean + SD	Median Days on the Wait List
Priority Women		
Pregnant Women	5.1 ± 18.4	0
Priority Age Groups		
Youth 12-17	1.6 ± 8.0	0
Young Adults 18-24	4.7 ± 20.4	0
Older Adults 55 and older	3.7 ± 13.1	0
Individuals with Lifetime Mental Illness Diagnosis		
With Diagnosis	4.7 ± 16.0	0
Without Diagnosis	4.4 ± 18.3	0
Individuals with Criminal Justice Involvement		
No Criminal Justice Involvement	3.2 ± 16.5	0
Under parole supervision by CDCR	4.4 ± 23.9	0
On parole from any other jurisdiction	5.1 ± 21.5	0
On probation	5.6 ± 17.2	0
Other diversion	5.1 ± 14.5	0
Incarcerated	8.5 ± 13.3	1
Awaiting trial, charges or sentencing	5.8 ± 30.1	0
Spent Time in Jail (past 30 days)		
Yes	5.8 ± 17.7	0
No	4.5 ± 18.9	0
Spent Time in Prison (past 30 days)		
Yes	6.7 ± 33.4	0
No	4.7 ± 18.1	0
Arrests in past 30 days		
Yes	3.7 ± 13.1	0
No	4.5 ± 18.5	0
Injection Drug Users		
Needle Use (in past 30 days)		
Yes	4.5 ± 20.7	0
No	4.5 ± 17.4	0
Needle Use (in past 12 months)		
Yes	3.6 ± 20.8	0
No	5.1 ± 18.7	0
Disabled	4.8 ± 18.0	0
Veteran	4.4 ± 12.7	0
Homeless	4.8 ± 17.2	0

Source: CalOMS Data Fiscal Year 2006-2007

Table 13: Retention by Priority Groups

	Length of Stay Mean + SD	Median Length of Stay	> 60 Days %	> 90 Days %
Priority Women Groups				
Pregnant Women	172.7 ± 307.4	113.5	65.5	57.0
Priority Age Groups				
Youth 12-17	133.1 ± 135.4	97	66.4	53.3
Young Adults 18-24	123.8 ± 174.5	74	55.4	44.8
Older Adults 55 and older	170.1 ± 333.3	68	52.2	44.9
Individuals with Lifetime Mental Illness Diagnosis				
With Diagnosis	105.5 ± 163.9	58	49.2	39.1
Without Diagnosis	121.8 ± 206.4	71	54.2	44.1
Individuals with Criminal Justice Involvement				
Any criminal justice involvement	134.8 ± 181.4	90	60.9	50.2
No criminal justice involvement	145.9 ± 342.9	53	47.6	39.2
Under parole supervision by CDCR	95.3 ± 181.7	54	47.3	35.1
On parole from any other jurisdiction	123.0 ± 255.2	64	52.3	41.3
On probation	143.5 ± 177.0	96	64.0	53.7
Other diversion	161.5 ± 167.9	119	71.9	61.7
Incarcerated	107.7 ± 169.6	61	50.9	38.9
Awaiting trial, charges or sentencing	99.9 ± 119.2	62	51.3	40.8
Spent Time in Jail (past 30 days)				
Yes	110.1 ± 121.9	74	55.4	44.5
No	122.2 ± 227.1	63	51.3	42.0
Spent Time in Prison (past 30 days)				
Yes	90.5 ± 97.2	71	55.6	40.1
No	120.9 ± 214.4	64	51.9	42.5
Arrests (past 30 days)				
Yes	104.4 ± 120.2	65	52.6	41.8
No	121.9 ± 213.1	69	53.4	43.5
Injection Drug User				
Yes	224.4 ± 526.7	64	51.6	43.8
No	122.7 ± 167.1	77	55.6	45.6
Needle Use (30 days)	119.2 ± 293.0	30	39.8	31.7
No Needle Use (30 days)	124.0 ± 191.3	71	56.2	46.0
Needle Use (12 months)	200.0 ± 473.9	59	51.2	42.8
No Needle Use (12 months)	130.6 ± 181.2	78	58.5	48.0
Disabled	147.8 ± 281.9	76	55.1	45.8
Veteran	98.0 ± 168.4	49	46.0	37.4
Homeless	77.5 ± 121.5	35	40.0	30.9

Source: CalOMS Data Fiscal Year 2006-2007

Table 14: Completion Status by Priority Groups

	Non-Complete %	Complete %
Pregnant Women	61.7	38.3
Youth 12-17	71.9	28.1
Young Adults 18-24	63.9	36.1
Older Adults 55 and older	56.5	43.5
Individuals with Lifetime Mental Illness Diagnosis		
With Diagnosis	63.2	36.9
Without Diagnosis	61.8	38.2
Individuals with Criminal Justice Involvement	59.4	40.6
No Criminal Justice Involvement	63.6	36.4
Under parole supervision by CDCR	66.9	33.1
On parole from any other jurisdiction	67.4	32.6
On probation	57.5	42.5
Other diversion	55.9	44.1
Incarcerated	61.6	38.4
Awaiting trial, charges or sentencing	59.9	40.1
Spent Time in Jail (past 30 days)		
Yes	62.7	37.3
No	60.4	39.6
Spent Time in Prison (past 30 days)		
Yes	60.1	39.9
No	60.8	39.2
Arrests in past 30 days		
Yes	65.5	34.5
No	61.5	38.5
Injection Drug Users		
IV Drug Use (past 30 days)	70.7	29.3
Needle Use (past 12 months)	68.0	32.0
Disabled		
Yes	64.1	36.0
No	60.8	39.2
Veteran		
Yes	53.3	45.7
No	62.5	37.5
Homeless	53.0	47.0

Source: CalOMS Data Fiscal Year 2006-2007

Table 15: Access by Treatment Utilization Factors

	Days on the Waiting List Mean + SD	Median Days on the Waiting List
Treatment Type/Modality		
Outpatient	3.4 ± 13.3	0
Residential		
30 days or less	6.8 ± 16.1	0
31 days or more	10.4 ± 27.6	1
Detoxification	2.8 ± 13.8	0
Narcotic Treatment Program		
Detoxification	2.0 ± 22.3	0
Maintenance	1.7 ± 22.4	0
Referral Source		
Self	3.5 ± 15.5	0
Substance Abuse Crime Prevention Act (SACPA)	4.4 ± 14.1	0
Other (Non-SACPA) Criminal Justice Service	6.5 ± 21.2	0
Other	3.7 ± 21.0	0

*Source: CalOMS Data Fiscal Year 2006-2007;** Outpatient does not include intensive.

Table 16: Retention by Treatment Factors

	Length of Stay Mean + SD	Median Length of Stay	> 60 Days %	> 90 Days %
Treatment Type/Modality				
Outpatient*	149.5 ± 178.9	101	65.0	54.4
Residential				
30 days or less	38.3 ± 61.0	25.5	--	--
31 days or more	93.0 ± 93.9	70	54.5	41.4
Non-NTP Detoxification	22.8 ± 58.1	6	10.6	7.7
Narcotic Treatment Program				
Detoxification	71.6 ± 201.0	20	27.8	21.7
Maintenance	523.9 ± 844.6	208	72.5	66.4
Referral Source				
Self	148.0 ± 384.6	40	43.0	35.2
Substance Abuse Crime Prevention Act (SACPA)	137.7 ± 146.0	97	63.6	53.6
Other (Non-SACPA) Criminal Justice Service	147.8 ± 187.2	93	65.2	53.6
Other	120.4 ± 213.1	65	52.5	42.3

Source: CalOMS Data Fiscal Year 2006-2007; *Outpatient does not include intensive.

Table 17: Completion Status by Treatment Utilization Factors

	Non-Complete %	Complete %
Treatment Type/Modality		
Outpatient	66.2	33.8
Residential		
30 days or less	31.9	68.1
31 days or more	53.6	46.4
Non-NTP Detoxification	35.3	64.7
Narcotic Treatment Program Detoxification	75.0	25.0
Narcotic Treatment Program Maintenance	85.6	14.4
Referral Source		
Self	63.7	36.3
Substance Abuse Crime Prevention Act (SACPA)	61.3	38.7
Other (Non-SACPA) Criminal Justice Service	56.5	43.5
Other	62.4	37.6
No	60.8	39.2

*Source: CalOMS Data Fiscal Year 2006-2007; ** Outpatient does not include intensive.

CHAPTER 5: TREATMENT OUTCOMES IN CALOMS

Introduction

Outcomes are defined as critical areas of life functioning measured at the client level that are expected to be positively influenced by treatment (McLellan, Chalk, & Bartlett, 2006). At the very core, outcome measurement allows for the evaluation of substance abuse treatment and ability to hold the system accountable for producing 'client success.' Recently, the federal government developed a set of National Outcome Measures (NOMs) (SAMHSA, 2005) to guide treatment evaluations towards priority outcome areas as described in Box 1. In response towards greater accountability, California's Department of Alcohol and Drug Programs (ADP) developed the California Outcomes Measurement System for treatment (CalOMS-Tx) to effectively monitor priority outcome domains, including measures that meet NOMS guidelines as well as those prioritized by ADP, counties, and other California stakeholders.

Box 1: National Outcome Measures

Alcohol/Drug Use	Increase in/no change in alcohol/drug use from date of first service to date of last service.
Employment/Education	Increase in/no change in employment/education from date of first service to date of last service.
Crime/Criminal Involvement	Increase in/no change in crime/criminal involvement from date of first service to date of last service.
Stability in Housing	Increase in/no change in stable housing situation from date of first service to date of last service.
Social Connectedness	Increase in/no change in social connectedness from date of first service to date of last service.

Methods

Sample

Using CalOMS client data collected during fiscal year 2006-2007, this chapter provides a comprehensive examination of treatment outcomes. Analyses include client outcomes for the last discharge record or annual update within a given *treatment episode*. As was discussed in Chapter 4, the period for which "change in client functioning" is assessed has been defined as a *treatment episode*, consisting of one or more service sets that are delineated by a matched admission and discharge record across service types/modality with gaps between discharge and next admission not exceeding a 30-day period. For more detail on treatment episode data, please refer to Technical Notes 1 and 2 at the end of this Chapter. Client treatment episodes used for outcomes analysis in relation to performance measures (i.e., association between retention or completion and client outcomes) include n=154,414. For analyses that examine change in client outcome measures from admission to discharge, the primary sample only includes n=85,310 given missing cases (see Technical Notes 2 and 3).

Data Analysis

Outcome measures were selected from the CalOMS data set and defined using the first admission and last discharge record in a treatment episode in order to allow for adequate assessment of 'change' in client functioning. For purposes of data analysis, Box 2 describes the specific outcome measures that were used and how they were measured.

Box 2: Outcome Measurement in CalOMS-Tx

Substance Use: Alcohol/Drug	Alcohol/drug use during past 30 days, in terms of 1) number of days and 2) no use vs. any use
Employment/Education	Current employment/education status, in terms of 1) employed vs. not employed and 2) employed and/or enrolled in school and/or job training vs. not employed/enrolled
Crime & Criminal Justice	Criminal justice system-related activity in past 30 days, in terms of any involvement vs. no involvement (based on no arrests, jail days, and prison days vs. any arrests, jail days, or prison days).
Stability in Housing[1]	Stable housing in past 30 days, in terms of homeless vs. not homeless.
Social Connectedness	Family/social problems in past 30 days in terms of none vs. any days of serious family conflict

[1]While this Chapter focuses data analyses on homelessness as a measure of stability in housing, other measures of stability of housing include independent and dependent living. Since independent and dependent living measures may not be as appropriate an outcome for certain subgroups (e.g., youth) and homeless clients are considered to be a public health priority population as described in Chapter 2, they are not included in outcome analyses. Hence, future work should consider outcomes in relation to both independent and dependent living measures, particularly with criminal offending populations.

Descriptive results for outcome measures are presented using averages, medians and percentages (see Tables 1-5 and Appendix Tables i-iv) with selected results of particular interest detailed in the text. Selected results are also presented in graphical form where substantial differences across subgroups exist. The text and presentation of outcomes focus primarily on description of differences from admission to discharge. See Technical Note 4 for statistical considerations.

SUMMARY OF KEY FINDINGS

Key findings of client change along a treatment episode on core outcome measures are highlighted below.

SUBSTANCE USE

- The percentage of client episodes with any use of the primary substance in the past 30 days decreased from 65.0% at admission to 36.1% at the end of the episode (a difference of 28.9%).
- There was a decrease in average days of primary substance use in the past 30 days from 10.0 to 5.1 days from admission to discharge across treatment episodes.
- Any use of a secondary substance also decreased, from 57.8% to 29.7% across treatment episodes (a difference of 28.1% between admission and discharge).
- The decrease in primary substance use was greater among episodes for younger clients (12-17 years) (from 58.7% to 27.0%, a difference of 31.7%) than for older clients. Those 55 years or older, showed a decrease from 74.0% to 46.6%, a difference of 27.4%; and those 45-54 years showed a decrease from 71.0% to 43.2%, a difference of 27.8%.
- There were decreases in use for all primary substance categories, with the largest decrease for marijuana (from 60.8% at admission to 26.3% at discharge, a difference of 34.5%) and the smallest decrease for heroin (from 82.1% to 56.2%, a difference of 25.9%)).
- There were decreases in any use of primary substance across the types/modalities of treatment, with the largest decrease (from 61.2% to 15.6%, a difference of 45.6%) for client episodes beginning with

long-term residential (>30 days). For episodes beginning with outpatient treatment, the decrease in any use of primary substance was from 52.7% to 26.2% (a difference of 26.5%).

- Longer time in treatment (i.e., increased retention) was associated with greater decreases in percentage with any use of primary substance: e.g., the decrease was larger among episodes with retention at least 90 days (from 55.0% to 19.5%, a difference of 35.5%), while the decrease was from 76.5% to 55.2% (a difference of 21.3%) for episodes with less than 90-day retention.

EMPLOYMENT/EDUCATION

- Employment increased from 25.1% to 33.5% from beginning to end of treatment episodes (a difference of 8.4%).
- When enrollment in educational programs is also included, the increase in employment and/or enrollment in education increased from 35.4% to 45% (a difference of 9.6%).

CRIME & CRIMINAL JUSTICE

- Involvement with the criminal justice system (arrests, jail, or prison) decreased from 20.8% to 6.1% (a difference of 14.7%) for the 30 days prior to admission to the 30 days prior to discharge across treatment episodes.
- Decreases in criminal justice involvement differed by primary substance of use, with the greatest decrease for those reporting primary cocaine/crack use (from 27.0% to 7.4%, a difference of 19.6%), and the smallest decrease for primary heroin/other opiates users (from 13.0% to 4.6%, a difference of 8.4%). Primary methamphetamine users fell between the two extremes, with a decrease from 20.6% to 6.8% (a difference of 13.8%).
- Decreases in criminal justice involvement differed by type/modality of treatment beginning the episode, with the largest decreases for those beginning treatment with long-term residential service (from 35.3% to 5.8%, a difference of 29.5%). Criminal justice involvement declined from 20.0% to 6.3% (a difference of 13.7%) for episodes beginning with outpatient treatment.

STABILITY IN HOUSING

- The percentage of client episodes reporting homelessness declined from 20.0% to 16.5%.

SOCIAL CONNECTEDNESS

- The percentage of episodes reporting any days of serious family conflict in the prior 30 days before treatment declined from 11.8% at admission to 6.4% at discharge, a difference of 5.4%.
- Slightly greater decreases in serious family conflict were observed for females (from 16.7% to 9.2%, a difference of 7.5%) than for males (from 9.0% to 4.8%, a difference of 4.2%).
- Substantial decreases in serious family conflict were observed for primary alcohol users (from 14.6% to 7.1%, a difference of 7.5%) and primary stimulant users (decreases of 6.1% for cocaine/crack and 5.5% for methamphetamine/ amphetamine).

OUTCOMES

For description of change in outcomes, the summary relies mainly on the percentages at admission and at discharge (detailed in Tables 2-5). In describing 'change' in client status for a given outcome measure, we use the term *admission* to mean the earliest (first) admission in an episode and the term *discharge* to mean the last discharge or annual update record in the episode. To facilitate comparison across subgroups, the simple *difference* between admission and discharge percentages (that is, discharge percentage subtracted from the admission percentage) is included in Appendix Tables i-iv and presented in the text for selected subgroups. Note that the magnitude of these differences may be dependent on the admission percentages; e.g., if only a small percentage had (past 30-day) primary substance use at admission, then any decrease is limited, whereas with a high percentage at admission, there is "more room to decrease." To provide another perspective, Appendix Tables i-iv also includes *proportional change* in which the simple difference is divided by the admission percentage and translated to a percent. See Technical Note 5 for additional detail. Based on proportional change, we also note selected subgroups where the decrease was sufficiently large to produce a discharge rate of half or less than half that at admission.

Changes in outcomes were calculated for the episode sample as a whole, by subgroups representing selected client demographic, substance use, other personal/health characteristics, treatment patterns, and by priority/special needs subgroups as detailed and defined in earlier Chapters 1-3. We use the term *differential change* to indicate variation across subgroup categories in their differences between admission to discharge percentages; and we discuss differential change in relative terms (e.g. greater or smaller decreases in substance use) for selected characteristics where the category-to-category differences are substantial and/or of particular clinical interest. Considering that clinical or practical interpretation of outcome differences may differ among stakeholders, such interpretations are minimal.

Substance Use Outcomes

Frequency of Primary Substance Use (in Days)

Using episode treatment data, results showed an overall reduction in average number of days of primary substance use (in past 30 days) at discharge to about half that at admission (from an average of 10.0 to 5.1 days, a difference of 4.9 days). Results also indicated that decreases in the days of use differs by type of primary substance, with the greatest reductions for heroin/opiates (18.5 to 10.2 days, a difference of 8.3 days) and alcohol (12.6 to 6.7 days, a difference of 5.9 days), compared to average decreases of 3.6 to 4.8 days for other types of substances. Note[68] that the substances with the greatest decreases were those with the most frequent or highest average days of use at admission. However, when looking at the proportional decrease in average days of use, we see that marijuana users had decreases by discharge equivalent to about one-third of their usage days at admission, the largest proportional decrease among the groups categorized by type of primary substance. Overall, the median declined from 3 days at admission to 0 at discharge in past 30-day primary substance use. The median at discharge was also 0 for primary users of all specific substances except heroin/opiates for which the discharge median was 2 (a decrease from an admission median of 30). Refer to Table 1 for a detailed description of statistical findings.

If we narrow our focus and consider average days of use only for those with any past 30 day primary substance use at admission, we see higher averages than for the overall estimates described above (because those with zero days at admission have been omitted) but a similar picture of decrease (from an average of 15.4 days at admission to 7.3 days at discharge). Focusing on only episodes in which clients had any use at discharge, we found an average of 14.0 days (not shown in Table 1), slightly lower than their use level at admission (16.2 days). Thus, even for "continuing users," their days of use decreased.

[68]These results include clients with zero days of substance use in the 30 days prior to the initiation of the episode, a subgroup comprising about one-third of the client episodes. A large percentage of this group are criminal justice referred clients that were in a controlled environment (e.g. jail, prison) prior to entering treatment.

Patterns by type of substance were similar to those for the larger group of client episodes described above.

Any Primary Substance Use

The percentage of client episodes with any primary substance use in the past 30 days substantially declined from admission to end-of-episode discharge, from 65.0% to 36.1%, a difference of 28.9%; the resulting rate at discharge was just over half the rate at admission (see Table 2 and Technical Note 5). Because preliminary analyses showed similar patterns of decrease for the two alternative primary substance use outcome measures (days or none/any use), further detailed analyses by client and treatment characteristics are presented only for the dichotomous no use vs. any use measure. Figure 1 shows the overall decrease in primary substance use.

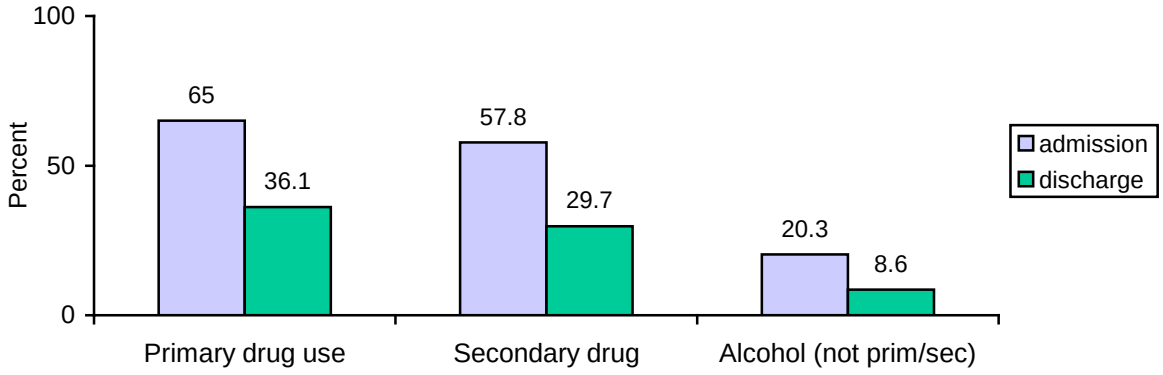
Any Secondary Substance Use

Also shown in Figure 1, the percentage of client episodes with any use of a secondary substance in the 30 days prior to the episode declined, from 57.8% (of the 42,724 episodes with clients reporting any secondary substance) at admission to 29.7% at discharge, a difference of 28.1%.

Any Use of Alcohol[69]

The percentage of client episodes with any use of alcohol in addition to other primary or secondary drug declined from 20.3% of the 37,458 responding to this question to 8.6% at discharge, a difference of 11.7% and less than half the rate at admission. (See also Figure 1).

Figure 1: Substance Use Outcomes: Percentage of Episodes with Any Substance Use at Admission and Discharge



Demographic Characteristics

The group of episodes for females experienced a decrease in percentage with primary substance use from 63.3% at admission to 33.3% at discharge (a drop of 30.0%). This was a slightly greater decrease than that experienced by males (65.9% to 37.7%, a difference [drop] of 28.2%).

Small differences were seen in decreases in primary substance use by age groups, with larger decreases in the group of episodes for youngest clients (from 58.7% to 27.0% for 12-17 year olds, a drop of 31.7%) than for the oldest clients (from 74.0% to 46.6% for those 55 years or older, a drop of 27.4%). Other age groups had decreases between those of the youngest and oldest groups. The two younger groups (12-17 and 18-24 years) had proportional decreases such that the rate of any primary drug use at discharge was half or less than half the rate at admission.

[69]For those who do not report primary or secondary alcohol use.

The decrease in primary substance use was slightly lower (63.2% to 38.6%, a drop of 24.6%) among episodes for American Indian/Alaskan Natives than other race/ethnicity groups (drops of 26.3% to 29.5%).

Decreases in primary substance use were similar across education subgroups, as well for homeless clients compared to clients not homeless.

Admission-to-discharge differences were similar for those with children under 18 years as for those without children under 18. Differences also were similar for subgroups of those with minor children; however, the subgroup of clients with minor children living elsewhere because of a child protection order did achieve a rate at discharge less than half that at admission.

Other Personal Characteristics

The group of episodes with clients reporting any serious family conflict in the 30 days prior to admission showed a greater decrease in of the percentage using primary substance (from 81.8% to 44.3%, a drop of 37.5%) than the group reporting no serious family conflict (from 63.8% to 37.2%, a drop of 26.6%).

There was a slightly smaller admission-to-discharge difference (decrease) in the percentage with any primary substance use for the group of episodes where clients had a legal or criminal justice status at admission (including parole, probation, court diversion, incarceration, awaiting trial/sentencing) compared to the group of episodes in which clients did not have a criminal justice status. For the group with criminal justice status, the percentage with any primary drug use in the prior 30 days declined from 54.6% at admission to 27.3% at discharge, a drop of 27.3%. In contrast, the group that did not have criminal justice status declined from 78.5% reporting any past 30-day primary drug use at admission to 47.6% at discharge, a drop of 30.9%. However, the group of episodes with criminal justice status did achieve a proportional decline in the rate of any primary drug use at discharge to half that at admission.

Health Status

The group of client episodes reporting sexually transmitted diseases (STD) showed a slightly greater decrease in primary substance use (from 58.6% to 26.8%, a drop of 31.8%) than the group without STD (from 66.1% to 38.3%, a drop of 27.8%). The STD group also achieved a decline in the primary substance use rate at discharge to slightly less than half that at admission.

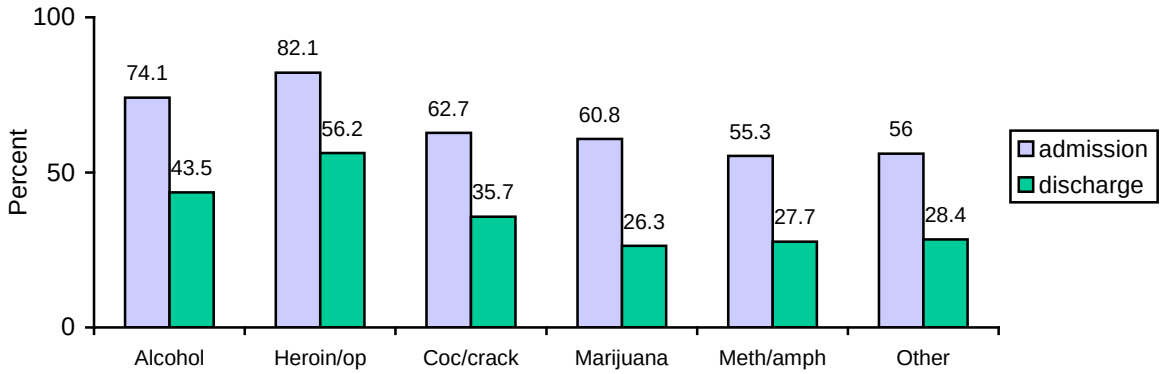
A similar small difference was observed in the decrease for the group with hospital stays for physical health problems in the 30 days prior to admission (a drop from admission to discharge of 31.4%), as compared to the group without such hospital stays (a drop of 27.8%).

Differences in admission to discharge decrease were very small or negligible comparing across subgroups by medical problems (i.e. medical problems vs. no medical problems), emergency room visits, and other infectious diseases (i.e., tuberculosis, hepatitis c).

Substance Use

As shown in Figure 2, the decrease in any past 30-day use differs by type of primary substance. We see the greatest change for marijuana users (decreasing from 60.8% at admission to 26.3% at discharge, a drop of 34.5%) and the smallest change for heroin/opiate users (from 82.1% to 56.2%, a drop of 25.9%). Decreases for the other primary substance categories fell between these extremes, with drops of 27.6% to 30.6%. Notice that primary marijuana and methamphetamine/amphetamine user subgroups achieved a use rate at discharge half or less than half that at admission. Note also that marijuana users tended to be younger than users of other substances, so the large decrease coincides with that of younger clients as described in the section above. Looking in more detail at prescription drugs (not shown in Table 2), we see a decrease in primary use of prescription opiates from 86.9% to 55.6% (a drop of 31.3%), somewhat greater than for the general category of heroin/opiate use (which included the small number of prescription opiate users). Benzodiazepine users showed a decrease from 81.8% to 52.7% (a drop of 29.1%), near the overall average decrease across the entire episode sample.

Figure 2: Percentage of Episodes with any past Month Use at Admission and Discharge by Primary Substance



Frequency of Use

We examined the admission to discharge decreases in percentages with primary drug use by categories of frequency (days) of use in the 30 days prior to admission (an indicator of severity). Results showed that the highest severity group (21-30 days) had smaller decreases than two of the lower severity groups. Among episodes for the most severe clients (frequency of use of 21-30 days), the percentage reporting primary substance use decreased from 100% at admission to 62.8% at discharge, a drop of 37.2%. In contrast, the lower severity groups (1-10 or 11-20 days) showed much greater admission to discharge differences (decreases) of 57.1% and 55.0%, respectively. In terms of proportional change, these lower severity groups achieved a rate of primary substance use at discharge half or less than half their rate at admission. Some clients (9.4%) who had not used in the 30 days prior to admission had resumed use of their primary drug in the 30 days prior to discharge.

Injection Drug Use

A larger decrease in the percentage with any primary substance use in the prior 30 days was seen for the group with recent (past 30-day) injection use prior to admission than for the group not injecting in the 30 days prior to admission. Among the episodes for recent injectors, primary substance use declined from 100% at admission to 64.5% at discharge, a difference of 35.5%. The group without recent injection use showed a decrease in primary drug use from 60.8% at admission to 32.7% at discharge, a drop of 28.1%).

Differential change in primary drug use was negligible for the group of injection users defined by past year injection use compared to the group of non-injectors. The group reporting injection as their usual route of primary substance use showed a slightly small decrease in primary drug use (from 75.5% to 40.0%, a drop of 25.5%) compared to the group reporting other routes for use of their primary drug (from 63.1% to 33.7%, a drop of 29.4%).

Primary plus Secondary Use (polydrug use)

Among episodes in which clients reported a secondary substance in the 30 days prior to admission (in addition to the primary substance), the decrease in the percentage using the primary substance was larger (from 89.7% to 47.2%, a drop of 42.5%) than for the group with no use of their secondary substance in the 30 days prior to the first admission in the episode (from 26.6% to 15.6%, a drop of 11.0%).

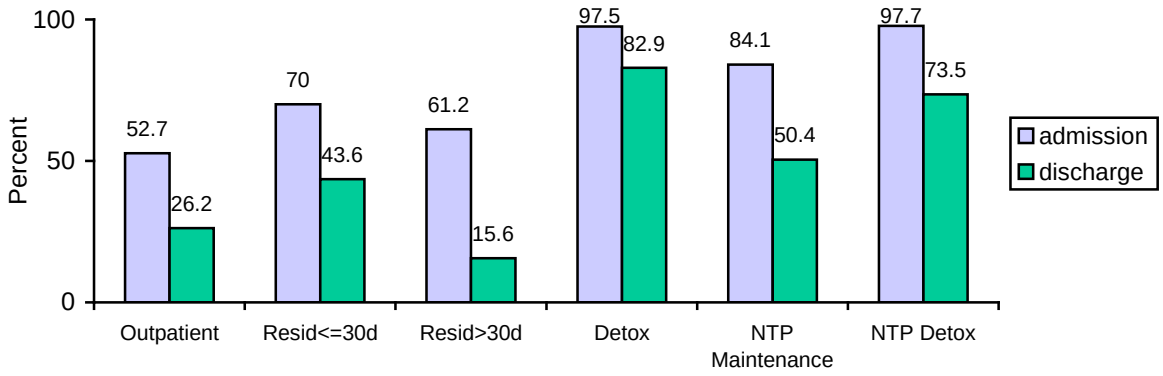
Previous Treatment

The group of episodes with clients reporting no prior treatment episodes showed a somewhat larger decrease in percentage with any primary drug use (from 65.5% to 34.4%, a drop of 31.1%) than those with prior treatment (from 64.7% to 38.0%, a drop of 26.7%).

Treatment Characteristics

Differential change was seen in any (past 30-day) use of the primary substance by the type/modality of treatment which began the episode (Technical Note 6). As shown in Figure 3, the smallest admission-to-discharge decrease in percentage with primary substance use was observed for the group of episodes beginning with detoxification (both non-NTP and NTP), decreasing from 97.5% at admission to 82.9% at discharge, a drop of only 14.6%. Note that most of those beginning with detoxification had only one detoxification service and, thus, a short time in treatment[70]. The largest decrease was for the group of episodes beginning with long-term residential treatment, decreasing from 61.2% to 15.6%, a drop of 45.6%. Groups of episodes beginning with other types/modalities of treatment had decreases in primary substance use within the range 24.2% to 33.7%. Note that client episodes starting with long-term residential (>30 day) treatment achieved a use rate at discharge of about one-fourth that at first admission in the episode, and the use rate for episodes beginning with outpatient[71] treatment at discharge was half that at admission.

Figure 3: Percentage of Episodes with Any Primary Substance Use at Admission and Discharge by Type/Modality of Treatment at the Beginning of the Episode



The decrease in primary substance use differed somewhat by source of referral. The smallest decrease was for episodes in which the client was referred through criminal justice system (CJS), court, or child protective service (CPS) (other than through the Substance Abuse and Crime Prevention Act [SACPA]); this group decreased from 47.8% at admission to 23.1% at discharge, a drop of 24.7%. The largest decrease was for the "other" source of referral group (from 69.6% to 39.3%, a drop of 30.3%). Note that in spite of not having the largest decreases in terms of simple differences, the self and SACPA referral sources had large proportional change, resulting in a rate of primary substance use at discharge just less than half that at admission.

[70] The SAMSHA Treatment Improvement Protocol (TIP) 45 ["Detoxification and Substance Abuse Treatment (2006)]" states that detoxification, by itself, does not constitute complete substance abuse treatment and that the success of the detoxification process can be partially evaluated by whether a substance-dependent client enters and remains in some type of substance abuse treatment after detoxification.

[71] Similar decreases were seen for intensive day outpatient treatment.

County Differences

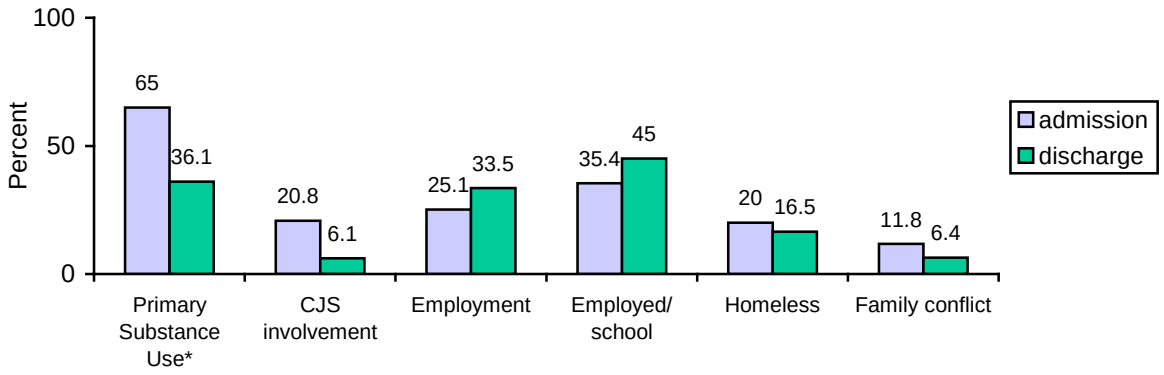
The magnitude of decrease from admission to discharge in percentage of client episodes with any past 30 day use of the primary substance ranged from 0% to 70.4% across counties. Almost two-thirds (62%) of the counties experienced a difference of 21% to 40% in primary drug use rates from beginning to end of episodes. Sixteen percent of counties had admission to discharge differences in use rates greater than 40%; and 22% of counties had decreases of 20% or smaller. However, there was considerable variability in the magnitude of decreases across the entire range of substance use rates at admission . For example, one county began with 84.4% of client episodes reporting past 30 day primary drug use at episode admission and decreased to 69.0% (a difference of 15.4%), while another county began at a similar level of 86.4% but decreased to 19.1% (a difference of 67.3%). One county with a smaller percentage (49.8%) of client episodes with any substance use at admission decreased to 12.4% (a difference of 37.4%), while another county beginning at the same level of 49.9% decreased to 47.2% (a difference of 2.7%).

OTHER OUTCOME MEASURES

In addition to reductions in substance use, there were also significant improvements in the other outcome measures, including criminal justice involvement and crime, employment/education, stability in housing (as measured by homelessness), social connectedness (as measured by family relations) from admission to discharge across all treatment episodes analyzed. See Figure 4 below and Table 3 for more statistical detail. Overall, results indicate that, across all episodes, criminal justice involvement declined from 20.8% at admission to 6.1% at discharge, a drop of 14.7%, to under one-third the rate at admission. The percentage employed increased from 25.1% to 33.5% (an increase of 8.4%). When enrollment in school or job training was also included along with employment, results also showed an improvement, from 35.4% to 45.0% (an increase of 9.6%). Homelessness declined slightly, from 20.0% to 16.5% (a drop of 3.5%). Serious family conflict declined from 11.8% to 6.4% (a drop of 5.4%). While the admission to discharge difference was small, the proportional change was substantial and brought the discharge rate to near half that at admission.

These results indicate that differences in percentages between admission and discharge are not as large as differences observed in substance use indicators discussed above (which is also included in Figure 4 as reference). This observation is likely given that fewer clients entered treatment with problems in these areas, as explained above, although it may also be due to the focus of treatment. Further research is needed to be able to interpret and understand these differences, clinically. In sections below we provide detail of only a few selected differential outcomes, with somewhat more discussion of criminal justice involvement than for the other outcome measures that showed substantially smaller changes from admission to discharge.

Figure 4: Admission and Discharge Change in Outcomes (reference*)



Criminal Justice Involvement

The outcome measure representing criminal justice system (CJS) involvement and crime was defined with two categories: 1) any arrests and/or days in jail or prison in past 30 days, or 2) no arrests and no days in jail or prison.[72]

Demographic Characteristics

Results showed a slightly greater decline in criminal justice involvement for males (from 21.9% at admission to 6.3% at discharge, a drop of 15.6%) than for females (from 18.8% to 5.4%, a drop of 12.9%). Both gender groups achieved substantial proportional change which brought their rates of primary substance use at discharge to between one-third and one-fourth the rates at admission.

Decreases in criminal justice involvement for the youngest (12-17 years) and oldest (55 or older) age groups were smaller in terms of admission to discharge differences than for other age groups, consistent with their lower initial levels allowing for less change. The youngest group decreased from 9.1% to 3.9% (a drop of 5.2%) and the oldest age group decreased from 13.2% to 3.8% (a drop of 9.4%). Other age groups showed decreases in the range 12.9% to 17.1%. All groups showed substantial proportional change, with primary substance use rates at discharge considerably less than half the rates at admission.

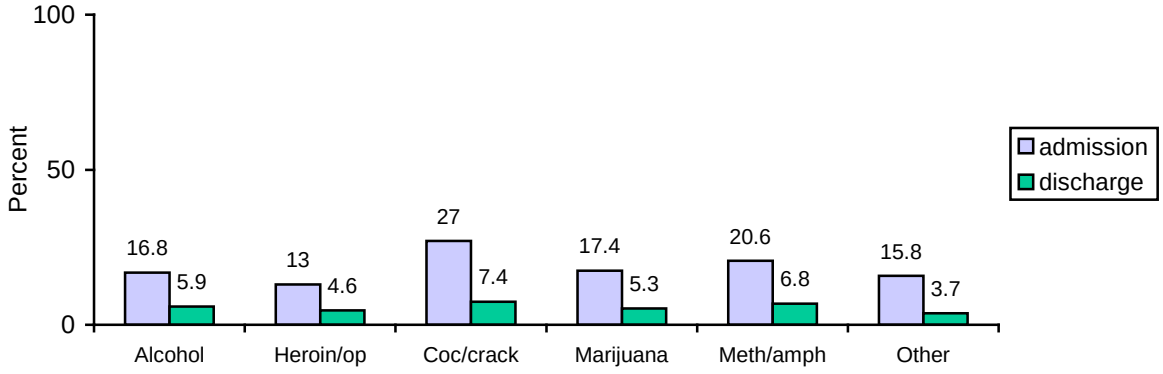
A slightly greater decrease in criminal justice involvement was seen for the group with children under 18 years (from 24.2% to 6.7%, a drop of 17.5%) compared to the group with no minor children (from 20.0% to 6.1%, a drop of 13.9%). Among subgroups of those with minor children, the largest decline was for those reporting loss of parental rights (from 30.7% to 8.5%, a drop of 22.2%).

Negligible differential decreases in criminal justice involvement were seen by race/ethnicity, education, or homelessness subgroups.

Substance Use

Figure 5 shows admission to discharge differences in criminal justice involvement by primary drug. As shown, criminal justice involvement declined somewhat more among cocaine/crack users (from 27.0% to 7.4%, a drop of 19.6%) than among primary users of other types of substances (drops of 8.4% to 13.8%).

Figure 5: Percentage of Episodes with Any Criminal Justice Involvement (Arrests, Jail, Prison) at Admission and Discharge by Type of Primary Substance



Decreases in criminal justice system (CJS) involvement were inversely related to severity (frequency of days) of primary drug use in the 30 days prior to admission. The largest decline (from 26.5% at admission to 5.8% at discharge, a drop of 20.2%) was for the group reporting no use of their primary drug at

[72] Note that this outcome is defined differently from the admission characteristic "legal/criminal justice status" which has been used to define subgroups of episodes for descriptive purposes. Legal/criminal justice status also includes parole, probation, court diversion, incarceration, and awaiting trial, charges, or sentencing.

admission; and the smallest decline (from 12.9% to 5.8%, a drop of 7.1%) was for those with frequent (21-30 days) use. Note that factors other than drug severity (as measured by frequency of use) may be involved in this observed relationship. For example, the no use subgroup also had disproportionate representation of clients with CJS involvement at admission (68% had been referred to treatment through CJS channels compared to 21% to 53% of the other drug severity subgroups); and their substance use may have been limited because of the controlled environments.

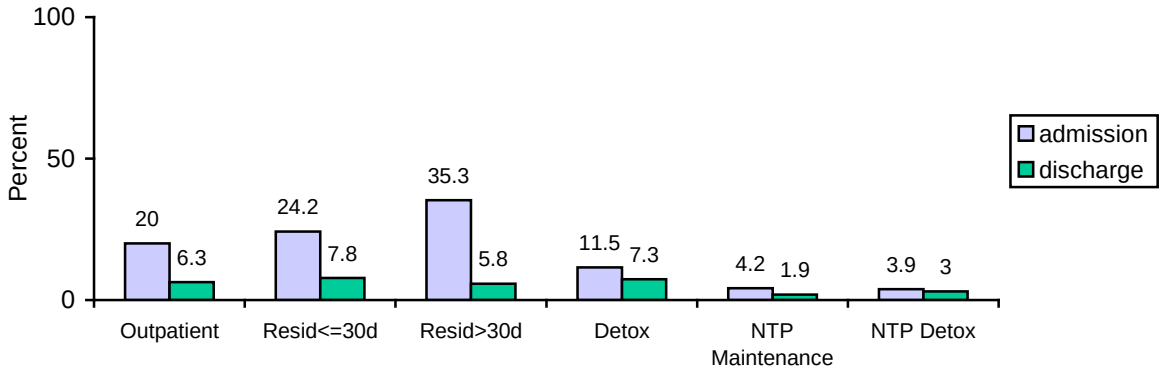
The group with injection use in 30 days prior to admission had a smaller decrease in criminal justice involvement (from 14.9% to 5.8%, a drop of 9.1%) compared to those with no recent injection use (from 21.5% to 6.1%, a drop of 15.4%). Differential change in criminal justice involvement was negligible for other indicators of injection use (past year and usual route for primary drug) .

The group reporting any use of a secondary drug showed smaller decreases in criminal justice involvement from admission to discharge (from 26.5% to 5.8%, a drop of 20.7%) than those reporting no secondary drug use (20.2% to 7.0%, a drop of 13.2%).

Treatment Characteristics

As shown in Figure 6, the group of episodes beginning with long-term (>30 day) residential treatment had the largest decreases in criminal justice involvement (from 35.3% at admission to 5.8% at discharge, a drop of 29.5%). The next largest decrease was for the group starting in short-term residential treatment with a decrease from 24.2% to 7.8% (a drop of 16.4%). Episodes beginning in outpatient treatment showed a decrease from 20.0% to 6.3% (a drop of 13.7%). Note also that these three treatment groups also started with higher initial levels of criminal justice involvement than did groups with other types/modalities of treatment. Groups beginning their episodes with other types of treatment showed substantially smaller admission-to-discharge differences (decreases of 0.9% to 4.2%).

Figure 6: Percentage of Episodes with Any Crime/Criminal Justice Involvement (Arrests, Jail, Prison) at Admission and Discharge by Type/Modality of Treatment at Beginning of Episode



Criminal justice Involvement decreased more for those referred to treatment through SACPA (from 31.5% to 7.8%, a drop of 23.7%) or other CJS/CPS/court sources (from 29.5% to 8.2%, a drop of 21.3%) than for other types of referral. As would be expected, other types of referrals (self and "other") had considerably lower rates of criminal justice involvement at admission and their admission to discharge differences were also low (drops of 6.4% and 8.2%, for self and other, respectively); nevertheless, they showed substantial proportional change, with primary substance use rates at discharge considerably less than half the rates at admission..

Employment and Education/Training

The primary employment outcome was defined with two categories: 1) currently employed; and 2) not employed. A secondary outcome measure included school/training enrollment along with employment, with two categories: 1) currently employed and/or enrolled in school and/or enrolled in job training; 2) not employed and not enrolled in school or job training.

Demographic & Other Personal/Health Characteristics

The percentage employed increased across all demographic subgroups. Substantial differential change in employment was not observed for subgroups within gender, race/ethnicity, education, or homeless status. As would be expected, the youngest (12-17 years) and oldest (55 years and older) had the lowest employment rates, and they showed the smallest admission to discharge differences in percentage employed (increases of 3.0% and 3.6%, respectively). Other age groups showed increases in percentage employed of 7.0% to 10.2%.

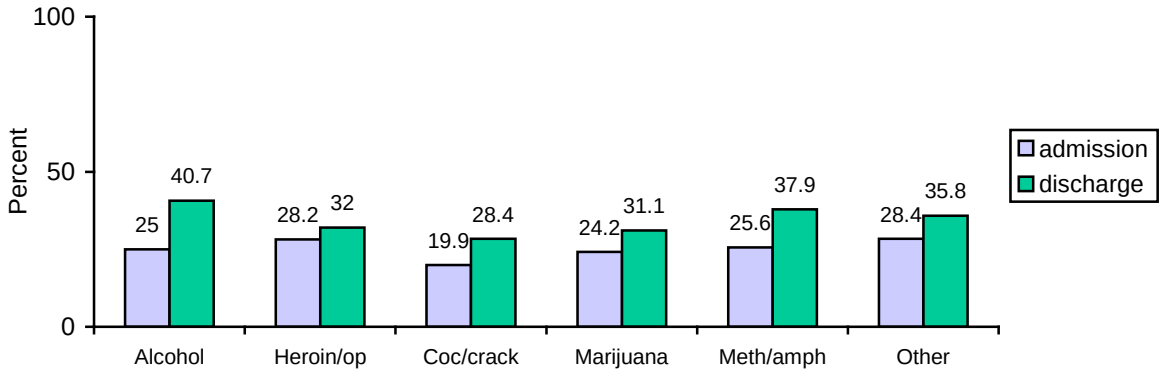
Little difference was observed in employment increases comparing groups with and without children less than 18 years. However, two of the subgroups of episodes for clients with children less than 18 years showed slightly greater increases: the group with minor children living elsewhere increased from 18.9% to 30.8% (a difference of 11.9%), and those with loss of parental rights changed from 15.5% to 26.3%, an increase of 10.8%.

Employment increased slightly more for the group of episodes for clients with no medical problems (from 28.3% to 36.9%, an increase of 8.6%) than for those with medical problems (18.7% to 24.1%, an increase of 5.4%). Likewise, the group with no emergency room visits had a greater increase (from 27.6% to 36.2%, an increase of 8.6%) than the group with emergency room visits (16.5% to 20.0%, an increase of 3.5%).

Substance Use

As shown in Figure 7, increases in employment by type of primary substance were greatest for alcohol users (from 25.0% to 40.7%, a gain of 15.7%) and methamphetamine/amphetamine users (from 25.6% to 37.9%, a gain of 12.3%), compared to gains of 3.8% to 8.5% for users of other types of drugs.

Figure 7: Percentage of Episodes Reporting Employment at Admission and Discharge by Type of Primary Substance



Similar to improvements in criminal justice involvement, employment increases were inversely related to the frequency (number of days) of primary substance use in the 30 days prior to admission. The largest gains were for those with no past 30 day use at admission (from 27.3% at admission to 41.0% at discharge, a gain of 13.7%) and the smallest for those with frequent (21-30 days) use (from 20.2% to 23.4%, a gain of only 3.2%).

Those with recent (past 30 day) injection use also had limited employment gains, with recent injectors' employment increasing from 23.4% to 27.1% (an increase of only 3.7%) compared to a change from 25.3% to 34.2% for those with no recent injection use No substantial differential change was observed for other injection use indicator subgroups.

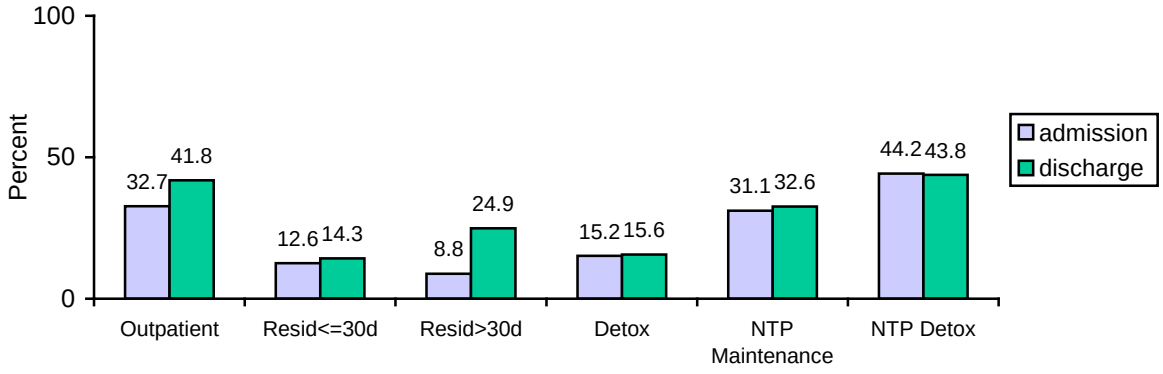
Improvement in percentage employed was also limited for episodes in which clients reported past 30-day secondary substance use (from 22.1% to 28.7%, an increase of 6.6%), compared to a change from 25.4% to 38.3% (an increase of 13.9%) for those without recent secondary substance use.

Treatment Characteristics

Again, similar to the criminal justice involvement outcome, greater improvement in employment was seen for SACPA and other CJS/CPS/court referrals (gains of 11.1% and 13.1%, respectively) compared to other types of referrals (gains of 4.1% to 6.1%).

As shown in Figure 8, the largest improvements were seen for episodes beginning with long-term (>30 days) residential services (from 8.8% at admission to 24.9% at discharge, a gain of 16.1%) and outpatient (from 32.7% to 41.8%, a gain of 9.1%). Gains were in the nearly 0 to 1.7% range for other types of treatment. Note that the proportional change for the long-term residential subgroup brought its discharge rate of employment to nearly three times that at admission.

Figure 8: Percentage of Episodes Reporting Employment at Admission and Discharge by Type/Modality of Primary Substance



For the secondary outcome measure which included enrollment in school and/or job training programs as well as employment, rates were higher than for employment alone at both admission and discharge. Increases in percentages from admission to discharge were also usually slightly greater than for employment alone. However, patterns of differential change were similar to those described above for employment alone.

Stability in Housing

In this chapter we have used homelessness as a measure of stability in housing.[73] Differential change in homelessness was typically quite small or negligible. However, we note some differential change of potential interest. Primary alcohol users had a greater decrease (from 26.8% to 21.3%, a drop of 5.5%) than did other substance users (drops of 1.3 to 3.9%).

[73]Results showed that the percentage of adults (18 and older) in dependent living situations changed very little from admission to discharge (a negligible increase from 35.8% to 36.7%).

Social Connectedness

In this chapter we have used the degree of family conflict as a measure of social connectedness, defined as: 1) any days with serious family conflict in the past 30 days or 2) no days of serious family conflict in past month.

Demographics and Health Status Characteristics

There was a slightly greater decrease for females than for males from admission to discharge in percentage with family conflict within the past 30 days. The percentage of episodes for females reporting family conflict decreased from 16.7% at admission to 9.2% at discharge, a drop of 7.5%). For males, the decrease was from 9.0% to 4.8%, a drop of 4.2%.

The decrease in percentage of episodes with clients reporting family conflict was greater for the group in which clients had more than a high school education (from 14.8% to 5.7%, a drop of 9.1%) than for those with less than high school or high school education (drops of 4.5% and 5.3%, respectively).

The group reporting homelessness at admission also showed a greater decline (from 14.8% to 4.7%, a drop of 9.1%) compared to those not homeless (from 11.2% to 6.6%, a drop o f4.6%).

Those with medical problems, sexually transmitted diseases, hospital stays, or emergency room visits had greater decreases (drops of 10.2% to 12.3%) than those without these problems/events (drops of 4.8% to 5.3%).

Substance Use

Less decline in the percentage of episodes in which clients reported family conflict was observed for marijuana or heroin/opiate users (admission-to-discharge decreases of 2.9% and 3.2%, respectively) compared to users of other substances (decreases of 5.5% to 8.1%).

A greater decrease in percentage with family conflict was observed for the group of episodes with more severe substance use. Those with 11-20 days of primary substance use in the 30 days prior to admission showed decreases from 20.5% to 8.8% in family conflict, a drop of 11.7%. Those with 21-30 days of use showed a decrease from 18.6% to 9.3%, a drop of 9.3%. While the admission-to-discharge difference (6.5%) was smaller for those with 1-10 days use, the reduction was sufficient to put the discharge rate at half that at admission for this group, similar to the higher frequency of use groups. The group with no days of primary drug use in the 30 days prior to admission had the smallest decrease in family conflict (a drop of 1.9%).

Treatment Characteristics

The self-referred and other (non-criminal justice) referred groups had the largest decreases in family conflict (from 18.1% to 8.7%, a drop of 9.4%, and from 14.7% to 7.3%, a drop of 7.4% respectively). These decreases resulted in discharge rates of family conflict less than half the rates at admission. Note that these self- and other-referred groups also had the greater declines in any primary substance use, which in turn may be related to decreases in family conflict; and they had higher percentages with use at admission (84.1% and 69.4%) compared to CJS-referred groups (54.6% and 47.7%) [not shown in tables]. The SACPA- and other criminal justice/court-referred groups had small drops of 2.9% and 3.6%, respectively; these two groups had substantially lower levels of family conflict at admission than did self- and other-referred and also had lower proportional change.

The groups of episodes starting with detoxification or longer-term (>30 days) residential services had larger decreases in family conflict (from 15.2% to 4.3% and 20.6% to 6.8%, respectively, with decreases of 13.8% and 10.9%). Groups of episodes starting with other types of treatment showed decreases of nearly zero to 8.7%.

OUTCOMES BY PERFORMANCE MEASURES

Outcomes were examined for subgroups of episodes categorized by performance measures, including continuity of care, retention and completion. Continuity of care indicators included number of service sets in the episode (represented by three categories, 1, 2, >2) and type(s) of services included in the episode (represented by six categories for unique types of service and a seventh category for combinations of types of service). Two retention indicators were examined, each with two categories: 1) less than 90 days vs. 90 or more days in the treatment episode; and 2) less than 60 days vs. 60 or more days. Completion was represented by two categories, completed and did not complete treatment, based on latest discharge status in the episode.

Continuity of Care

Slightly greater decreases in any primary substance use were seen for episodes that included more than one service set within the episode. (See Chapter 4 for more detail on patterns of service within episodes.) Among episodes with two services, there was a decrease in percentage with primary substance use from 71.0% at admission to 34.2% at discharge (a drop of 36.8%); and among those with more than two services there was a decrease from 75.5% to 35.5% (a drop of 40.0%). These groups (with at least two services) had discharge rates of primary drug use less than half their rates at admission. Among those with only one service, the decrease was from 63.6% to 36.4% (a drop of 27.2 %).

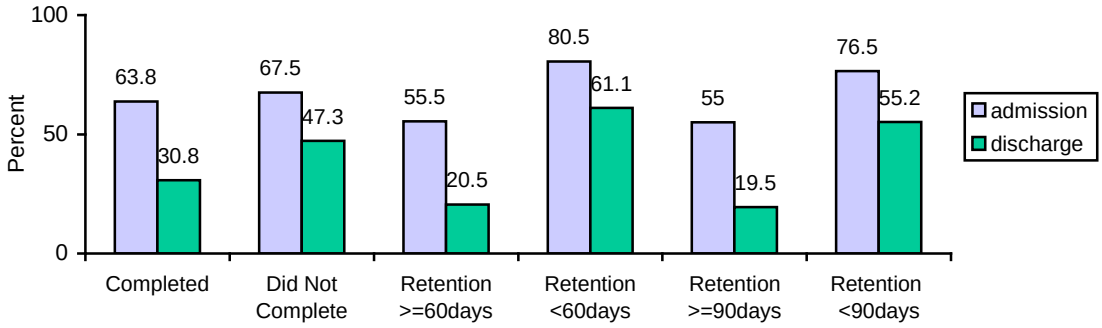
Because episodes can include more than one type of service (see Technical Note 2 and Chapter 4), we also considered change across groups defined by only one type of service vs. combinations of services. Results mirror those described in an earlier section for the type of treatment beginning the episode. The group of episodes comprised of only long-term (>30 days) residential service (one or more service sets, all being long-term residential) showed the greatest decrease from admission to discharge in percentage using the primary drug (from 61.3% to 15.6%, a drop of 45.7%), followed closely by the group of episodes with a combination of different types of service (from 74.1% to 31.3%, a drop of 42.8%). Episodes with only detoxification showed very small decreases (7.5% and 8.4% for non-NTP and NTP detoxification, respectively). Other types of treatment fell between the extremes with drops of 26.2 to 33.4%.

Similar general patterns were seen for other outcomes. The group with only one service set had smaller improvements than those with two or more service sets in criminal justice involvement, homelessness, and family conflict. Groups with only long-term (>30 days) residential service (one or more service sets, all being long-term residential) or combinations of continuing services showed the greater decreases in percentages from admission to discharge for criminal justice involvement, employment, and homelessness.

Retention & Completion

Similar patterns were seen in primary substance use reduction when considering performance measures of retention and completion. As shown in Figure 9, the groups with completion or longer retention showed greater decreases in substance use than subgroups with non-completion or shorter retention. The decrease in percentage of episodes with primary substance use among treatment completers was from 63.8% at admission to 30.8% at discharge, a drop of 33.0%. In contrast, non-completers experienced a decrease from 67.5% to 47.3%, a drop of 20.2%. Similarly, episodes for clients that stayed in treatment for at least 90-days had an even larger decrease in percentage with primary substance use, from 55.0% at admission to 19.5% at discharge, a drop of 35.5%; those with shorter retention (less than 90 days) decreased from 76.5% to 55.2%, drop of 21.3%. Overall, the better performing clients (completed, retention >=60 days, retention >=90 days) all achieved primary substance use rates at discharge less than half that at admission, with the >=90 day retention group declining to nearly one-third that at admission.

Figure 9: Percentage of Episodes with Any Primary Substance Use at Admission and Discharge by Retention and Completion



A greater decrease in criminal justice involvement was observed for the group of episodes with retention of at least 60 days, from 22.0% to 4.1%, a drop of 17.9%; while the group with shorter (<60 days) retention decreased from 18.8% to 9.3%, a drop of 9.5%. Similar results were observed for retention of at least 90 days compared to less than 90 days.

Increases in employment were higher for the group of episodes with better treatment performance in terms of either completion or longer retention. Percentage employed in the group with treatment completion rose from 25.7% at admission to 37.2% at discharge, an increase of 11.5%. In contrast, little change was seen for the non-completion group (from 23.6% at admission to 25.1% at discharge, an increase of 1.5%). Retention groups followed a similar pattern. Percentage employed in the group with retention of 90 days or more rose from 28.8% to 43.6%, an increase of 14.8%. In contrast, little change was seen for the group with shorter retention (from 20.6% to 21.5%, an increase of only 0.9%).

Better treatment performance (i.e. completion or longer retention) was also associated with greater decreases in homelessness. For example, the decrease was from 21.5% to 16.5% for the group of episodes with treatment completion (a drop of 5.0%), while very little change was shown for the non-completion group (from 17.2% to 16.8%, a drop of 0.4%).

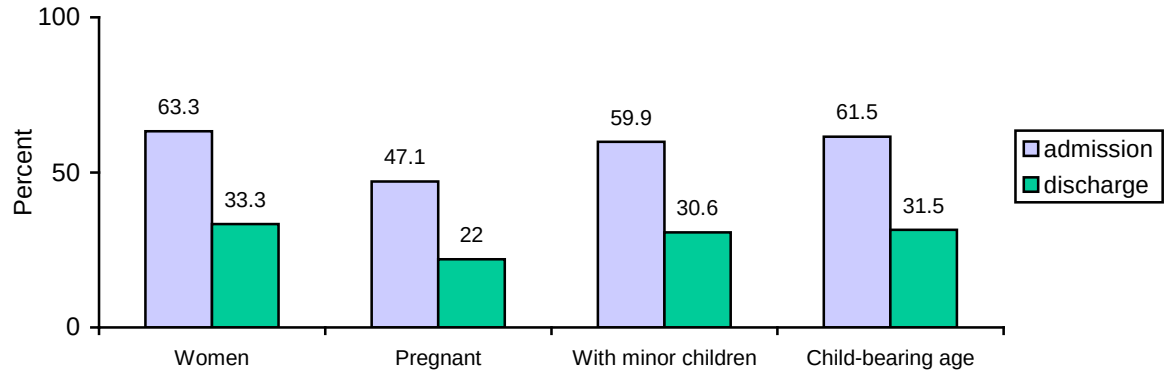
The group completing treatment had a greater decrease in percentage with serious family conflict (from 11.4% at admission to 4.7% at discharge, a drop of 6.7%). The group not completing treatment showed a decrease from 12.8% to 9.8%, a drop of 3.0%. Interestingly, there was little differential change in percentage with family conflict by retention subgroups.

OUTCOMES BY SPECIAL NEEDS/PRIORITY GROUPS

Outcomes were examined for special needs/priority groups as defined in more detail in Chapter 2: women and selected subgroups of women including those pregnant, with minor (<18 years) children, and women of child-bearing years (ages 15-44); selected age groups, including youth (12-17 years), young adults (18-25 years), and older adults (55 years and older); (lifetime) mental illness; legal/criminal justice status (including probation, parole supervision, incarceration, awaiting trial, or other court diversion; injection drug users (past 30 days or usual route); homeless; veterans; disabled; and Medi-Cal recipients.

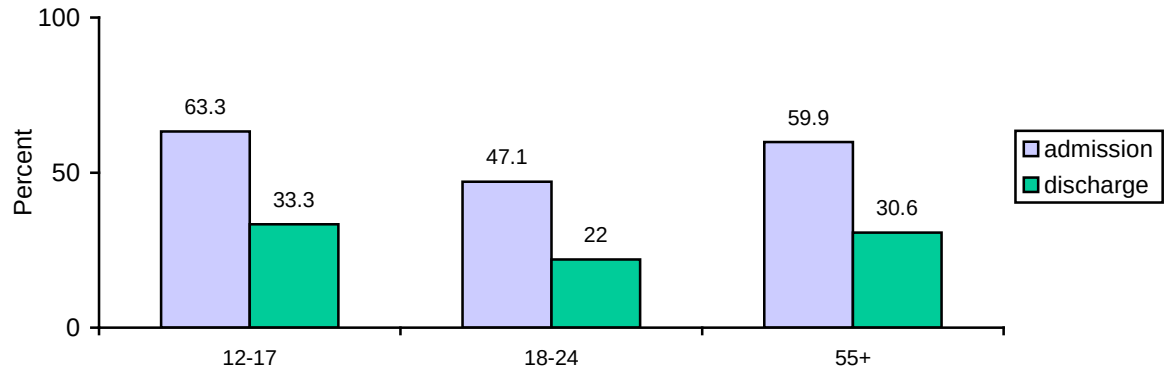
Among women, changes in primary drug use were similar across most subgroups with decreases of about 30% (e.g. from 59.5% at admission to 30.6% at discharge for those with minor children, a drop of 29.3%). See Table 4 and Figure 10. Pregnant women had a slightly lower decrease in percentage use, but started from a lower level (from 47.1% to 22.0%, a drop of 25.1%); note that their use decreased to less than 1/2 the rate at admission.

Figure 10: Percentage of Episodes Reporting Primary Substance Use at Admission and Discharge by Special Need/Priority Women's Groups



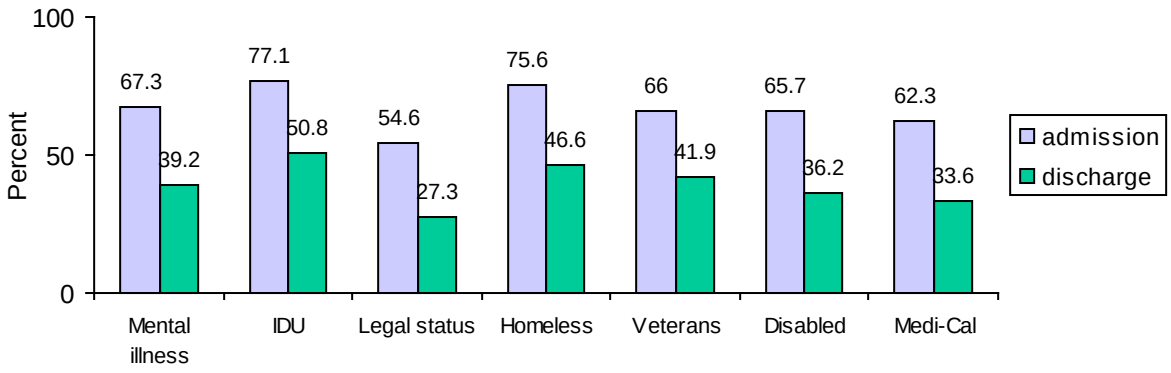
Age groups differences were already described in the preceding sections, but are displayed in Table 4 and Figure 11 for completeness.

Figure 11: Percentage of Episodes Reporting Any Use of Primary Drug at Admission and Discharge by Special Need/Priority Age Groups



Other priority groups are shown in Figure 12. Most showed decreases similar to the overall episode sample, with most decreases in percentages using primary drug of 26.3% to 30.1% from admission to discharge. The group of veterans had a slightly lower decrease, from 66.0% at admission to 41.9% at discharge, a drop of 24.1%.

Figure 12: Percentage of Episodes Reporting Any Use of Primary Drug at Admission and Discharge by Special Need/Priority Women's Groups



Other Outcome Measures for Special Needs/Priority Groups

For this section, rather than discuss each outcome domain, we focus on specific special need/priority groups that stand out in terms of particularly low or high change (and were not covered in earlier sections). See Table 5.

The group of episodes for pregnant women showed the greatest decrease among women's subgroups in terms of CJS involvement (from 24.9% at admission to 6.9% at discharge, a drop of 18.0% compared to drops of 12.9% to 14.9% for the other women's subgroups). As would be expected, the group of episodes for pregnant women showed the least increase in employment, but was more similar to other women's subgroups when school/training enrollment was included.

As already described in earlier sections, young adults showed greater decreases in percentage with CJS involvement (from 23.2% at admission to 6.9% at discharge, a drop of 16.3% compared to a drop of 5.2% for 12-17 year olds and 9.4% for older adults). Young adults also had a larger increase in employment (10.3%); but even with school/training enrollment included, about half were not employed or enrolled at discharge.

Those with a lifetime history of mental illness showed improvement in all domains. The amount of change was similar to the overall episode sample for CJS involvement, employment (even though rates were substantially lower than the overall sample at both admission and discharge), and homelessness. The decrease in family conflict (an admission to discharge difference of 9.1%) was somewhat higher than that of the entire episode sample (5.4%).

We note that rates of employment, while improving from admission to discharge, remained quite low among most priority groups. Rates were a little higher when school/training enrollment was included (particularly for 12-17 year-olds), but still low for most groups. In addition, while there was a decrease in homelessness for all priority groups, levels of homelessness remained high.

Limitations and Future Analyses

Several limitations of data and analyses require reader caution in interpreting results. Outcomes analyses were based on episodes with non-administrative discharges. Outcome measures are not collected when clients are administratively discharged and, thus, such episodes cannot be included in the outcomes analyses. Exploratory analyses suggested that there were some differences in client characteristics at admission between groups of episodes ending in

administrative discharges and those ending in non-administrative discharges. These differences indicate potential bias in assessing outcomes. That is, outcomes (if, in fact, they could be measured for all episodes) may be different for episodes ending with an administrative discharge than for those ending with a non-administrative discharge because these groups started their treatment with different characteristics. Thus, the evaluation results cannot be generalized to all client episodes, but only to clients like those with non-administrative discharges. Future analyses could use propensity scores or other related statistical approaches to adjust for possible self-selection into administrative vs. non-administrative discharge subgroups such that outcome results could be interpreted as system-wide. Another approach would be for CalOMS to include interim assessment of selected outcome measures (e.g. past 30-day primary substance use measured every 30 or 60 days) such that patterns of substance use could be analyzed and fewer clients would have episodes with no outcome data.

Other chapters have raised some issues relevant to the consistency of interpretation of definitions (e.g. discharge status) for CalOMS response categories. Continuing attention by counties to standardization of definitions and training of data collection staff may improve the interpretability of results.

While small differences in outcomes across client subgroups may be statistically significant, such small differences may not be clinically meaningful. In addition, the magnitude of differences may have different meanings to different counties, depending on treatment population size, financial impact of differences, etc. Detailed analyses of county-level data may improve the utility of results for treatment development and modification.

Analyses have considered differential outcomes for only one characteristic at a time. It is likely that there may be confounding across client, drug use, and treatment characteristics; therefore, one cannot attribute “independent” effects to any of the results. For example, marijuana users also tend to be younger than other substance user groups, thus any outcome by substance use results may not be independent of outcome by age relationships. Clients under criminal justice system supervision on with jail/incarceration prior to admission to treatment may be disproportionately represented in certain subgroups because, e.g., their access to substance abuse may have been constrained by the controlled environment, their living situation impacted, etc. Future analyses could consider multivariate prediction of outcomes in order to assess relationships to client, substance use, and treatment characteristics controlling for others of these characteristics.

The outcomes analyses were based on episodes as identified within the CalOMS system. The link between the clinical meaning of an “episode” and its administrative (or data) definition is a topic for continued future discussion, incorporating conceptual issues of continuity of care. For example, should multiple sequential admissions to detoxification within 30 days of each other be considered an episode of care? Or should these be considered distinct multiple episodes? Or should episodes with only detoxification services be analyzed separately, or excluded, since detoxification services alone do not constitute a comprehensive substance abuse treatment? How should concurrent treatment services be considered? In addition, since programs within a specific treatment modality may differ considerably in content and intensity, assessment of outcomes could benefit from assessment of actual services (type, duration, and frequency) provided.

REFERENCES

Fitzmaurice, G., Laird, N., & Ware, J. (2004) *Applied Longitudinal Analysis*. Hoboken, NJ: John Wiley.

McLellan, A.T. (2002). The outcomes movement in substance abuse treatment: Comments, concerns and criticisms. In: Sorenson, J. & Rawson, R. (eds.). *Drug abuse treatment through collaboration: Practice and research partnerships that work*. Washington, D.C.: American Psychological Association Press, pp. 119-134.

McLellan, A.T., Chalk, M., & Bartlett, J. (2007). Outcomes, performance, and quality – What's the difference? *Journal of Substance Abuse Treatment, 32*(4), 331-340.

Preiser, J. & Koch, G. (1997) Categorical data analysis in public health. *Annual Review of Public Health, 18*, 51-82.

Substance Abuse and Mental Health Services Administration (SAMHSA). *National Outcome Measures (NOMs). 2007*. Available at: http://www.nationaloutcomemeasures.samhsa.gov/outcome/index_2007.asp.

Table 1: Average Number of Days of Primary Substance Use (past month), for All Episodes and for Those with Any Primary Substance Use in 30 Days Prior to Admission

		Average Number of Days: Primary Substance Use *Past 30 days*		Median Number of Days: Primary Substance Use *Past 30 days*	
	n[1]	**Admission**	**Discharge**	**Admission**	**Discharge**
All Episodes					
Overall	81,382	10.0	5.1	3	0
By primary substance					
Alcohol	17,681	12.6	6.7	7	0
Heroin/opiates	12,284	18.5	10.2	30	2
Cocaine/crack	8.839	9.1	4.9	2	0
Marijuana	11,189	7.4	2.8	2	0
Methamphetamine/amphetamines	30,440	6.5	2.9	1	0
Other drugs	949	8.5	3.7	1	0
Subgroup: with any days of use at admission					
Overall	52,889	15.4	7.3	14	1
By primary substance					
Alcohol	13,104	17.0	8.9	18	2
Heroin/opiates	10,089	22.5	12.0	30	8
Cocaine/crack	5,542	14.5	7.3	12	1
Marijuana	6,801	12.1	4.2	7	0
Methamphetamine/amphetamines	16,822	11.7	4.7	6	0
Other drugs	531	15.3	6.1	14	0

[1]For the specified subgroup, number of episodes with non-missing no. days primary drug use at both admission and discharge

Table 2: Number and Percentage of Episodes with Clients Reporting Any Use of Primary Substance at Admission and at Discharge, by Demographic, Substance Use, Treatment, and Health Characteristics

		Any use of primary substance past 30 days	
	n[1]	Admission	Discharge
Overall	81,382	52,889(65.0%)	29,392(36.1%)
Demographics			
Gender			
Male	52,560	34,658(65.9%)	19,807(37.7%)
Female	28,781	18,208(63.3%)	9,576(33.3%)
Age (years)			
12-17	5,995	3,518(58.7%)	1,618(27.0%)
18-24	12,664	7,625(60.2%)	3,817(30.1%)
25-34	20,603	12,799(62.1%)	6,858(33.3%)
35-44	22,065	14,581(66.1%)	8,300(37.6%)
45-54	15,741	11,176(71.0%)	6,792(43.2%)
55 and older	4,293	3,176(74.0%)	2,001(46.6%)
Race/Ethnicity[2]			
White	37,962	25,503(67.2%)	14,305(37.7%)
Hispanic/Latino	26,117	15,948(61.1%)	8,589(32.9%)
Black	11,116	7,710(69.4%)	4,443(40.0%)
American Indian/Alaskan Native	1,289	814(63.2%)	497(38.6%)
Asian/Pacific Islander	2,168	1,231(56.8%)	661(30.5%)
Other	2,729	1,682(61.6%)	897(32.9%)
Education			
Less than high school	31,476	19,416(61.7%)	10,513(33.4%)
High school	33,510	22,145(66.1%)	12,358(36.9%)
Some college/post-high school training	16,396	11,328(69.1%)	6,521(39.8%)
Homeless			
No	63,774	39,736(62.3%)	21,451(33.6%)
Yes	16,425	12,413(75.6%)	7,651(46.6%)
Parental status/children[3]			
No children<18 yr	39,372	27,656(70.2%)	16,836(42.8%)
Any children<18 yr	31,758	19,287(60.7%)	10,257(32.3%)
Any children<5 yr	16,497	9,611(58.3%)	4,959(30.1%)
Minor child(ren) living elsewhere	7,645	4,152(54.3%)	1,987(26.0%)
Lost parental rights for any child(ren) living elsewhere	2,513	1,473(58.6%)	746(29.7%)
Substance Use			
Primary substance			
Alcohol	17,681	13,104(74.1%)	7,614(43.5%)

Heroin/opiates	12,284	10,089(82.1%)	6,905(56.2%)
Cocaine/crack	8,839	5,542(62.7%)	3,153(35.7%)
Marijuana	11,189	6,801(60.8%)	2,937(26.3%)
Methamphetamine/amphetamines	30,440	16,822(55.3%)	8,434(27.7%)
Other drugs	949	531(56.0%)	269(28.4%)
Severity of primary substance use (days in past 30 days)			
0 days	28,493	0(0%)	2,680(9.4%)
1-10	24,707	24,707(100%)	10,343(42.9%)
11-20	7,429	7,429(100%)	3,344(45.0%)
21-30	20,753	20,753(100%)	13,025(62.8%)
Injection Use			
Past 30 days (see Technical Note 7)			
No	72,016	43,765(60.8%)	23,557(32.7%)
Yes	8,502	8,502(100%)	5,624(64.5%)
Past year			
No	66,192	40,734(61.5%)	21,652(32.7%)
Yes	15,167	12,132(80.0%)	7,725(50.9%)
Injection usual route of primary substance			
No	69,079	43,605(63.1%)	23,244(33.7%)
Yes	12,302	9,284(75.5%)	6,148(50.0%)
Any secondary substance use[4]			
No	20,231	5,371(26.6%)	3,158(15.6%)
Yes	27,835	24,970(89.7%)	13,129(47.2%)
Treatment-related characteristics			
Referral			
Self	25,940	21,560(83.1%)	13,325(51.4%)
SACPA	20,713	11,279(54.5%)	5,470(26.4%)
Other CJS/CPS/court referral	18,874	9,012(47.8%)	4,363(23.1%)
Other	15,853	11,036(69.6%)	6,234(39.3%)
Any prior treatment episodes			
No	40,992	26,829(65.5%)	14,105(34.4%)
Yes	39,980	25,847(64.7%)	15,183(38.0%)
Type of treatment (1st tx in episode)			
Outpatient	44,003	23,179(52.7%)	11,539(26.2%)
Residential <=30 days	1,864	1,472(70.0%)	813(43.6%)
Residential >30 days	16,432	10,057(61.2%)	2,556(15.6%)
Detoxification	12,789	12,471(97.5%)	10,600(82.9%)
NTP Maintenance	3,186	2,680(84.1%)	1,606(50.4%)
NTP Detoxification	3,098	3,028(97.7%)	2,276(73.5%)
Treatment category for entire episode[5]			
Outpatient only[6]	43,671	21,454 (51.9%)	10,637 (25.7%)
Residential <=30 days only	1,608	1,277 (79.7%)	774 (48.3%)
Residential >30 days only	14,766	8,545 (61.3%)	2,168 (15.6%)
Detoxification (non-NTP) only	11,168	10,642 (97.7%)	9,821 (90.2%)
NTP detox only	2,702	5,127 (45.9%)	4,192 (37.5%)

NTP maintenance only	2,994	2,460 (83.7%)	1,477 (50.3%)
Combinations of services within episodes	8,401	5,913 (74.1%)	2,498 (31.3%)
Number of service sets in episode (Technical Note 6)			
1	67,706	43,026 (63.6%)	24,674 (36.4%)
2	10,252	7,279 (71.0%)	3,502 (34.2%)
>2	3,424	2,584 (75.5%)	1,216 (35.5%)
Discharge status			
Completed	54,527	34,765(63.8%)	16,792(30.8%)
Did not complete	26,180	17,658(67.5%)	12,389(47.3%)
Retention			
<90 days	37,932	29,007(76.5%)	20,927(55.2%)
>=90 days	43,445	23,880(55.0%)	8,464(19.5%)
<60 days	30,969	24,926(80.5%)	19,078(61.6%)
>=60days	50,408	27,961(55.5%)	10,313(20.5%)
Other personal/health characteristics			
Any legal/criminal justice status at admission			
No	35,299	27,715(78.5%)	16,789(47.6%)
Yes	46,060	25,151(54.6%)	10,747(27.3%)
Social support activities (past 30 days)			
No	49,620	35,176(70.9%)	20,807(41.9%)
Yes	28,293	15,700(55.5%)	8,819(28.9%)
Family conflict (past 30 days)			
No	61,884	39,509(63.8%)	23,045(37.2%)
Yes	8,871	7,257(81.8%)	3,930(44.3%)
Medical problems (past 30 days)			
No	58,315	37,719(64.7%)	21,539(36.9%)
Yes	12,833	9,241(72.0%)	5,571(43.4%)
Emergency room visits (past 30 days)			
No	64,334	41,505(64.5%)	23,576(36.7%)
Yes	6,818	5,459(80.1%)	3,536(51.9%)
Hospital stays (past 30 days)			
No	68,676	45,019(65.6%)	25,946(37.8%)
Yes	2,473	1,942(78.5%)	1,164(47.1%)
Hepatitis C			
No	65,256	42,784(65.6%)	22,226(37.4%)
Yes	4,619	3,183(68.9%)	2,004(43.4%)
Sexually transmitted disease			
No	67,332	44,510(66.1%)	25,774(38.3%)
Yes	2,336	1,369(58.6%)	627(26.8%)

Tuberculosis			
No	68,564	45,136(65.8%)	25,947(37.8%)
Yes	1,484	916(61.7%)	502(33.8%)

[1] For the specified subgroup, number of episodes with non-missing no. days primary substance use at both admission and discharge. The sums across subgroups within specific characteristics may not equal the total overall n because of missing data for subgroup classification.
[2] CalOMS collects eight racial/ethnic categories, however for the purposes of this report, categories were combined into six standard categories.
[3] Not mutually exclusive subgroups; clients may be included in more than one subgroup. Rows include only clients with the specified characteristics (those without the characteristic not shown).
[4] For clients who reported a secondary substance.
[5] The "…only" categories include all episodes with only the designated type of service (may include one or more service sets, but all of only the designated type). The "Combinations" category contains all episodes with 2 or more different types of service (e.g. residential>30 days followed by outpatient). See Chapter 4 for more detail on patterns of services within episodes.
[6] For this analysis, Outpatient includes both outpatient/recovery and intensive day treatment.

Table 3: Percentage of Episodes with Clients Reporting Any Criminal Justice System Involvement, Employment, Homelessness, and Family Conflict at During 30 Days Prior to Admission and Discharge, by Demographic, Substance Use, Treatment, and Other Personal/Health Characteristics

	CJS Involvement (n=81,487)[1]		Employed (n=85,224)		Employed or Enrolled in Sch/Training (n=85,224)		Homeless (n=83,932)		Family Conflict (n=58,724)	
	Adm	Disch	Adm	Disch	Adm	Disch	Adm	Disch	Adm	Disch
Overall	20.8	6.1	25.1	33.5	35.4	45.0	20.0	16.5	11.8	6.4
Demographics										
Gender										
Male	21.9	6.3	29.3	37.8	39.4	48.2	20.8	17.0	9.0	4.8
Female	18.8	5.9	17.4	25.6	28.2	39.0	18.7	15.5	16.7	9.2
Age (years)										
12-17	9.1	3.9	6.5	9.5	85.7	89.4	0.6	0.6	--	--
18-24	23.2	6.9	27.4	37.1	40.7	51.0	12.4	10.3	13.0	7.6
25-34	23.8	6.7	28.8	39.0	32.6	44.2	18.4	14.7	13.2	6.8
35-44	22.8	6.5	27.1	36.4	29.8	40.5	24.6	20.3	11.8	6.4
45-54	18.6	5.7	25.0	32.0	27.5	35.6	28.2	23.7	9.6	5.3
55 and older	13.2	3.8	17.0	20.6	18.9	23.2	21.4	16.6	8.7	4.2
Race/Ethnicity[2]										
White	21.2	6.2	26.7	35.5	34.0	43.5	21.4	16.6	12.8	6.9
Hispanic/Latino	20.0	5.9	27.1	35.6	42.0	51.6	13.4	11.4	10.8	5.8
Black	20.7	6.5	14.3	21.4	23.7	32.9	32.7	29.7	11.0	6.1
American Indian/Alaskan Native	24.8	7.3	19.9	26.5	28.1	36.7	21.4	18.3	12.7	7.1
Asian/Pacific Islander	21.4	6.2	28.1	38.4	40.3	51.4	12.1	11.1	9.4	5.7
Other	20.6	5.7	25.1	33.4	38.7	49.0	18.5	14.7	13.0	7.2
Education										
Less than high school	21.3	6.4	19.7	27.3	40.0	48.7	16.9	14.4	10.9	6.4
High school (HS)	21.4	6.1	28.2	37.3	32.2	42.6	21.0	16.7	11.4	6.1
Some college/post-HS training	18.7	5.6	29.2	37.5	33.3	42.5	24.1	19.7	14.8	5.7
Homeless										
No	19.8	5.8	29.6	37.4	42.0	50.5	0	2.5	11.2	6.6
Yes	24.7	7.4	6.8	16.5	9.7	22.0	100	72.5	14.8	5.7
Parental status/children[3]										
No children<18 yr	20.0	6.1	26.6	33.9	30.6	38.5	25.2	20.9	9.3	5.2
Any children<18 yr	24.2	6.7	26.6	35.6	30.5	41.4	19.1	15.5	14.6	7.8
Any children<5 yr	23.4	6.5	25.4	34.9	29.7	41.3	17.4	14.2	15.6	8.3
Minor child(ren) living elsewhere	23.9	6.2	18.9	30.8	23.3	38.1	22.9	18.3	16.5	8.4
Lost parental rights for	30.7	8.5	15.5	26.3	20.5	34.3	27.7	17.4	15.8	9.6

any minor child(ren) living elsewhere										
Substance Use										
Primary substance										
Alcohol	16.8	5.9	25.0	40.7	35.1	41.2	26.8	21.3	14.6	7.1
Heroin/opiates	13.0	4.6	28.2	32.0	31.1	35.3	18.5	15.8	10.2	7.0
Cocaine/crack	27.0	7.4	19.9	28.4	24.4	34.7	33.8	31.2	12.3	6.2
Marijuana	17.4	5.3	24.2	31.1	59.3	66.8	7.0	5.7	9.2	6.3
Methamph/amphetamines	20.6	6.8	25.6	37.9	31.4	45.5	17.9	14.0	11.6	6.1
Other drugs	15.8	3.7	28.4	35.8	44.5	51.4	10.4	7.6	13.9	5.8
Days of primary substance use in past 30 days										
0 days	26.0	5.8	27.3	41.0	39.7	55.1	13.8	10.8	6.6	4.7
1-10	21.7	6.7	27.9	34.9	39.9	47.9	16.6	14.3	13.0	6.5
11-20	19.4	6.4	20.1	26.7	31.1	38.8	27.1	22.2	20.5	8.8
21-30	12.9	5.8	20.2	23.4	25.4	29.1	30.5	25.3	18.6	9.3
Injection use										
Past 30 days (see Technical Note 7)										
No	21.5	6.1	25.3	34.2	36.6	46.7	19.2	15.8	11.5	6.3
Yes	14.9	5.8	23.4	27.1	25.7	29.7	27.7	22.7	15.3	7.6
Past year										
No	20.9	6.0	25.6	34.4	37.5	47.3	18.7	15.4	11.7	6.3
Yes	20.3	6.6	22.6	29.5	26.3	34.3	26.1	21.3	12.8	6.9
Injection usual route of primary drug										
No	21.0	6.2	25.2	33.8	36.9	46.6	19.4	16.0	2.0	6.5
Yes	19.4	6.0	24.3	31.3	27.3	35.5	23.5	19.0	10.7	6.8
Any secondary drug[4]										
No	26.5	5.8	25.4	39.3	38.3	54.0	16.4	12.6	8.6	5.4
Yes	20.2	7.0	22.1	28.7	31.7	39.2	25.1	21.0	17.3	8.2
Treatment-related characteristics										
Referral										
Self	11.3	4.9	21.4	25.5	28.5	33.2	27.7	22.2	18.1	8.7
SACPA	31.5	7.8	35.9	47.0	40.4	52.6	11.2	9.1	8.0	5.1
Other CJS/CPS/court referral	29.5	8.2	26.2	39.3	42.4	57.2	13.1	9.9	9.0	5.4
Other	11.6	3.4	15.4	21.5	31.8	39.2	27.6	24.9	14.7	7.3
Any prior treatment episodes										
No	20.0	6.0	26.5	33.7	41.3	49.2	15.8	13.3	11.3	6.2
Yes	21.7	6.3	23.5	33.2	29.3	40.5	24.5	19.8	12.4	6.6
Type of initial treatment										
Outpatient	20.0	6.3	32.7	41.8	38.4	58.1	5.9	5.8	10.0	7.2

Residential <=30 days	24.2	7.8	12.6	14.3	13.9	34.3	35.8	31.5	17.4	8.7
Residential >30 days	35.3	5.8	8.8	24.9	23.8	25.8	40.0	30.0	15.2	4.3
Detoxification	11.5	7.3	15.2	15.6	17.2	17.5	45.8	37.3	20.6	6.8
NTP Maintenance	4.2	1.9	44.2	43.8	46.8	46.4	13.9	12.1	8.2	7.6
NTP Detoxification	3.9	3.0	31.1	32.6	33.6	34.4	4.1	4.6	7.2	8.0
Treatment category for entire episode										
Outpatient only	19.4	6.2	33.1	42.9	49.5	59.6	5.6	5.2	9.8	7.2
Residential <=30days only	22.8	8.3	13.1	12.9	25.4	25.1	35.0	31.5	17.3	9.4
Residential >30days only	34.6	6.1	8.3	22.7	13.6	32.4	40.5	32.3	15.1	4.1
Detoxification (non-NTP) only	10.9	7.8	15.4	14.5	17.4	15.8	45.9	37.5	37.8	13.5
NTP detox only	3.6	1.6	31.5	33.2	34.1	34.8	13.1	11.2	5.3	6.4
NTP maintenance only	3.1	2.8	45.4	45.6	47.9	48.1	3.4	3.4	6.9	7.9
Combinations of continuing services	27.2	5.5	18.7	28.6	22.9	35.6	28.3	21.5	15.9	6.3
Number of service sets in episode (Technical Note 6)										
1	20.0	6.2	25.7	34.0	37.0	46.1	19.1	15.9	11.3	6.4
2	25.2	6.0	22.6	32.4	28.8	40.9	23.3	18.1	13.9	6.4
>2	23.2	5.8	19.4	26.8	24.0	33.6	28.0	23.5	15.8	7.3
Discharge status										
Completed	20.2	4.6	25.7	37.2	36.6	39.0	21.5	16.5	11.4	4.7
Did not complete	22.1	9.4	23.6	25.1	34.9	47.6	17.2	16.8	12.8	9.8
Retention										
<90 days	19.8	8.6	20.6	21.5	29.8	31.2	27.4	23.9	14.1	8.1
>=90 days	21.7	3.9	28.8	43.6	40.2	56.6	13.7	10.0	10.5	5.5
<60 days	18.8	9.3	20.3	19.9	28.1	28.0	29.2	25.6	14.5	8.8
>=60 days	22.0	4.1	27.9	41.5	39.8	55.0	14.5	11.0	10.9	5.6
Other personal/health characteristics										
Any legal/CJS status at admission										
No	7.3	3.3	20.9	25.3	31.5	36.9	25.7	21.8	16.8	8.7
Yes	30.9	8.3	28.2	39.6	38.4	51.0	15.8	12.5	9.3	5.3
Social support activities (past 30 days)										
No	19.6	6.0	24.0	30.0	36.9	43.4	20.5	17.3	10.9	6.1
Yes	22.9	6.4	26.6	37.0	33.6	45.3	20.8	16.4	13.1	6.9
Family conflict (past 30 days)										
No	22.1	6.2	27.2	35.5	31.1	40.6	22.1	18.2	0	3.2

Yes	20.5	6.9	21.8	28.2	26.4	33.8	25.4	20.7	100	30.9
Medical problems (past 30 days)										
No	21.9	6.1	28.3	36.9	32.3	42.0	21.2	17.3	10.1	5.6
Yes	21.8	7.3	18.7	24.1	22.6	29.5	28.4	24.1	20.9	10.8
Emergency room visits (past 30 days)										
No	22.1	6.2	27.6	36.2	31.7	41.3	21.2	17.4	10.9	6.1
Yes	19.7	7.9	16.5	20.0	19.9	25.1	34.8	29.4	23.1	11.1
Hospital stays (past 30 days)										
No	22.0	6.3	27.1	35.3	31.1	40.4	21.9	18.0	11.5	6.3
Yes	17.2	6.5	12.5	17.1	15.8	22.3	38.9	33.3	22.0	9.8
Hepatitis C										
No	22.0	6.3	27.0	35.2	31.0	40.3	22.0	18.1	11.9	6.5
Yes	22.0	6.0	17.9	25.8	22.0	31.5	29.8	23.9	11.0	5.8
Sexually transmitted disease										
No	21.9	6.3	26.7	34.6	30.6	39.7	22.4	18.4	11.7	6.4
Yes	25.2	6.0	20.4	30.4	25.2	36.8	24.5	19.9	17.6	7.3
Tuberculosis										
No	21.9	6.4	26.5	34.6	30.5	29.7	22.4	18.4	11.9	6.5
Yes	26.7	7.4	23.3	33.8	28.8	40.7	24.1	20.6	9.8	5.4

[1] Number of episodes with non-missing data at both admission and discharge for the specific outcome measure. The number of episodes contributing to analysis by a specific characteristics (e.g. race/ethnicity) may be somewhat smaller than the total n for the outcome measure due to missing data on the characteristic (see Table 5.3 for relative completeness by characteristic).

[2] CalOMS collects eight racial categories, however for the purposes of this report, race categories were combined into six standard categories.

[3]Not mutually exclusive subgroups; clients may be included in more than one subgroup. Rows include only clients with the specified characteristics (those without the characteristic not shown).

[4] For clients who reported a secondary drug.

[5] The "…only" categories include all episodes with only the designated type of service (may include one or more service sets, but all of only the designated type). The "Combinations" category contains all episodes with 2 or more different types of service (e.g. residential>30 days followed by outpatient). See Chapter 4 for more detail on patterns of services within episodes.

[6] For this analysis, Outpatient includes both outpatient/recovery and intensive day treatment.

Table 4: Percentage of Episodes with Priority and Special Needs Clients Reporting Any Use of Primary Substance at Admission and at Discharge

		Any use of primary drug past 30 days	
	n[1]	Admission	Discharge
Overall	81,382	52,889(65.0%)	29,392(36.1%)
Women	28,781	18,208 (63.3%)	9,576(33.3%)
Pregnant women	1,796	845(47.1%)	395(22.0%)
Women with minor children	15,023	8996(59.9%)	4,597(30.6%)
Women of child-bearing age	22,816	14,041(61.5%)	7,185(31.5%)
Age groups			
Youth 12-17 years	5,995	3,518(58.7%)	1,618(27.0%)
Young adults (18-25 years)	12,664	7,625(60.2%)	3,817(30.1%)
Older adults (55 years and older)	4,293	3,176(74.0%)	2,001(46.6%)
Mental illness (lifetime)	15,323	10,309(67.3%)	6,008(39.2%)
Legal/criminal justice status at admission	46,060	25,151(54.6%)	12,586(27.3%)
Injection drug users[2]	13,674	10,545(77.1%)	6,947(50.8%)
Homeless	16,425	12,413(75.6%)	7,651(46.6%)
Veterans	3,512	2,316(66.0%)	1,470(41.9%)
Disabled	12,485	8,207(65.7%)	4,523(36.2%)
Medi-Cal recipients	18.666	11,631(62.3%)	6,271(33.6%)

[1] For the specified subgroup, number of episodes with non-missing no. days primary substance use at both admission and discharge. The sums across subgroups within specific characteristics may not equal the total overall n because of missing data for subgroup classification.

[2] "Injection drug users" are those reporting any injection drug use in past 30 days and/or injection as the primary route of administration (same definition as used to define priority groups in Chapter 2). See also Technical Note 8.

Table 5: Percentage of Episodes for Priority and Special Needs Clients Reporting Any Criminal Justice System (CJS) Involvement, Employment, Homelessness, and Family Conflict at During 30 Days Prior to Admission and Discharge

	CJS Involvement (n=81,487)[1]		Employed (n=85,224)		Employed or Enrolled in Sch/ Training (n=85,224)		Homeless (n=83,932)		Family Conflict (n=58,724)	
	Adm	Disch	Adm	Disch	Adm	Disch	Adm	Disch	Adm	Disch
Overall	20.8	6.1	25.1	33.5	35.4	45.0	20.0	16.5	11.8	6.4
Women	18.8	5.9	17.4	25.6	28.2	39.0	18.7	15.5	16.7	9.2
Pregnant women	24.9	6.9	10.8	14.7	21.0	31.0	21.0	16.0	15.9	10.6
Women with minor children	21.4	6.5	16.0	24.6	21.5	33.2	20.6	17.1	18.6	10.2
Women of child-bearing age	19.8	6.1	17.4	26.3	29.1	40.6	18.2	14.9	17.2	9.6
Age groups										
Youth 12-17 years	9.1	3.9	6.5	9.5	85.7	89.4	0.6	0.5	--[2]	--[2]
Young adults (18-25 years)	23.2	6.9	27.4	37.1	40.7	51.0	12.4	10.3	13.0	7.6
Older adults (55 years and older)	13.2	3.8	17.0	20.6	18.9	23.2	28.2	23.7	8.7	4.2
Mental illness (lifetime)	19.4	6.2	13.6	19.4	21.2	28.4	28.7	23.8	18.7	9.6
Legal/CJS status at admission	30.9	8.3	28.2	39.6	38.4	51.0	15.8	12.5	9.3	5.3
Injection Drug Users[3]	19.8	6.2	23.4	30.3	26.4	34.4	25.2	20.3	11.8	6.6
Homeless	24.7	7.4	6.8	16.5	9.7	22.0	100	72.5	14.8	5.7
Veterans	19.8	5.3	22.3	31.4	25.1	35.8	38.2	29.3	10.6	4.9
Disabled	19.7	5.8	12.0	17.7	17.4	25.1	26.4	22.9	14.5	7.6
Medi-Cal	15.2	5.1	11.8	18.2	32.7	40.1	15.8	14.6	15.0	8.9

[1]Number of episodes with non-missing data at both admission and discharge for the specific outcome measure from the total episodes outcomes analysis data set. The numbers of episodes for each priority/special needs subgroup appear in Table 5-5 for drug use outcome; numbers of cases in analyses for specific outcomes in Table 5-5 may be differ somewhat due to missing data on the specific outcome.
[2] No data available (only abbreviated CalOMS collected for adolescents).
[3] "Injection drug users" are those reporting any injection drug use in past 30 days and/or injection as the primary route of administration (same definition as used to define priority groups in Chapter 2). See also Technical Note 8.

Technical Notes

1. CalOMS data system process of identifying episodes (source: communication from ADP staff)
CalOMS distinguishes between *service set* and *treatment episode*. A *service set* is a set of matching records that pertain to one type of service provided to the client: admission – discharge, admission – annual update, or admission - annual update - discharge. Each type of service that is provided to the client in CalOMS should have an admission and matching discharge record; some will also have a matching annual update. CalOMS considers a service set "complete" if an admission is matched with either an annual update or a discharge. A *treatment episode* is a collection of temporally contiguous or overlapping service sets for the same client. Service sets are included in the same treatment episode only if the break between each discharge and subsequent admission is 30 days or less. If the break between the discharge in one service set and admission in the next service set for the same client is more than 30 days, these service sets will not be included in the same episode.

The data system process of creating an episode identifier within CalOMS is the following:
Each time an admission is submitted and accepted into CalOMS, it is assigned a unique service set ID number. When a matching annual update or discharge is submitted and accepted, a whole set of processes is set in motion:

(a) The matching discharge or annual update is assigned the same service set ID number that was assigned to the admission.

(b) Once admission is matched with an annual update or with a discharge, a new complete service set is formed.

(c) At this point, this new complete service set is going to be assigned an Episode ID. In order to assign the Episode ID, the file processor will scan all existing service sets for the same client ID (client ID is part of each admission, discharge or annual update record). If it finds any other existing completed service sets for the same client ID, it will evaluate if there is more than 30 days break between the admission of the new service set and the discharge of the existing service set. If the break is 30 days or less, the new service set is assigned the same Episode ID as the existing service set. If the break is more than 30 days, the new service set is assigned a new Episode ID. If no existing service sets with the same client ID are found, then the new service set is assigned a new Episode ID.

2. Process for selecting episodes for outcomes analysis. For performance and outcomes analyses, we used the CalOMS-designated episode indicator and selected episodes with latest discharge or annual update in fiscal year 2006-07. The earliest admission record in an episode (in the CalOMS data set) was considered the beginning of the episode. If a client had more than one episode ending in fy06-07, the episode with the earliest episode-ending discharge in fy06-07 was selected for analyses, such that episodes also represent unique clients. Note that some discharges in fy06-07 did not have matching admission records within the CalOMS data set and were not included for analysis of performance or outcomes measures. A few episodes were omitted from analyses because they contained admission and/or discharge records for more than one client ID. The resulting episode sample contained 154,414 episodes for possible analysis.

This set (n=154,414) formed the basis for performance analyses; the sample size varied somewhat across different measures depending on the number of missing cases for specific variables. For outcomes analyses, episodes ending with "administrative discharges" (for which outcome data were not required to be collected) were omitted, resulting in n=85,310 episodes eligible for inclusion in outcomes analyses (see also Note 3 below). However, the sample size varied somewhat across different outcome measures depending on the specific measure since there non-missing data were required at both the beginning and ending records of the episode for analysis. For example n=81,382 episodes had non-administrative discharge status and number of days of use of primary drug at both beginning and end of the episode; these form the basis for analyzing drug use outcomes (Tables 1-2). The analysis sample size for the more detailed

analysis of drug use outcomes by other client and treatment characteristics may differ somewhat because of missing data on the specific classification characteristic.

The first admission record in the episode was considered as the episode "admission" (for client characteristics and drug use at the beginning of the episode) and the last discharge (or annual update) in the episode as the episode "discharge" (for outcome measures at the end of episodes). If a client had two admission records for the same date at the beginning of the episode, then analysis programming selected the first listed in the file (sorted by the SAS program by episode identifier and admission date) of all admissions in all episodes. If a client had two discharge records for the same date at the end of an episode (approximate total of 900 records affected), a similar process was used for selecting a discharge record from among those with a valid discharge status.

As noted in Chapter 4, because sequences of services can count as part of an episode if the subsequent admission is within 30 days of the previous discharge, episodes with the last available discharge during the last month of fiscal year 06-07 may not yet have been fully completed within the period included in analyses. That is, clients represented by these episodes could still have participated in additional treatment within the episode but outside the time frame of the current analysis. Thus, outcome measures might be underestimated for this subset of episodes; however, the proportion of episodes potentially affected is estimated to be very small (i.e., less than 1%, roughly estimated from the 11.5% with multiple services of the 7.9% of the episodes ending in the last month of fiscal year 06-07). See Chapter 4 for more detail on multiple services within episodes.

3. Outcome data are not collected in the CalOMS database for "administrative discharges," that is, discharge records with discharge status of "left before completion with satisfactory progress/not referred," "left before completion with unsatisfactory progress/not referred," death, or incarceration. Thus, analysis of outcomes cannot include client episodes with such discharge codes. In order to provide some context for interpretation of outcomes (that come from only a subset of episodes), we compared admission characteristics (first admission record in the episode) between episodes ending with an administrative discharge and those with other types of discharge status.

Logistic regression was used with type of discharge (administrative vs. non-administrative) as the dependent variable; selected admission characteristics (from the beginning of the episode) were included as predictors. Basic demographics were included: gender, race/ethnicity, education, and age group. In addition, type of primary drug, frequency of primary drug use in 30 days prior to admission, IDU, type of referral to treatment, and type of treatment. A few episodes were omitted from the analysis because of missing data on any included variables (n=1,757). Thus, analysis included n=68,583 episodes with administrative discharges and n=84,074 with other types of discharges. All predictors were significant; this was not surprising, with such a large sample size. Overall prediction was relatively low, with a rescaled pseudo r-squared of .09.

Table A: Comparison of Episodes with Administrative vs. Non-Administrative Discharges: Logistic Regression Results

Predictor	**% with admin discharge**	**Odds Ratio**	**95% Confidence Interval**
Gender (compared to male*)			
Male	44.5	--	--
Female*	45.1	0.95	0.92-0.97
Race/ethnicity (compared to white/non-Hispanic)			
White/non-Hispanic	40.9	--	--
Hispanic/Latino	48.2	1.17	1.14-1.20
Black	49.0	1.43	1.38-1.48

Amer. Indian/Alaska Native	44.5	1.17	1.07-1.27
Asian/Pacific Islander	40.1	0.95	0.88-1.02
Other	45.8	1.15	1.08-1.21
Age group (compared to 55 and older)			
12-17	54.6	1.37	1.28-1.46
18-24	46.8	1.35	1.27-1.43
25-34	44.4	1.25	1.19-1.32
35-44	42.7	1.19	1.13-1.26
45-54	42.3	1.12	1.06-1.18
55 and older	41.7	--	--
Education years		0.88	0.86-0.91
Primary drug (compared to "meth/amphet")			
Heroin/opiates	52.3	1.18	1.13-1.25
Alcohol	38.4	0.88	0.81-0.98
Cocaine/crack	43.1	1.02	0.98-1.06
Marijuana	49.9	0.93	0.90-0.96
Other	45.7	0.99	0.90-1.09
Methamphetamine/amphetamine	42.8	--	--
Frequency (compared to no use in past 30 days)			
No use	42.6	--	--
1-10 days	47.3	1.24	1.21-2.17
11-20 days	44.7	1.30	1.25-1.36
21-30 days	44.5	1.35	1.30-1.39
Referral (compared to self)			
Self	46.4	--	--
SACPA	42.9	0.66	0.64-0.68
Other CJS/CPS/court	41.2	0.67	0.65-0.69
Other	48.2	0.96	0.93-1.00
Type of treatment (compared to outpatient/recovery)			
Outpatient/recovery	50.9	--	--
Intensive day outpatient	49.2	0.87	0.83-0.91
Residential<=30 days	24.2	0.26	0.24-0.29
Residential>30 days	35.1	0.49	0.47-0.50
Detoxification	23.8	0.23	0.22-0.24
NTP detox	54.4	0.64	0.60-0.69
NTP maintenance	62.3	1.03	0.97-1.10
IDU--past 30 days, past year, or usual route (compared to no IDU)			
No IDU	43.4	--	--
IDU	49.7	1.21	1.17-1.25
*odds ratios given are relative the stated comparison category			

Odds ratios less than 1.0 indicate that the specified subgroup was less likely to have an administrative discharge than the comparison group, controlling for other characteristics in the model. For example, results show that females were less likely than males to have administrative discharges (OR=.95), controlling for all other characteristics in the model; thus our outcome analyses may slightly under represent males. Blacks, Hispanics, Native American/Alaskan Native, and "other" race/ethnic groups were more likely than non-Hispanic whites to have administrative discharges, Blacks particularly so. Asian/Pacific Islanders were slightly less likely than non-Hispanic whites to have administrative discharges. Age is inversely related to likelihood of administrative discharge with 12-17 year olds most likely to have an administrative discharge

(compared to the 55 and older group), followed in descending order by the other age groups. Higher likelihood of administrative discharge is also seen for those with more frequent recent drug use, IDU, self-referrals to treatment, and those admitted to outpatient treatment.

Primary heroin users are more likely than methamphetamine/amphetamine users to have administrative discharges, while primary marijuana and alcohol users are less likely to have administrative discharges after controlling for age (note that marijuana use is most prevalent in the youngest age group). Cocaine and other drug users are very similar to meth/amphetamine users in their likelihood of having an administrative discharge

Thus, results of outcomes analysis should be interpreted within a context of some possible bias because of some underrepresentation in the outcomes data set (i.e. non-administrative discharges) of most minority groups, younger age groups, those with more frequent use of primary drug in the 30 days prior to treatment, IV users, self-referrals, and outpatient treatment clients. Heroin users are also substantially underrepresented.

4. Statistical considerations. The extremely large sample provides particularly high power for detecting differences from admission to discharge or differential change across client subgroups—thus, even very small effects may be statistically significant. For example, a difference between admission and discharge of less than 1% would be statistically significant (with alpha=.05 and power=.80) based on the episode sample of n=81,382 for substance use outcome analysis; a difference of 1-2% (depending on the magnitude of the percentage at admission) would be significant for a subgroup of n=10,000 episodes; and a difference of 3-4% would be significant for a subgroup with n=2,000. Therefore, in the text and for presentation of outcomes, we rely primarily on description of differences of sufficient magnitude to have potential clinical or practical importance. Simple chi square tests of admission to discharge change in percentages showed that improvement was significant at $p<.0001$ for all outcome measures for the complete set of outcome episodes. Additionally, chi square tests were run on the major outcome measure of primary substance abuse for admission to discharge change within each subgroup by category of demographic, personal/health, substance use, and treatment characteristic category; these were also significant at very small alpha levels.

As exploration, we also applied generalized linear models for repeated measures, with generalized estimating equations [GEE] for binary outcomes (e.g. Fitzmaurice et al., 2004; Preiser & Koch, 1997). This approach summarizes individual change and also allows assessment of differential change (time-by-characteristic interaction). One set of exploratory analyses examined change from admission to discharge on the full analysis sample for each outcome measure. Results showed significant change from admission to discharge for all outcomes (as was shown by chi square tests described above). A second set of analyses focused on the substance use outcome (any use of primary substance vs. no use), testing whether the differential change across subgroups determined by categories of the demographic, substance use, treatment, and other/health characteristics described in the chapter narrative (a separate model for each characteristic). Results showed that for all except one characteristic, differential change was statistically significant at less than p=.01; a non-significant interaction effect (p=.07) was found for tuberculosis for which the difference between amounts of change for the two groups was 0.1%.

5. For description of change in outcomes, we used as the main summary the percentages with the specific outcome at admission and at discharge (e.g. percentage with *any use* of primary drug at admission and at discharge). In these descriptions, the outcome for the individual client episode is measured in yes/no terms (or e.g., "has the problem" vs. "doesn't have the problem"). And outcomes are reported in aggregate form reflecting the percentages of client episodes in the sample or subgroup with the specific outcome.

To compare change across subgroups, we have also presented the simple *difference* between admission and discharge percentages (that is, discharge percentage subtracted from the

admission percentage). For example, if a subgroup had 75% reporting past 30-day primary substance use at admission and that figure decreased to 50% at discharge, the difference would be 25% (75% minus 50%). Note that the magnitude of this difference may be dependent on the magnitude of the admission percentage; for example, if a subgroup had only a small percentage with (past 30-day) primary substance use at admission, then any decrease is limited; whereas with a high percentage at admission, there is "more room to decrease." These simple differences are detailed in Appendix Tables i-iv and where subgroup differences are substantial or of particular interest, they are presented in the chapter narrative.

An alternative perspective for reporting change is based on a *proportional change* approach, in which the difference from admission to discharge is divided by the admission rate in order to present the change as a proportion of the initial rate. In terms of proportional change, a decrease from 75% to 50% would be a 33% proportional change (the 25% difference divided by the 75% admission rate—and can be multiplied 100 to put into percentage units. And a decrease from 9% to 6% (a very small difference of 3%) would also produce a proportional change of 33%. This approach can be useful in comparing degree (rather than actual amount) of change. In particular, if one subtracts the proportional change (in percent) from 100%, one can describe the discharge rate as a fraction of the admission rate; e.g., with a proportional 33% decrease, we see a discharge rate of 67% that of the admission rate (or about 2/3).

While we have chosen to present primarily the simple differences in the chapter narrative in order to capture the actual amount of change, we also use the proportional change approach in a limited way to describe subgroups where the decrease is large enough that the discharge rate is half or less than half that at admission. In Appendix Tables i-iv, both the simple difference and the proportional change are presented. Positive values in these tables indicate *improvement* from admission to discharge*;* zero indicates no change; and a negative value indicates worsening. For substance use, criminal justice involvement, homelessness, and family conflict outcomes, improvement means that the discharge percentage is lower than the admission percentage; for employment and employment/education outcomes improvement means that the discharge percentage is greater than the admission percentage.

It is also important to remember that differences in percentages between admission and discharge (or proportional change) measure the change for the group as a whole and do not take into consideration individuals' specific change. For example, several different possible patterns of change are aggregated into the differences or proportional change: 1) a subgroup of clients who had the problem at admission but not at discharge (e.g. no longer using drugs, not having serious family conflicts); 2) a subgroup who had the problem at admission and discharge; 3) a subgroup who did not have the problem at admission but did at discharge; and 4) a subgroup who did not have the problem at either admission or discharge. As an example, we found that for any past 30-day use of primary drug, 32.2% of the episode sample showed improvement (pattern 1 above); 32.8% reported use at both admission and discharge (pattern 2); 3.3% reported no use at admission but use at discharge (pattern 3); and 31.7% reported no use at either admission or discharge (pattern 4). It was beyond the scope of this evaluation to do a comprehensive analysis of subgroups from this perspective; but in further studies, this perspective might allow more detailed examination of characteristics of these specific subgroups in order to identify barriers and facilitators of treatment outcomes.

Note also that analyses can focus on *problem frequency* (as opposed to *problem existence*), reflecting a harm reduction perspective. We provide limited results from this perspective, summarizing change in terms of average number of days (in past 30) with use of the primary drug. Further analysis could consider this in more detail for primary substance use and for other outcomes.

6. For analysis of episodes, type of treatment was defined as that for the first service set in the episode. Overall, 84.9% of the 154,414 episodes used in assessment of performance measures comprised only one treatment service (that is, only one admission-to-discharge matched pair of

records [or "service set"] for a single type of treatment). When we focus on the subset of episodes used in the outcomes analysis (i.e. with non-administrative discharges), we see a similar picture with 83.3% with only one treatment service. Chapter 4 includes additional description of service combinations/sequences within episodes.

7. For outcomes analyses, if the admission record indicated no IV drug use in past year, missing data on the past 30-day IV drug use variable was replaced by zero.

8. For analysis of outcomes for priority groups, we retained the same definition of injection drug users as used in Chapter 2. Other definitions are possible, based on the use of single indicators (injection use in past 30 days, injection use in past year, or injection as the usual route of administration), other combinations of 3 of these measures, or a combination of all three. A sensitivity analysis explored an alternative definition based on a "yes" answer to at least one of the three indicators. Outcome results were very similar to those reported in this chapter: e.g. the 3-indicator definition showed a decrease from 75.3% with any past 30-day use of primary drug at admission to 48.5% at discharge from episode of care.

Appendix Table i (Adjunct to Report Table 2): Change from Admission to Discharge in Percentage Using Primary Substance in Prior 30 Days

	Change (improvement) Admission to Discharge (in %)[1]	
	Simple Difference[2]	Proportional Change[3]
Overall	28.9	44.5
Demographics		
Gender		
Male	28.2	42.8
Female	30.0	47.4
Age (years)		
12-17	31.7	54.0
18-24	30.1	50.0
25-34	28.8	46.4
35-44	28.5	43.1
45-54	27.8	39.2
55 and older	27.4	37.0
Race/Ethnicity		
White	29.5	43.9
Hispanic/Latino	28.2	46.2
Black	29.4	42.4
American Indian/Alaskan Native	24.6	38.9
Asian/Pacific Islander	26.3	46.3
Other	28.7	46.6
Education		
Less than high school	28.3	45.9
High school	29.2	44.2
Some college/post-high school training	29.3	42.4
Homeless		
No	28.7	46.1
Yes	29.0	38.4
Parental status/children		
No children<18 yr	27.4	39.0
Any children<18 yr	28.4	46.8
Any children<5 yr	28.2	48.4
Minor child(ren) living elsewhere	28.3	52.1
Lost parental rights for any child(ren)	28.9	49.3
Substance Use		
Primary substance		
Alcohol	30.6	41.3
Heroin/opiates	25.9	31.5
Cocaine/crack	27.0	43.1

Marijuana	34.5	56.7
Methamphetamine/amphetamines	27.6	49.9
Other drugs	27.6	49.3
Severity of primary substance use (days in past 30 days)		
0 days	-9.4	--[4]
1-10	57.1	57.1
11-20	55.0	55.0
21-30	37.2	37.2
Injection Use		
Past 30 days (see Technical Note 7)		
No	28.1	46.2
Yes	35.5	35.5
Past year		
No	28.8	46.8
Yes	29.1	36.4
Injection usual route of primary substance		
No	29.4	46.6
Yes	25.5	33.8
Any secondary substance use		
No	11.0	41.4
Yes	42.5	47.4
Treatment-related characteristics		
Referral		
Self	31.7	38.1
SACPA	28.1	51.6
Other CJS/CPS/court referral	24.7	51.7
Other	30.3	43.5
Any prior treatment episodes		
No	31.1	47.5
Yes	26.7	41.3
Type of treatment (1st tx in episode)		
Outpatient	26.5	50.3
Residential <=30 days	26.4	37.7
Residential >30 days	45.6	74.5
Detoxification	14.6	15.0
NTP Maintenance	33.7	40.1
NTP Detoxification	24.2	24.8
Treatment category for entire episode		
Outpatient only[6]	26.2	50.5
Residential <=30 days only	31.4	39.4
Residential >30 days only	45.7	74.6
Detoxification (non-NTP) only	7.5	7.7
NTP detox only	8.4	18.3
NTP maintenance only	33.4	39.9
Combinations of services within episodes	42.8	57.8

Number of service sets in episode (Technical Note 6)		
1	27.2	42.8
2	36.8	51.8
>2	40.0	53.0
Discharge status		
Completed	33.0	51.7
Did not complete	20.2	29.9
Retention		
<90 days	21.3	27.8
>=90 days	35.5	64.5
<60 days	18.9	23.5
>=60days	35.0	63.1
Other personal/health characteristics		
Any legal/CJS status at admission		
No	30.9	39.4
Yes	27.3	50.0
Social support activities (past 30 days)		
No	29.0	40.9
Yes	26.6	47.9
Family conflict (past 30 days)		
No	26.6	41.7
Yes	37.5	45.8
Medical problems (past 30 days)		
No	27.8	43.0
Yes	28.6	39.7
Emergency room visits (past 30 days)		
No	27.8	43.1
Yes	28.2	35.2
Hospital stays (past 30 days)		
No	27.8	42.4
Yes	31.4	40.0
Hepatitis C		
No	28.2	43.0
Yes	25.5	37.0
Sexually transmitted disease		
No	27.8	42.1
Yes	31.8	54.3
Tuberculosis		
No	28.0	42.6

Yes	27.9	45.2

[1] Measures are reported in this table in terms of "amount of improvement," with a positive value indicating improvement. Improvement is reflected by a *decrease* in percentage from admission to discharge (based on percentages in Table 2). Negative values in Table i indicate lack of improvement—i.e. a change for the worse for the subgroup. See Table 2 for other table details.

[2] *Simple Difference* indicates the (subtraction) difference between the percentage (with use of the primary substance in past 30 days) at admission and the percentage at discharge. These are the amounts of change reported in the chapter narrative.

[3] The *proportional change* is calculated as the difference between the admission and discharge percentages divided by the admission percentage, then multiplied by 100 to report in percentage units.

[4] For some subgroups, proportional change could not be computed because the admission percentage was zero. These are noted with " -- ".

Appendix Table ii (adjunct to Report Table 3): Change from Admission to Discharge in Percentage with CJS Involvement, Employment, Homelessness, and Family Conflict

	Change (improvement) Admission to Discharge (in %)[1]									
	CJS Involvement		Employed		Employed or Enrolled in Sch/Training		Homeless		Family Conflict	
	Diff.[2]	Prop. Chg.[3]	Diff.[2]	Prop. Chg.[3]	Diff.[2]	Prop. Chg.[3]	Diff.[2]	Prop. Chg.[3]	Diff.[2]	Prop. Chg.[3]
Overall	14.7	70.7	8.4	33.5	9.6	27.1	3.5	17.5	5.4	45.8
Demographics										
Gender										
Male	15.6	71.2	8.5	29.0	8.8	22.3	3.8	18.3	4.2	46.7
Female	12.9	68.6	8.2	47.1	10.8	38.3	3.2	17.1	7.5	44.9
Age (years)										
12-17	5.2	57.1	3.0	46.2	3.7	4.3	0.0	0.0	--[4]	--
18-24	16.3	70.3	9.7	35.4	10.3	25.3	2.1	16.9	5.4	41.5
25-34	17.1	71.8	10.2	35.4	11.6	35.6	3.7	20.1	6.4	48.5
35-44	16.3	71.5	9.3	34.3	10.7	35.9	4.3	17.5	5.4	45.8
45-54	12.9	69.4	7.0	28.0	8.1	29.5	4.5	16.0	4.3	44.8
55 and older	9.4	71.2	3.6	21.2	4.3	22.8	4.8	22.4	4.5	51.7
Race/Ethnicity										
White	15.0	70.8	8.8	33.0	9.5	27.9	4.8	22.4	5.9	46.1
Hispanic/Latino	14.1	70.5	8.5	31.4	9.6	22.9	2.0	14.9	5.0	46.3
Black	14.2	68.6	7.1	49.7	9.2	38.8	3.0	9.2	4.9	44.5
American Indian/ Alaska Native	17.5	70.6	6.6	33.2	8.6	30.6	3.1	14.5	5.6	44.1
Asian/Pacific Islander	15.2	71.0	10.3	36.7	11.1	27.5	1.0	8.3	3.7	39.4
Other	14.9	72.3	8.3	33.1	10.3	26.6	3.8	20.5	5.8	44.6
Education										
Less than high school	14.9	70.0	7.6	38.6	8.7	21.8	2.5	14.8	4.5	41.3
High school (HS)	15.3	71.5	9.1	32.3	10.4	32.3	4.3	20.5	5.3	46.5
Some college/post-HS training	13.1	70.1	8.3	28.4	9.2	27.6	4.4	18.3	9.1	61.5
Homeless										
No	14.0	70.7	7.8	26.4	8.5	20.2	-2.5	--	4.6	41.1
Yes	17.3	70.0	9.7	142.6	12.3	126.8	27.5	27.5	9.1	61.5
Parental status/children										
No children<18 yr	13.9	69.5	7.3	27.4	7.9	25.8	4.3	17.1	4.1	44.1
Any children<18 yr	17.5	72.3	9.0	33.8	10.9	35.7	3.6	18.8	6.8	46.6
Any children<5 yr	16.9	72.2	9.5	37.4	11.6	39.1	3.2	18.4	7.3	46.8
Minor child(ren) living elsewhere	17.7	74.1	11.9	63.0	14.8	63.5	4.6	20.1	8.1	49.1
Lost parental rights for any child(ren) living elsewhere	22.2	72.3	10.8	69.7	13.8	67.3	10.3	37.2	6.2	39.2

Substance Use										
Primary substance (any use in past 30 days)										
Alcohol	10.9	64.9	15.7	62.8	6.1	17.4	5.5	20.5	7.5	51.4
Heroin/opiates	8.4	64.6	3.8	13.5	4.2	13.5	2.7	14.6	3.2	31.4
Cocaine/crack	19.6	72.6	8.5	42.7	10.3	42.2	2.6	7.7	6.1	49.6
Marijuana	12.1	69.5	6.9	28.5	7.5	12.6	1.3	18.6	2.9	31.5
Methamphet/amph	13.8	67.0	12.3	48.0	14.1	44.9	3.9	21.8	5.5	47.4
Other drugs	12.1	76.6	7.4	26.1	6.9	15.5	2.8	26.9	8.1	58.3
Days of primary substance use in past 30 days										
0 days	20.2	77.7	13.7	50.2	15.4	38.8	3.0	21.7	1.9	28.8
1-10	15.0	69.1	7.0	25.1	8.0	20.1	2.3	13.9	6.5	50.0
11-20	13.0	67.0	6.6	32.8	7.7	24.8	4.9	18.1	11.7	57.1
21-30	7.1	55.0	3.2	15.8	3.7	14.6	5.2	17.0	9.3	50.0
Injection use										
Past 30 days (see Tech. Note 7)										
No	15.4	71.6	8.9	35.2	10.1	27.6	3.4	17.7	5.2	45.2
Yes	9.1	61.1	3.7	15.8	4.0	15.6	5.0	18.1	7.7	50.3
Past year										
No	14.9	71.3	8.8	34.4	9.8	26.1	3.3	17.6	5.4	46.2
Yes	13.7	67.5	6.9	30.5	8.0	30.4	4.8	18.4	5.9	46.1
Injection usual route of primary drug										
No	14.8	70.5	8.6	34.1	9.7	26.3	3.4	17.5	-4.5	-225.0
Yes	13.4	69.1	7.0	28.8	8.2	30.0	4.5	19.1	3.9	36.4
Any secondary drug										
No	20.7	78.1	13.9	54.7	15.7	41.0	3.8	23.2	3.2	37.2
Yes	13.2	65.3	6.6	29.9	7.5	23.7	4.1	16.3	9.1	52.6
Treatment-related characteristics										
Referral										
Self	6.4	56.6	4.1	19.2	4.7	16.5	5.5	19.9	9.4	51.9
SACPA	23.7	75.2	11.1	30.9	12.2	30.2	2.1	18.8	2.9	36.3
Other CJS/CPS/court referral	21.3	72.2	13.1	50.0	14.8	34.9	3.2	24.4	3.6	40.0
Other	8.2	70.7	6.1	39.6	7.4	23.3	2.7	9.8	7.4	50.3
Any prior treatment episodes										
No	14.0	70.0	7.2	27.2	7.9	19.1	2.5	15.8	5.1	45.1
Yes	15.4	71.0	9.7	41.3	11.2	38.2	4.7	19.2	5.8	46.8
Type of initial treatment										
Outpatient	13.7	68.5	9.1	27.8	19.7	51.3	0.1	1.7	2.8	28.0
Residential <=30 days	16.4	67.8	1.7	13.5	20.4	146.8	4.3	12.0	8.7	50.0
Residential >30 days	29.5	83.6	16.1	183.0	2.0	8.4	10.0	25.0	10.9	71.7

Detoxification	4.2	36.5	0.4	2.6	0.3	1.7	8.5	18.6	13.8	67.0
NTP Maintenance	2.3	54.8	-0.4	-0.9	-0.4	-0.9	1.8	12.9	0.6	7.3
NTP Detoxification	0.9	23.1	1.5	4.8	0.8	2.4	-0.5	-12.2	-0.8	-11.1
Treatment category for entire episode										
Outpatient only	13.2	68.0	9.8	29.6	10.1	20.4	0.4	7.1	2.6	26.5
Resid<=30days only	14.5	63.6	-0.2	-1.5	-0.3	-1.2	3.5	10.0	7.9	45.7
Resid>30days only	28.5	82.4	14.4	173.5	18.8	138.2	8.2	20.2	11.0	72.8
Detox (non-NTP) only	3.1	28.4	-0.9	-5.8	-1.6	-9.2	8.4	18.3	24.3	64.3
NTP detox only	2.0	55.6	1.7	5.4	0.7	2.1	1.9	14.5	-1.1	-20.8
NTP maintenance only	0.3	9.7	0.2	0.4	0.2	0.4	0.0	0.0	-1.0	-14.5
Combinations of continuing services	21.7	79.8	9.9	52.9	12.7	55.5	6.8	24.0	9.6	60.4
Number of service sets in episode (Tech Note 6)										
1	13.8	69.0	8.3	32.3	9.1	24.6	3.2	16.8	4.9	43.4
2	19.2	76.2	9.8	43.4	12.1	42.0	5.2	22.3	7.5	54.0
>2	17.4	75.0	7.4	38.1	9.6	40.0	4.5	16.1	8.5	53.8
Discharge status										
Completed	15.6	77.2	11.5	44.7	2.4	6.6	5.0	23.3	6.7	58.8
Did not complete	12.7	57.5	1.5	6.4	12.7	36.4	0.4	2.3	3.0	23.4
Retention										
<90 days	11.2	56.6	0.9	4.4	1.4	4.7	3.5	12.8	6.0	42.6
>=90 days	17.8	82.0	14.8	51.4	16.4	40.8	3.7	27.0	5.0	47.6
<60 days	9.5	50.5	-0.4	-2.0	-0.1	-0.4	3.6	12.3	5.7	39.3
>=60 days	17.9	81.4	13.6	48.7	15.2	38.2	3.5	24.1	5.3	48.6
Other personal/health characteristics										
Any legal/CJS status at admission										
No	4.0	54.8	4.4	21.1	5.4	17.1	3.9	15.2	8.1	48.2
Yes	22.6	73.1	11.4	40.4	12.6	32.8	3.3	20.9	4.0	43.0
Social support activities (past 30 days)										
No	13.6	69.4	6.0	25.0	6.5	17.6	3.2	15.6	4.8	44.0
Yes	16.5	72.1	10.4	39.1	11.7	34.8	4.4	21.2	6.2	47.3
Family conflict (past 30 days)										
No	15.9	71.9	8.3	30.5	9.5	30.5	3.9	17.6	-3.2	--
Yes	13.6	66.3	6.4	29.4	7.4	28.0	4.7	18.5	69.1	69.1
Medical problems (past 30 days)										
No	15.8	72.1	8.6	30.4	9.7	30.0	3.9	18.4	4.5	44.6
Yes	14.5	66.5	5.4	28.9	6.9	30.5	4.3	15.1	10.1	48.3

Emergency room visits (past 30 days)										
No	15.9	71.9	8.6	31.2	9.6	30.3	3.8	17.9	4.8	44.0
Yes	11.8	59.9	3.5	21.2	5.2	26.1	5.4	15.5	12.0	51.9
Hospital stays (past 30 days)										
No	15.7	71.4	8.2	30.3	9.3	29.9	3.9	17.8	5.2	45.2
Yes	10.7	62.2	4.6	36.8	6.5	41.1	5.6	14.4	12.2	55.5
Hepatitis C										
No	15.7	71.4	8.2	30.4	9.3	30.0	3.9	17.7	5.4	45.4
Yes	16.0	72.7	7.9	44.1	9.5	43.2	5.9	19.8	5.2	47.3
Sexually transmitted disease										
No	15.6	71.2	7.9	29.6	9.1	29.7	4.0	17.9	5.3	45.3
Yes	19.2	76.2	10.0	49.0	11.6	46.0	4.6	18.8	10.3	58.5
Tuberculosis										
No	15.5	70.8	8.1	30.6	-0.8	-2.6	4.0	17.9	5.4	45.4
Yes	19.3	72.3	10.5	45.1	11.9	41.3	3.5	14.5	4.4	44.9

[1] All measures are reported in this table in terms of "amount of improvement," with a positive value indicating improvement. For criminal justice involvement, homelessness, and family conflict, improvement is reflected by a *decrease* in percentage from admission to discharge (based on percentages in Table 3); for employment and employment/education improvement is indicated by an *increase* in percentage from admission to discharge. Negative values in Table ii indicate lack of improvement—i.e. a change for the worse for the subgroup. See Table 3 for other table details.

[2] *Simple Difference* indicates the (subtraction) difference between the percentage (with use of the primary substance in past 30 days) at admission and the percentage at discharge. These are the amounts of change reported in the chapter narrative.

[3] The *proportional change* is calculated as the difference between the admission and discharge percentages divided by the admission percentage, then multiplied by 100 to report in percentage units.

[4] For some subgroups, differences and proportional change could not be computed because of missing data or proportional change could not be computed because the admission percentage was zero. These are noted with " -- ".

Appendix Table iii (Adjunct to Report Table 4): Change from Admission to Discharge in Percentage Using Primary Substance in Prior 30 Days for Priority/Special Needs Subgroups

	Change (improvement) Admission to Discharge (in %)[1]	
	Simple Difference[2]	Proportional Change[3]
Overall	28.9	44.5
Women	30.0	47.4
Pregnant women	25.1	53.3
Women with minor children	29.3	48.9
Women of child-bearing age	30.0	48.8
Age groups		
Youth 12-17 years	31.7	54.0
Young adults (18-25 years)	30.1	50.0
Older adults (55 years and older)	27.4	37.0
Mental illness (lifetime)	28.1	41.8
Legal status at admission	27.3	50.0
Injection drug users	26.3	34.1
Homeless	29.0	38.4
Veterans	24.1	36.5
Disabled	29.5	44.9
Medi-Cal recipients	28.7	46.1

[1] Measures are reported in this table in terms of "amount of improvement," with a positive value indicating improvement. Improvement is reflected by a *decrease* in percentage from admission to discharge (based on percentages in Table 4). Negative values in Table iii indicate lack of improvement—i.e. a change for the worse for the subgroup. See Table 4 for other table details.
[2] *Simple Difference* indicates the (subtraction) difference between the percentage (with use of the primary substance in past 30 days) at admission and the percentage at discharge. These are the amounts of change reported in the chapter narrative.
[3] The *proportional change* is calculated as the difference between the admission and discharge percentages divided by the admission percentage, then multiplied by 100 to report in percentage units.

Appendix Table iv (adjunct to Report Table 5): Change from Admission to Discharge in Percentage with CJS Involvement, Employment, Homelessness, and Family Conflict for Priority/Special Needs Subgroups

	Change (improvement) Admission to Discharge (in %)[1]									
	CJS Involvement		Employed		Employed or Enrolled in Sch/Training		Homeless		Family Conflict	
	Diff.[2]	Prop. Chg.[3]	Diff.[2]	Prop. Chg.[3]	Diff.[2]	Prop. Chg.[3]	Diff.[2]	Prop. Chg.[3]	Diff.[2]	Prop. Chg.[3]
Overall	14.7	70.7	8.4	33.5	9.6	27.1	3.5	17.5	5.4	45.8
Women	12.9	68.6	8.2	47.1	-19.2	-68.1	3.2	17.1	7.5	44.9
Pregnant women	18.0	72.3	3.9	36.1	10.0	47.6	5.0	23.8	5.3	33.3
Women with minor children	14.9	69.6	8.6	53.8	11.7	54.4	3.5	17.0	8.4	45.2
Women of child-bearing age	13.7	69.2	8.9	51.1	11.5	39.5	3.3	18.1	7.6	44.2
Age groups										
Youth 12-17 years	5.2	57.1	3.0	46.2	3.7	4.3	0.1	16.7	--[4]	--
Young adults (18-25 years)	16.3	70.3	9.7	35.4	10.3	25.3	2.1	16.9	5.4	41.5
Older adults (55 years and older)	9.4	71.2	3.6	21.2	4.3	22.8	4.5	16.0	4.5	51.7
Mental illness (lifetime)	13.2	68.0	5.8	42.6	7.2	34.0	4.9	17.1	9.1	48.7
Legal status at admission	22.6	73.1	11.4	40.4	12.6	32.8	3.3	20.9	4.0	43.0
Injection Drug Users	13.6	68.7	6.9	29.5	8.0	30.3	4.9	19.4	5.2	44.1
Homeless	17.3	70.0	9.7	142.6	12.3	126.8	27.5	27.5	9.1	61.5
Veterans	14.5	73.2	9.1	40.8	10.7	42.6	8.9	23.3	5.7	53.8
Disabled	13.9	70.6	5.7	47.5	7.7	44.3	3.5	13.3	6.9	47.6
Medi-Cal	10.1	66.4	6.4	54.2	7.4	22.6	1.2	7.6	6.1	40.7

[1] All measures are reported in this table in terms of "amount of improvement," with a positive value indicating improvement. For criminal justice involvement, homelessness, and family conflict, improvement is reflected by a *decrease* in percentage from admission to discharge (based on percentages in Table 5); for employment and employment/education improvement is indicated by an *increase* in percentage from admission to discharge. Negative values Table iv indicate lack of improvement—i.e. a change for the worse for the subgroup. See Table 5 for other table details.

[2] *Simple Difference* indicates the (subtraction) difference between the percentage (with use of the primary substance in past 30 days) at admission and the percentage at discharge. These are the amounts of change reported in the chapter narrative.

[3] The *proportional change* is calculated as the difference between the admission and discharge percentages divided by the admission percentage, then multiplied by 100 to report in percentage units.

[4] For some subgroups, differences and proportional change could not be computed because of missing data or proportional change could not be computed because the admission percentage was zero. These are noted with " -- ".

CHAPTER 6: CALOMS UTILIZATION SYSTEM-WIDE

There is considerable interest in the field of addiction in assuring that treatment programs for substance use disorders[74] perform efficiently (provide quality services) and produce effective client outcomes. The California Department of Alcohol and Drug Programs (ADP) developed the California Outcomes Measurement System (CalOMS) to systematically collect and monitor data on client functioning across key outcome indicators: alcohol/drug use, medical/psychiatric health status, employment/education, criminal involvement, family relations, and social support areas system-wide.[75]

As part of a system-wide evaluation of CalOMS, this chapter describes the functionality and utilization of CalOMS at the county and program level. Specifically, it examines (1) how county administrators and treatment providers understand and utilize CalOMS data and outcome reports, (2) barriers associated with the utilization of CalOMS data and outcome reports at the county and program levels, (3) communication about CalOMS data and outcome reports between county administrators and treatment programs, and (4) CalOMS-related outcome data trainings at county and program levels. The county- and program-level findings are reported separately, with findings between the two levels synthesized in the key findings section of the report. This information will enable ADP to better understand the utilization patterns of CalOMS data and outcome reports, as well as factors that affect such utilization at the county and program levels.

CalOMS UTILIZATION AT THE COUNTY LEVEL

County Sample

Focus Groups

Two focus groups were conducted with a total of 25 county administrators who were voluntarily recruited from the California Alcohol and Drug Program Administrators Association of California (CADPAAC) fall 2007 meeting in Sacramento. The gender and ethnic breakdowns for the participating county administrators were approximately 60% women (*n*=15), 76% White (*n*=19), and similar proportions of Latino (8%, *n*=2), African-American (8%, *n*=2), and Asian/Pacific Islander (8%, *n*=2). The average age of the focus group participants was 54.5 years (range: 41-63 years). In terms of educational attainment, 12% (*n*=3) of the focus group participants had bachelor degrees, 68% had master degrees (*n*=17), one had a doctoral degree (4%), and 8% had other degrees (*n*= 4), two of which were an associates degree and Juris Doctor law degree. Focus group participants reported working as county administrators for an average of 5.5 years (range: < 1 year to 25 years).

Survey

In addition, 41 out of the 58 administrators completed a Web-based survey. Results from the county surveys indicate that among the administrators that responded, the average length of time they worked in their respective counties was 14 years (range: less than 1 year to 36 years) and the amount of time they have held their current administrator position was 5 years (range: < 1 year to 26 years).

[74]Substance use disorders refer to both alcohol and illicit drug abuse or dependence as defined by the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition - DSM-IV (American Psychiatric Association, 1994). Because the data collected from CalOMS does not provide a clinical diagnosis of substance abuse or dependence, it is not possible to specify to that level. However, from information collected in CalOMS, it is clear that the large majority of individuals in treatment would certainly meet criteria for dependence.

[75]"System-wide" denotes the diverse publicly monitored alcohol and drug treatment programs in the 58 California counties.

Data Instruments

Focus Groups
A standardized interview guide was used to facilitate a 1½- to 2-hour focus group discussion with participating county administrators about the following topics: utilization of CalOMS data and outcome reports, as well as barriers associated with utilization of data and reports. A brief survey was also given to focus group participants to obtain general background information.

Survey
A 41-item survey including both multiple-choice and open-ended questions was designed to take approximately 30 minutes to complete. Survey questions solicited information about factors that affect CalOMS data use, including data collection, entry, and reporting procedures, measurement protocols (including measurement of episodes of treatment), CalOMS data-related communication patterns with providers and ADP, training needs with respect to CalOMS data and outcome reports, and recommendations for enhancing CalOMS.

Procedures

Focus Groups
Focus group sessions were held in private rooms at the Hilton CADPAAC meeting site following the adjournment of the meeting. After the moderator and moderator assistant introduced the goal of the focus groups, the participants were given an Informed Consent form to sign and turn in prior to the discussion. Background information was also collected from the participants through a brief survey. Each session was audio-taped and lasted approximately 1½ hours. The assistant to the moderator also took written notes.

Survey
All 58 county administrators were sent an e-mail with an electronic survey through SurveyMonkey.com, a Web-based data collection program. The e-mail also contained an information sheet explaining the voluntary and confidential nature of the survey. Upon request, a hard copy of the survey was sent to the county administrator with a postage-paid return envelope. County administrators were given approximately one month to complete and return the survey.

Data Analysis

Focus Groups
Audiotapes of focus groups were transcribed verbatim. The data analysis process included the development of primary codes and subcodes devised from the topics and themes that emerged through assessment of the transcripts. Transcript data were coded and organized for content analysis using the qualitative data analysis software program ATLAS.ti. Patterns in the coded data revealed overarching constructs and themes.

Surveys
County surveys were analyzed using SurveyMonkey software, which computes totals and percentages of closed-ended multiple choice questions. Open-ended questions were assessed and organized for key themes using content-theme analysis, whereby responses are listed and assigned frequency counts to ascertain majority response patterns.

Responses to surveys and focus groups resulted in 5 major themes pertaining to CalOMS utilization: (1) awareness and understating of the CalOMS goals, data, and outcome reports, (2) usability and utility of CalOMS data and outcome reports, (3) barriers faced when using CalOMS data and outcome reports, (4) communication related to CalOMS data and reports, and (5) training needed for using CalOMS data and outcome reports.

Awareness of CalOMS Goals, Data, and Outcome Reports

Awareness of CalOMS Goals

County alcohol and drug administrators have dual leadership roles with respect to CalOMS. They are held accountable by ADP to report timely and accurate CalOMS data for reporting purposes to the federal government. They also provide direction to treatment programs regarding the collection of CalOMS data. Given these mediatory roles, it is imperative that county administrators have a solid level of awareness of the goals of CalOMS data and outcome reports.[76] In general, there was shared sentiment among most county administrators that the goal of CalOMS is to "satisfy the minimum data set required by the state and federal government for funding." Other administrators commented that other shared system-wide goals of CalOMS include "using data to push for treatment change policies" and "understanding client outcomes to improve treatment quality." There was disagreement as to whether or not treatment programs are aware of the goals of CalOMS. Some administrators said providers are "not very aware of the treatment improvement goals related to CalOMS data collection" and view it simply as a "funding requirement."

Awareness of CalOMS Data & Outcome Reports

Almost all county administrators (93%) indicated familiarity with the kinds of data collected in CalOMS. The majority of administrators (95%) were also aware of the CalOMS Website on the ADP homepage, which many (83%) believed was useful to their understanding of the CalOMS goals and awareness of the CalOMS data and outcome reports.

The CalOMS data system housed at ADP contains a series of 16 canned outcome reports specific to the following domains: accessing services, changes during treatment, service utilization, and treatment population. Awareness of these CalOMS outcome reports greatly varied among county administrators. There seemed to be limited knowledge among the administrators on what types of CalOMS outcome reports existed, how to access the reports, and how to create and download the reports for their use. Due to this lack of understanding about the CalOMS outcome reports, many administrators reported that they have developed their own county-specific internal outcome reports generated from their respective data system as a way to "have more rapid access to outcome information as well as to better monitor program performance."

Usability & Utility of CalOMS Data and Outcome Reports

County administrators were asked a series of questions about how they use CalOMS data and outcome reports, including use of episode data. In addition, they were asked about the utility of CalOMS data and outcome reports. This information is important for identifying ways to improve utilization patterns of CalOMS data at the county level.

Use of CalOMS Data

Close to a quarter (24%) of county administrators surveyed indicated that they "do not" use CalOMS data aside from ADP mandated reporting. Of the administrators who indicated using CalOMS data (76%), reasons included evaluating demographic client information, identifying drug trends (especially by specific populations), understanding treatment referral sources, and comparing themselves to other counties within the state. Some counties reported that CalOMS data are used to share treatment information with county-based community organizations and programs for purposes of raising awareness about the data, as well as the Board of Supervisors and Advisory Boards for soliciting funding. Other county administrators said that the data are used when applying for grants for expanding or enhancing treatment.

[76] According to the CalOMS User Guide developed by ADP, the goals of CalOMS data and outcome reports include: (a) efficient management and improvement of treatment services, (b) timely and correct reporting to federal and state entities, and (c) distribution of reports to federal, state, and provider personnel, donors, and other stakeholders.

Use of CalOMS Outcome Reports
Only 33% of administrators indicated having "accessed or reviewed CalOMS outcome reports" six or more times in the past year, with most indicating that they accessed reports when needed. Most of the administrators that have accessed CalOMS outcome reports indicated that reports are typically used for monitoring performance and outcome improvements in their county (43%), treatment planning with programs (34%), understanding important client admission information (66%), understanding changes in clients function from admission to discharge (34%), and measuring treatment and ancillary service needs at discharge (24%). Some administrators reported using the outcome reports as "monitoring tools" to ensure that programs are inputting CalOMS data in a correct and timely fashion.

Use of Treatment Episodes from CalOMS Data & Reports[77]
The use of treatment episodes is novel and unknown to most counties, as 78% of administrators indicated that "they do not know how to use CalOMS data to assess client outcomes across the episode of treatment services." Of the 22% of administrators who reported measuring outcomes across treatment episodes, the definition of "episode" varied and was most commonly defined as "an admission-to-discharge set for the same client across different levels of care by service type/modality." Some administrators specified measuring an episode by "the continuous modifications and changes in treatment modality during treatment since the treatment plan at intake." Administrators were asked to describe how changes in client functioning are captured when examining outcomes across treatment episodes. Almost all respondents were unable to answer this question.

Utility of CalOMS Data and Outcome Reports
The perceived utility of CalOMS data and outcome reports varied among administrators. About 44% of the administrators indicated that the outcome reports are "useful" given that they correspond to the state and federal reporting requirements across key outcome indicators of drug use, criminal status, and social functioning, although they are limited in the extent to which performance measures are available.[78] Several administrators noted concerns about the utility of the CalOMS outcome reports. A major limitation was that reports are "not flexible." Many administrators expressed frustration, stating "that they can't get outcome reports in a way that is helpful to their needs…and that retrieving data in a desired format is problematic as the current outcome reports are already pre-populated with specific data fields." In addition, many administrators stated that the CalOMS outcome reports do not allow for an assessment of treatment episodes or an understanding of change in client functioning by treatment episode; nor do they allow for the ability to create such information as the report only captures a comparison of admission and discharge data only. Other administrators indicated that the CalOMS outcome data and reports are limited as they are not necessarily relevant to a "chronic care approach to care."

Many administrators expressed several ways that they would like to see CalOMS data and outcome reports used. Interests included: driving fiscal decisions and future funding, targeting treatment planning for certain client populations, monitoring provider performance, tracking treatment episodes, and developing strategies for improving program services and client outcomes. Presently, most administrators stated they are still exploring the most effective use for CalOMS data and outcome reports and do not necessarily know how to use CalOMS data and reports to receive the full benefits given the many limitations associated with the data and reports (described in Barriers section below).

[77] It should be noted that ADP CalOMS Outcome Reports do not include episode treatment data nor does ADP provide the counties any standard CalOMS episode outcomes reports.
[78] Performance data is typically obtained via encounter data. May counties indicated that they collect encounter data (i.e., number of sessions) as part of the Billings system.

Barriers with CalOMS Data and Outcome Report Utilization

Measurement Issues

Many county administrators stated that CalOMS data and outcome reports would be more useful if they included improved measurement of certain client populations including those with co-occurring mentally illness, those physically impaired/disabled, and gay and lesbian groups. They also stated that information about these groups is important for assessment and placement in treatment, as well as funding opportunities from their legislature (and other grant mechanisms). It was further indicated that CalOMS measures lack therapeutic "assessment or screening" ability for assessing drug dependence or severity of use, mental illness type and severity, medical illness/disease status, as well as risk behaviors related to criminal justice (domestic violence) and other psychosocial areas. Some administrators pointed out that because counties manage their own data systems, they have the option of adding measures, even if these measures are not reported as part of CalOMS. To this end, some counties are currently adding measures to their data systems regarding sexual orientation, HIV risk, and referral sources related to child welfare/social services.

Another major barrier related to the use of CalOMS data and outcome reports expressed by many county administrators had to do with discharge status measurement. According to most administrators, the use of data related to discharge status is useless and meaningless given the lack of standard definitions and inconsistent use of the measures (categories/codes) across programs. Some administrators indicated that "by having inconsistent definitions, some counties benefit while others suffer." For example, administrators indicated that it is not uncommon for counties to "play"[79] with discharge measures and use the flexibility to their benefit financially (i.e., some counties are prone to label a SACPA client as "successfully completed" (regardless of referral status) in order to receive more funding, when in fact the client is actually transferring and is still in a treatment episode.

Access Issues

Although all county administrators can potentially have access to CalOMS outcome reports, not all actually do. Many administrators expressed that the way the system is set up to access outcome reports through the ITWS (with required user names and passwords) is too complex and complicated for non-technically inclined users. For example, some administrators indicated that because ADP houses and manages the ITWS main frame, information-technology (IT) challenged counties do not have adequate technical resources and capabilities to go through the access-related and down-load processes. Other administrators with access expressed encountering problems when attempting to gain entry into the system due to not having an adequate understanding of how to use the ITWS system. Some administrators expressed frustration over the amount of time it takes to download an outcome report, which again depends on county IT capabilities. Several administrators also expressed issues with the inability of providers to be able to access outcome reports without having to go through the county…and expressed that "providers should have direct access to CalOMS outcome reports." In addition, access or permission to download outcome reports is limited to only one to two staff in each county, which is cumbersome to several counties who are challenged by staff turn-over.

Communication about CalOMS Data and Outcome Reports

Local Level Communication about CalOMS Data

County administrators have a unique role in terms of communicating CalOMS data and disseminating CalOMS outcome reports with their programs. Administrators were asked a series of questions to identify communication patterns among and between the county and respective treatment programs. Survey results indicate that 39% of administrators "review CalOMS outcome data with their providers." Administrators indicated communication about CalOMS data typically pertains to data collection issues and data submission problems, with most of this communication

[79] "Play" was implied given the lack of solid standards or definitions of discharge measurement categories which give room for "picking" categories to their program's benefit.

occurring through phone meetings or site visits via county monitors. A few counties employed newsletters and/or memos to correspond with programs.

Local Level Communication about CalOMS Outcome Reports
In terms of disseminating CalOMS outcome reports to programs, many administrators indicated during the focus group that they acknowledge the necessity to communicate outcomes with providers (especially since providers do not have direct access to CalOMS outcome reports from the state ITWS unless they are direct providers that do business directly with ADP as opposed to contracting through the county). Different communication methods have been employed by the counties to disseminate CalOMS reports (typically internal county-generated outcome reports) to programs, including quarterly or monthly meetings or giving feedback in the form of newsletters. Many administrators expressed a need on their part to conduct more routine communication with providers through site visits to specifically disseminate and discuss CalOMS outcome reports. As one administrator noted, "To inform providers you have to get them involved by sharing the outcomes and what they say." In this way, "providers get interested in the data, and the collection and reporting that goes along with it."

State Level Communication about CalOMS Data and Outcome Reports
About half of administrators (51%) indicated that ADP communicates with them or their staff on a regular basis about "data collection and reporting requirements" although few indicated that they routinely communicate about the use of CalOMS data or outcome reports. In general, there is a great desire among administrators to receive regular and timely feedback about CalOMS outcome data and reports from ADP. Some administrators expressed that having an annual report that summarizes the key outcome findings, as was done preciously with CADDS would be beneficial. Although the CalOMS standard outcome reports are intended to allow counties to create their own annual reports, some counties suggested that county-specific client outcome reports that are directly sent to them from ADP on a monthly basis would be useful. In addition, some administrators expressed that having routine site visits or more regular contact with ADP CalOMS staff "would be beneficial to the successful use of CalOMS data and reports at the county level." For example, there was interest from most counties for establishing a "CalOMS users group" between ADP and counties that would allow for discussion of CalOMS-related issues on a more frequent basis. As a first step, an outcomes and evaluation workgroup for administrators was initiated to convene at CADPAAC quarterly meetings where they could have a forum to discuss CalOMS data and outcome areas of interest. As part of this work, there is a weekly call with an Outcomes/Data Committee to discuss issues that arise at quarterly CADPAAC meetings.

Communication about Cross-County & Program Comparisons
There were different opinions about whether the data should compare counties or programs or both. While many administrators expressed that they would like to use the outcome reports to compare how programs are performing within their county or how their county is performing compared to like-sized counties (differentiated by treatment type/modality), most indicated that it does not make sense to make such comparisons system-wide as each program and county is unique with various factors that would bias comparisons. Furthermore, other administrators cautioned that "because there are items that are inconsistently defined and reported, program and county data comparisons may be meaningless and problematic."

Training for Utilization of CalOMS Data and Reports

At the time CalOMS was implemented, administrators and county staff received training by the ADP on data collection and reporting procedures.[80] The county administrators were, in turn, responsible for training treatment programs within their county on the use of CalOMS. Given that CalOMS was recently implemented and given the high degree of staff turnover that occurs at the local level, it is important that training and technical assistance needs be identified and addressed.

[80]ADP has established a CalOMS Help Desk and developed a CalOMS data dictionary and CalOMS User Guide Manual for counties to use, all of which are available on the state Website.

Through survey and focus group findings, the following three themes regarding training were identified: use of technical assistance and resources, county-to-program trainings, and the need for CalOMS trainings.

Use of CalOMS Technical Assistance and Resources
Not all county administrators were familiar with the CalOMS data dictionary or User Manual located on the ADP Website, although a majority (76%) had used the CalOMS helpdesk within the past year; 46% of all surveyed administrators indicated they had used the Website "6 or more times" compared to 18% who never contacted the help desk for technical assistance with using CalOMS. Primary reasons for contact included: data collection questions and issues, obtaining assistance with uploading reports, obtaining information about outcome data reports, and data submission problems.

County-to-Program CalOMS Data and Outcome Report Trainings
Counties varied on the level and type of trainings they provided to treatment programs with respect to use of CalOMS data and outcome reports. There was interest in training service providers on how to generate their own outcome reports. In terms of current training activities provided for programs, some counties indicated that they have CalOMS refresher trainings about every six months, particularly because of high staff turnover. One county holds regular and ongoing trainings and check-ups for that reason. Some administrators stated they regularly engage in work group trainings with providers where county personnel are sent to programs to provide on-site trainings. One county administrator reported providing computer equipment to various providers that were not technically inclined or capable.

Needed CalOMS Technical Assistance & Training
In addition to the technical assistance and resources available from the state, many (79%) administrators expressed a need for ongoing technical assistance/training related to using CalOMS data and outcome reports, particularly since many administrators have been in their role a limited time and many need refresher trainings/information on the use of CalOMS data and outcome reports.[81] Areas of training most needed included instruction on how to use CalOMS data and outcome reports, CalOMS data measurement definitions, and data quality. When asked to identify the methods of training they believed to be most appropriate, 83% reported workshops/classes and 67% felt that an interactive or "live" method (such as Web conferencing) would be helpful in addressing the counties' ongoing technical assistance needs. Such training mechanisms can better assist administrators by "walking them though the outcome reports in terms of access and use," as one administrator stated.

CALOMS AT THE PROGRAM LEVEL

Program Sample Profile

A stratified, random sample of 206 treatment programs in California was selected from programs with five or more CalOMS admissions during fiscal year July 1, 2006, to June 30, 2007 (FY data as of December 2007). The sample was representative of counties by size [large (*N*=143), medium (*N*=33), small (*N*=23), and MBA (*N*=7)] and treatment program type [outpatient (*N*=131), residential (*N*=64), and detoxification and narcotic treatment program detoxification and maintenance (*N*=11)].

In total, 104 programs completed and returned the surveys. In cases where the program directors were not present, another staff member completed the survey. Thus, respondents included a mixture of program directors and clinical, or management staff. Of these program respondents, the average duration that program staff worked in the respective treatment programs was 7 years (range: < 1 year to 26 years) and the amount of time in their current position averaged 6 years (range: < 1 year to 23 years). Program respondents had an average of 12 years (range: 1 to 30

[81] This large percentage of administrators needing technical assistance speaks to another issue of counties being able to offer providers meaningful technical assistance on how to access and use CalOMS data and outcomes reports.

years) of experience in the field of substance abuse treatment. A little more than half of the program respondents had licensure in the field of addiction, with the most common types being Certified Addiction Specialists (CAS) and Marriage and Family Therapists (MFT); very few had higher academic degrees.

Data Instruments

A 68-item survey was developed that included open- and closed-ended questions on key areas related to awareness, attitudes, and utilization of CalOMS data. The survey also assessed other important treatment practices not collected by CalOMS, including the types of treatment models/therapeutic services given and practices associated with treatment plans and assessment as well as discharge status measurement. The survey was designed to take approximately 45 minutes to complete.

Procedures

A program survey was sent to 198[82] program directors for each respective alcohol and drug treatment program selected during the sampling process. Using program provider information housed by ADP on a master provider list, surveys were sent either electronically via e-mail (using SurveyMonkey) or through postal mail. Program directors were given three months to return completed surveys. Participants who had not returned the survey 60 days after distribution were sent reminder postcards and/or received follow-up phone calls.

Data Analysis

Program surveys were analyzed using SurveyMonkey software, which computes totals and percentages of closed-ended multiple choice questions. Open-ended questions were assessed and organized for key themes using content-theme analysis, whereby responses are listed and assigned frequency counts to ascertain majority response patterns. Surveys resulted in four major themes: (1) awareness of CalOMS goals and data, (2) use and utility of CalOMS data and reports, (3) barriers associated with using CalOMS data, (3) communication about CalOMS data, and (4) training and technical assistance associated with using CalOMS data.

Awareness of CalOMS Goals & Data

As described earlier, the goals of CalOMS are documented in the CalOMS User Manual.[83] Based on survey results, 70% of treatment providers had a clear understanding of these goals. Such awareness is important given that programs are responsible for the CalOMS data collection across the state. In terms of provider understanding of CalOMS data, most (86%) stated that they are familiar with the information collected by CalOMS, particularly since they are involved with data collection and reporting to the county. It is important that providers understand what CalOMS data cover in order to assist in managing and improving treatment services at the program level.

Use & Utility of CalOMS Data and Outcome Reports

Use of Data and Outcome Reports

A very small percentage of providers indicated that they have “utilized outcome data and reports” in the past year. About half (51%) reported they were aware of outcome reports, although most indicated not knowing how to utilize them. When asked how CalOMS data are used for their respective treatment programs, the majority stated that it is “not used” nor ”helpful.”[84] Most

[82] Some addresses were outdated; hence of the 206 programs sampled, only 198 programs were surveyed.
[83] As described in the CalOMS User Manual, goals of CalOMS include: (1) to effectively manage and improve the provision of treatment services, (2) to meet federal and state reporting requirements, and (3) to report to administration, legislator, federal government, county board of supervisors, provider boards of directors and other third-party payers regarding the effectiveness of AOD programs in California.
[84] Further work is needed to assess the extent to which these findings are related to not having the necessary computer query tools or access to the information, versus not knowing how to use tools/reports that are available.

providers reported "filing away" outcome reports[85] generated and disseminated by the counties. Providers who did utilize the data did so to assist with understanding admission and discharge client information, understanding current drug trends and client demographics, and assisting in preparing treatment plans. A handful of providers also reported discussing the data with other program staff.

Utility of CalOMS Data and Outcome Reports
A series of questions were asked in order to understand treatment providers' perceptions about the utility of CalOMS data and outcome reports. On average, 45% of providers think that collecting CalOMS data is "useful for their treatment programs." The following is a breakdown of their reasons: to facilitate performance and outcomes improvement (33%), useful for treatment planning (37%), useful for measuring client treatment and service needs at admission (47%), client assessment information (45%), measuring treatment and service needs at discharge (35%), documenting changes in client's levels of functioning between admission and discharge (42%), and to closely monitor their treatment programs (30%).

Barriers with CalOMS Data and Outcome Report Utilization

Although half of all surveyed programs indicate that "CalOMS operations are running smoothly in their treatment programs," programs face many barriers. The two main challenges faced by programs are: (1) access to outcome data and reports and (2) lack of understanding on how to use data or reports to improve respective treatment programs.

Difficulty Accessing and Creating Outcome Reports
None of the program providers surveyed indicated having access to CalOMS outcome reports. Most counties have their own internal systems in place that give their providers access to their data. For this reason, many rely on their respective county to provide them with outcome reports. Providers indicated that they typically received outcome reports from counties infrequently, and mainly on an as-needed basis. As such, there was an expressed desire among providers to receive outcome reports during pre-established time periods (i.e., monthly, quarterly, etc).

Difficulty Utilizing Outcome Data & Reports
Many providers do not have a clear understanding of how best to utilize outcome data or reports. Again, providers do not have direct access to CalOMS outcome reports from the state ITWS unless they are direct providers that do business directly with ADP as opposed to contracting through the county. Providers obtain their information from the county. Also, less than half (30%) of providers surveyed indicated that they received feedback from the county regarding the CalOMS outcome reports. Most providers "file away" the reports they receive from the county once they receive them and only a few share reports with other staff members at their treatment programs. According to providers, the underutilization of data and reports can be attributed to the fact that "providers spend most of their time communicating with their county representatives about correct data collection and reporting rather than the actual data or reports (results of what the data say)."

Counselor Client Caseload

The counselor-client caseload was reported as a major barrier for providers to be able to use CalOMS data and reports. Most providers indicated they "they do not have sufficient time" to review CalOMS data and reports with the client caseloads they manage with limited staff resources. The average[86] client load reported by treatment programs is 218 (range: 2 to 3,960). Over the past year, treatment programs reported having an average of 16 (range: 1 to 65) full-time and part-time treatment program staff. Most treatment staff (85%) have between 1 and 30 clients at a given time (30% have between 1-10 clients/staff; 28% between 11-20 clients/staff,

[85]The degree to which these are CalOMS outcome reports is not known.
[86] The median would be useful to know; however, it was not collected in program surveys.

and 25% between 21-30 clients/staff; 9% have 31-40 clients, and 8% have over 40 clients at a given time.)

Communication about CalOMS

Ongoing communication at the local level is important to ensure proper data collection and reporting. The level and types of communication between treatment programs and county-level alcohol and drug departments was examined. Approximately 80% of providers indicated that they have contacted their counties to ask questions about CalOMS in the past year, mainly for data collection questions/issues, data submission problems, and technical issues. Providers also reported relying on internal treatment staff for CalOMS information.

Almost all providers (95%) indicated that they were contacted by the county at least once during the past year (38% six or more times, 10% five times, 7% four times, 10% three times, 14% two times, and 12% one time) to discuss CalOMS data-related issues. The top three reasons for why counties contacted providers mirrored the reasons why providers contacted the county: data collection questions/issues, reporting/submission problems, and technical issues related to CalOMS. In addition, 75% of providers reported being made aware when changes in the collection of CalOMS occurred. Less than half (30%) of providers surveyed indicated that they received feedback from the county regarding the CalOMS outcome reports. Providers indicated that local-level communication occurred most frequently via monthly meetings, e-mail or phone correspondence, and newsletter or memos, and less frequently through site visits.

Training for Utilization of CalOMS Data and Reports

Providers were asked a number of survey questions regarding their CalOMS training needs. Questions probed provider attitudes regarding how trained their program staff are, the extent of trainings conducted in the past year/6 months, plans for ongoing trainings, and actions taken by programs when they need technical assistance with using CalOMS.

Past Trainings

Approximately three-fourths of providers (76%) surveyed reported receiving some type of training on CalOMS. Among providers that received training, the training occurred when CalOMS was first introduced. Approximately 75% felt that they had received adequate training to fully understand how to collect CalOMS data, with 20% indicating their staff to be properly trained in CalOMS data reporting. For the most part, past trainings were focused on collecting data rather than "how to use the data"[87] or how to access data and outcomes reports.

Use of CalOMS Technical Assistance and Resources

The majority of programs indicated that they rely on their county-designated CalOMS staff liaison for technical assistance with CalOMS. Less than half (42%) were aware of the CalOMS help desk. Among these, only 22% had contacted help desk once in the past year (11% contacted the help desk twice, 3% contacted three times, and 3% contacted six times or more). When providers were asked whether they were aware of the CalOMS Website on the ADP homepage for obtaining information related to CalOMS, approximately 64% said they were but less than half had visited the Website in the past year. Among providers who reported visiting the ADP CalOMS Website, most thought it was a helpful source of information about CalOMS.

Need for Further Training and Ongoing Technical Assistance

The majority of the treatment program staff surveyed reported that they were only trained once during the initial implementation of the CalOMS systems. However, due to high staff turnover[88] at the program level, and the fact that many treatment program staff still have questions about the CalOMS system, there was an expressed need for more frequent trainings. Among the topics for

[87] As part of the UCLA CalOMS evaluation, a major activity is delivering county regional trainings on how to use CalOMS data and outcome reports to improve treatment services.

[88] Survey results indicate that an average of three provider staff had left or were replaced within the past year.

which training was most needed were how to directly access and create data reports and how to apply the data and outcome reports to respective performance and outcome treatment improvements.

KEY FINDINGS

The following represent key findings for this chapter.

- **The majority of counties and programs are not currently using CalOMS outcome reports to improve treatment services.** Most county administrators and treatment providers do not know about CalOMS outcome reports nor how to access reports, with very few having received/downloaded outcome reports in the past year. In addition, most providers do not have direct access to data and outcomes reports. Because of this, few of the surveyed administrators and providers find outcome reports beneficial. Further investigation is needed to understand whether administrators and providers are correctly utilizing and applying data and reports to improve treatment services.

- **Counties and programs express difficulty in extracting CalOMS data specific to their needs.** CalOMS data reports are "canned," or have pre-determined data fields, and do not allow counties the flexibility of extracting and reporting on specific data. Counties suggested that the state provide more regular standard reports. Programs rely on counties to receive outcome reports but staff expressed a desire to be able to extract data for their specific treatment programs.

- **Perception and understanding of CalOMS measures may affect utilization of CalOMS data and outcome reports.** The utilization of CalOMS data and outcome reports among county administrators and programs may be affected by their understanding of, perceptions of, and satisfaction with available CalOMS measures. Administrators expressed that additional measures are needed to correctly capture the needs of the client population (i.e., sexual orientation, HIV risk, etc.). Providers complained about not having the time to use data given their case loads. County administrators stated that the method by which discharge status is measured is inconsistent across both counties and providers. Reservations about the appropriateness of some measures and lack of understanding of how to define discharge status and apply them consistently across programs and counties will impact how (and if) data will be utilized.

- **System-wide trainings are not provided.** Counties varied in the frequency with which they trained treatment providers. Given high staff turnover in programs, consistent and more frequent modes of training may need to be implemented on data collection and proper reporting procedures. Findings reveal that county administrators are also in need of additional trainings and technical assistance from the ADP to guide data and report utilization.

- **Treatment providers are relying on different sources to obtain technical assistance on CalOMS.** Providers not only rely on county administrators for technical assistance but also on other designated staff members, who may or may not be properly trained on CalOMS. In addition, only a small percentage of providers utilized the CalOMS help desk to obtain information or technical assistance. Relying on multiple sources to obtain information may result in variations of understanding about how CalOMS data should be collected and reported.

- **System-wide communication is lacking.** Although most administrators reported "frequent communication" with treatment providers, only 25% of these administrators noted that these communications occurred on a systematic schedule (e.g., through monthly meetings). In general, communication between counties and state and counties and providers is predominately related to data collection questions/issues, data submission problems, and other technical issues, not on data or outcome reports utilization. Administrators expressed a

need for more frequent communication with the state and suggested the implementation of a CalOMS user group so as to enable more regular communications between the state and administrators about CalOMS data and reports.

CHAPTER 7: CALOMS DATA QUALITY AND VALIDITY

As part of the effort to improve treatment quality and client outcomes called for in the field of addiction, the State of California's Department of Alcohol and Drug Programs (ADP) developed the California Outcomes Measurement System (CalOMS) to comprehensively measure outcomes across core areas of functioning.[89] CalOMS data collection and reporting occurs along a two-level system. CalOMS data is collected in each of the diverse 58 counties at the program level.[90] After it is collected, it is submitted to respective county drug and alcohol departments for uploading into county-run data management systems. County-compiled CalOMS data is then submitted to the state ADP through the Information Technology Web Service (ITWS) portal for reporting purposes to the federal government. Given that CalOMS operates under such a complex and tiered system, it is important to evaluate CalOMS data validity (i.e., the extent to which CalOMS is measuring what it is intended to measure) as well as data quality (i.e., completeness, consistency, timeliness and accuracy of the data.)

This chapter discusses key factors that affect the quality and validity of CalOMS data. This information will increase system-wide awareness about practices that affect the quality and validity of client admission and outcome information reported from the California treatment system.

KEY FINDINGS

The following are key findings presented in this chapter.

- **Wide variability in data systems used to collect CalOMS data system-wide.** Currently, data collection operating systems vary at the county and program levels, with a wide range of data systems currently being used to collect and report CalOMS data. A major consequence of having different data systems is the variability of streamlined data entry and data management systems, which may negatively affect data quality.

- **Current county-based data systems used for data collection and entries.** Many counties reported that current data systems do not systematically monitor the validity of the data (i.e., there are no built-in checks for data entry errors). Providers reported "slow" systems, especially during times when multiple providers were uploading data into the county data collection server system. Some software programs contain "glitches," such as erasing all data if corrections need to be made to only one section, thus requiring additional staff time to re-enter data and creating a further burden on existing program resources.

- **Systematic data monitoring and quality checks at the local level are not in place.** The disparity in the rigorousness of the data quality monitoring processes conducted at the county as well as state levels have major consequences for the quality of the data. Although there are "data quality standards" outlined in the county and drug Medi-Cal (DMC) provider contracts, counties and DMC providers do not systematically monitor or communicate such data quality assurance responsibilities with providers. The state (ADP) has put in tremendous effort in ensuring the quality and validity of CalOMS data (i.e., system-driven validation processes as well as external staff audits of the adherence of the data to such processes/rules). In addition, the state has also developed and implemented standard data monitoring checks via the use of reports that identify inconsistencies in data (error reports). However, other methods of monitoring the data at the local level, such as observation of data collection protocols at the county and program levels are not systematically utilized.

- **The use of non-standard paper forms for collecting data at the local level may adversely impact data quality.** There is wide variability with respect to the admission and discharge forms used

[89] Core outcome data collected across the 58 counties include drug and alcohol use, medical/psychiatric health status, employment/education, legal status/criminal justice involvement, family relations and social support status in the previous 30 days at treatment admission and discharge.

[90] For the purpose of this chapter, treatment providers are defined as any publicly funded and/or ADP monitored program that administers treatment to individuals with alcohol and/or drug problems in California.

at the local level to collect CalOMS data. Not only does the format of the forms differ, there are issues with readability (small print), redundancy (similar questions asked in various sections), and consistency (cumbersome skip patterns). These issues contribute to data collection and entry errors and compromise the quality of CalOMS data.

- **Protocol for entering and reporting CalOMS data is not consistent across counties and programs.** Staff who are responsible for entering in CalOMS data into the system vary, ranging from clinicians to administrative/clerical staff, with the majority being the latter. Although approximately 60% of counties stated that they have a reporting deadline for programs to submit CalOMS data, many experience under-reporting or non-reporting by treatment programs. Counties and individual programs enforce different data collection and entry protocols. Furthermore, there is inconsistency about discharge status definitions system-wide. For instance, in some documents from ADP, referral is defined as ancillary, or subsequent to treatment, which contrasts with the definition in the Data Dictionary: "referral as to another treatment provider." This variability can lead to inconsistencies in data collection across programs and counties, thereby affecting the quality of the data that is reported.

- **Data collection of discharge information at the program level is problematic.** Measurement of discharge status is totally subjective; hence, more structured and clear definitions are needed with ongoing technical assistance to train the field how to do this correctly. Collection of administrative discharges is problematic for outcome data. Administrative discharges are much easier to accomplish for providers since they only require 5 questions that do not require the presence of the client for an answer (compared to the 93 questions that must be filled out for the other discharge codes and require a client to be present). Some of the programs are answering the 93 questions without the client present to be able to "report outcomes to their counties," which raises ethical questions and compromises the validity of the data.

- **Perception and understanding of measures at the local level may affect the quality of CalOMS data.** Many county and program staff reported difficulties comprehending how certain data measures are defined. A large portion of providers and administrators reported not understanding how to code measures such as discharge status, categorize "Hispanic" clients, or distinguish between "transfers" and "referrals." Varying levels of understanding about measures result in inconsistencies with how data is coded and entered, which can adversely impact data validity.

- **Awareness and understanding of CalOMS User Manual and Data Dictionary at the local level is limited.** Although ADP provides a user's manual and a data dictionary to assist county administrators and programs to understand how to define and code CalOMS data measures, these tools are not widely used at the county or program levels. In essence, administrators and programs may be relying on multiple sources of information (and not a single source such as the data dictionary) to assist them in understanding data measures. This may result in variations in levels of understanding about how CalOMS data should be collected and reported, and may adversely affect data quality and validity.

- **Training regarding data collection, reporting, and monitoring system-wide is inadequate and ongoing technical assistance is inconsistent.** Although county administrators are tasked with providing training and technical assistance to treatment providers, it is apparent that both county administrators and programs are not receiving adequate and continuous trainings on proper data collection. Counties varied in the frequency with which they trained treatment providers. Given the high staff turnover in treatment programs, regular and more frequent trainings may need to be implemented.

- **System-wide systematic communication is lacking.** Communication about CalOMS data collection and reporting at the state, county, and program levels is greatly lacking. Given the high level of need to address data collection and reporting, which affects data quality, regular and frequent communication protocols need to be developed and deployed on a state-wide basis.

- **Many counties and programs are not using CalOMS data.** There is a mass underutilization of CalOMS data and outcome reports among counties and programs. This is limiting not only for enhancing data quality, but also for improving treatment services. Therefore, besides communication

about CalOMS data collection and reporting, use of the data and continuing communications about its use (e.g. CalOMS Tx Updates, CADPAAC workgroups, outcomes measurement, performance monitoring, etc.) is an integral part of the "data improvement effort."

METHODS

The information presented in this chapter is extracted from key informant site visit interviews conducted with county administrators and data management county staff and from surveys collected from county administrators and treatment programs. Information is also based on an independent review by UCLA statistical staff of the CalOMS data (collected for fiscal year July 2006 through June 2007 and current data as of December 2007).[91]

Data Instruments

The interviews and surveys included questions about the type of data software utilized to manage and submit CalOMS data, how CalOMS data is collected and entered, the processes and procedures used to ensure CalOMS data quality, and barriers to CalOMS data quality/validity. Where appropriate, a percent response is presented. These percentages are derived from close-ended survey data collected. Survey and key informant interviews also included open-ended questions. The results of these questions are presented in narrative form.

Procedures

County Site Visits

Based on recommendations from ADP and county administrators, 16 county site visits were conducted at locations representative of large, medium, and small populations in the northern, southern, and central portions of the state, including urban and rural locales. A team of two UCLA evaluation staff interviewed county administrator and data management staff at each participating county for approximately 1 ½ to 2 hours using a structured protocol with 40 questions.

County Surveys

A 41-item survey (designed to take 30 minutes to complete) was e-mailed to county administrators in all 58 counties using a Web-based survey tool called SurveyMonkey. Approximately 41 administrators completed the survey.

Program Surveys

A 68-item survey was e-mailed (using SurveyMonkey) and mailed to a random, stratified sample of 198[92] treatment programs in California selected from programs with five or more CalOMS admissions during the fiscal year July 2006 to June 2007 (data as of December 2007). The sample was representative of counties by size and treatment program type. A total of 104 program surveys were returned.

Data Analysis

Open-ended, qualitative interview and survey responses were analyzed using ATLAS.Ti software to identify key trends in responses. Quantitative data were analyzed using SurveyMonkey software.

The following themes were generated: data operating systems, data management processes, data monitoring, and barriers related to CalOMS data quality.

DATA OPERATING SYSTEMS: *Is there a systematic structure for CalOMS data collection and management?*

[91] This information supplements the ongoing comprehensive data validation processes currently in place by the state ADP.

[92] Some addresses were outdated for programs, hence of the 206 programs originally sampled was reduced to 198 programs for the sample

When CalOMS was initiated by the state (ADP), counties were given the responsibility of establishing their own data systems to collect CalOMS data. This resulted in much variability, as several different data systems were employed across the 58 counties. These presently include ECHO (13 counties), ECHO/Sharecare (3 counties), CSM/NetSmart (7 counties), FEI/WITS (4 counties), Cemer (1 county), In-House (8), RSS (5 counties), El Dorado Access DB (2 counties) LACPRS (2 counties), Kingsview (5 counties), Streamline Tech (5 counties), Uni-Care (2 counties), HealthSoft (1 county); 8 counties developed in-house systems. Although most treatment programs rely on data operating systems of their respective counties, some programs have created their own software programs to streamline data needed to meet various county/state reporting requirements.[93] A major consequence of having different data operating systems is the variability in the systematic structure of CalOMS data entry and data management, which can negatively impact data quality. Such variability also makes it very difficult to provide standardized trainings and technical assistance for CalOMS.

According to county administrators, "costs and resources" were the major factors influencing the type of data operating system selected. Many administrators feel that in retrospect, various implementation problems[94] experienced by individual counties could have been avoided had there initially been a state-run, universal system for CalOMS. However, given the resources (time and money) that have been invested in the county-based data systems, most administrators feel that any suggestion of a switch to a centralized system at this stage would be met with resistance. Some counties indicated that they are currently in the process of changing their data systems to accommodate the CalOMS requirements more efficiently.

DATA MANAGEMENT PROCESSES: *How is CalOMS data collected, entered and submitted at the county and local level?*

Data quality is largely affected by the way CalOMS information is collected and entered. The state ADP requires that all counties collect and submit CalOMS data for client admissions and discharges, as well as annual updates for clients in the same service for one year or longer. Upon implementation of CalOMS (in 2006), ADP provided counties with a general data collection protocol and data dictionary for CalOMS data;[95] however, because county (and some program) data systems vary, these materials are not necessarily relevant, particularly since the county-operated data systems collect information for a variety of entities other than CalOMS, thereby making counties and programs responsible for developing different data collection and entry procedures, as evidenced by the interviews and survey responses. As shown below, this has resulted in wide variability in CalOMS-related data management processes that have negative consequences on the quality and validity of CalOMS data.

CalOMS Data Collection and Entry

Data collection and entry procedures employed by programs vary tremendously. Approximately 76% of surveyed programs reported that they first record CalOMS data on paper forms and then manually enter the information directly into the computer at the program site. Other programs directly enter CalOMS data electronically into the county data system or collect the data via paper forms and then fax the forms to the county to be entered into the computer system. The latter situation typically occurs in smaller counties where technical resources, such as computer access[96] are limited. In instances where data is first collected on paper forms,[97] some providers expressed frustration with the fact that in most cases, CalOMS information on the form does not match the data entry fields of the computer program in which the information is later entered (i.e., the data fields are in different order or the wording of the question on

[93] Many programs are required to collect other measures in addition to CalOMS, such as the Social Functioning Assessment Scale, Addiction Severity Index Lite, and ASAM criteria.

[94] Some county examples of implementation problems included admission over writing discharge data as seen in all Echo system run counties. County data system (data storage warehouse) not matching admission and discharge forms used at the program level. County data system fields populating arrested when certain fields are left blank.

[95] CalOMS Input Data File Instructions are available to counties upon request.

[96] Some providers in small counties do not have the funds to purchase computers or they do not have sufficient access to the Internet.

[97] Paper forms are provided by the county as the state does not provide any standard admission or discharge CalOMS forms to counties given that CalOMS is uploaded and reported electronically.

the form is different from the computer-based entry screen). Additionally, the type of program staff who collect and enter CalOMS data varies, ranging from clinicians to administrative/clerical staff, with the majority being the latter.

Programs surveyed were asked to describe the data collection procedures for obtaining discharge information. Responses indicate wide variability and inconsistencies across programs in collection procedures. Approximately 75% reported asking discharge questions during the discharge interview. Many of the providers who did not collect discharge information during this interview entered in the needed data by using their knowledge of the client when they were last seen in treatment, referring to the client's chart, talking with other staff members, and/or "guesstimating" the data. One program stated that CalOMS information is collected only during intake and not at discharge. Since client interviews would seem to be the most precise means of acquiring "valid data,"[98] it is troublesome that a significant portion of program respondents reported using sources other than the client for entering in discharge information, as it calls into question the validity of the discharge data.

One measurement issue related to discharge status that greatly affects data collection is administrative discharges. Specifically, when a provider gives a client an "administrative discharge," only a subset of CalOMS questions are required and they can be obtained from admission information that does not require the client to be present.[99] Therefore, for a provider, an administrative discharge is much easier to accomplish since they do not need the client to answer the questions. The problem is that the subset of questions fails to give us data that can be used to assess changes in outcomes. Although some of the programs are answering the full set of required CalOMS discharge questions without the client present to be able to "report outcomes to their counties," this method raises ethical questions and compromises the validity of the data.

Results from county surveys indicate that 41% of county administrators are aware of these various data collection and entry problems and processes occurring at the program level, and voiced concern over the impact that they may have on the quality of the CalOMS data. A majority of administrators were troubled by the number of programs that have administrative/clerical staff entering CalOMS data, given that these staff are often unaware of the goals of data collection or have not been properly trained on how to collect and enter in CalOMS data. To address this concern, one county indicated that they are now requiring all contracted programs to designate only clinician trained in CalOMS data collection and entry to carry out these procedures to ensure adequate validity of CalOMS data.

CalOMS Admission and Discharge Assessment Forms

The admission and discharge assessments (paper forms and screen shots of electronic systems) used at the county/program level to collect (and enter) CalOMS data were examined for consistency in format and the types of questions/measures used. Based on this review, we found wide variability with respect to forms used across counties. An examination of these forms revealed several issues in terms of format that may affect the quality of the CalOMS data collected. For instance, several of the forms have boxes (where the interviewer marks the responses) that are not aligned with the associated questions. In other forms, the print is very small and the layout is crowded. There is also a large degree of redundancy between the items asked on one form (i.e., very similar types of questions in different places of the form). In addition, many forms include cumbersome skip patterns that are hard to follow. On many of the forms, the items are not numbered, which can create confusion during data entry. Among many of the counties that use paper forms to collect CalOMS data, there is little difference between admission and discharge forms. In some cases, some of the forms do not distinguish between an "admit form" versus a "discharge form," which can be problematic during data entry as the forms can be easily confused. Furthermore, the number of questions asked on each form across counties ranges from 56 to 206, which is related to the additional questions that counties collect for different funding and requirements, such as CalWORKS, DATAR, ASI, et. Together, these issues affect the facilitation of data collection and may contribute to data collection and entry errors and missing data.

[98] There are major data validity challenges associated with self-reported data as discussed in the section below.
[99] See Chapters 4 and 5 for further details on discharge status.

CalOMS Data Submission

Most providers surveyed reported that they are given a monthly deadline for submitting CalOMS data to their respective counties, with the reported deadlines varying between the 5th and 10th of each month for data collected in the prior month. Some programs indicated that this reporting deadline can exceed up to 45 days. In addition, some counties indicated that programs are given a 24- to 72-hour window to enter data for admissions and discharges. Although 60% of counties reported having a deadline for data submission, slow data reporting or non-reporting of data has been an issue for some counties. Survey findings indicate that factors affecting such reporting issues include counselor caseloads and inadequate understanding of CalOMS data measures and associated collection procedures. Providers reported that "caseloads are generally heavy and data submission falls down the priority list." According to survey responses from providers, "a main goal for most of the counselors is to see as many clients as possible, not collect, enter and submit CalOMS data."

DATA QUALITY MONITORING: *What are the processes and procedures used for ensuring the quality of CalOMS data system-wide?*

State Level

Systematic efforts are being made at the state level (ADP) to ensure the quality of CalOMS data. According to key informant interviews conducted with the information management staff at ADP, there are two key reports that were developed to monitor and manage CalOMS data quality. These reports include: (1) the Data Quality and Compliance Report, which provides summary and supporting metrics regarding the timeliness, completeness, and accuracy of CalOMS treatment data submissions, and (2) the Error and Submission Detailed Report, which provides record-by-record summaries of all errors encountered during CalOMS treatment data submissions. According to ADP staff, when counties submit CalOMS data to the state via the ITWS portal, each submission generates an error report. When data problems (i.e., errors) arise, counties are required to correct the problem within a certain timeframe in order to salvage outcome reporting. A process for addressing non-reporting is also used. Specifically, upon non-compliance, counties are sent a series of three letters. The first two letters serve as "warnings" to comply before further action is taken. The last letter notifies them that funds will be withheld until the county addresses the data problems and methodically complies with reporting.

County Level

As part of data monitoring and management process, each county has designated internal staff to oversee the operation of CalOMS data collection, management, and reporting. These staff interact both with an assigned ADP CalOMS liaison[100] and program staff to discuss CalOMS-related data questions and issues associated with collection and submission. All of the counties said they report CalOMS data to ADP on a monthly basis. Error rates among counties interviewed varied, with the average number of submissions rejected for various data quality issues (such as errors) by the state in a given month as high as 22%, which greatly exceeds the error rate that ADP allows (5%).

Many county data management staff indicated that they have internal county data monitoring processes in place that correct data errors before sending data files to ADP. Common data quality assurance activities include routinely running error checks and producing data completeness reports. In addition, county data staff reported that the data operating systems purchased from external vendors are supposed to, by design, have built in data quality assurance procedures, such as error check features (i.e., of data ranges or data completeness queries), although the capacity of most data systems to perform such procedures varies tremendously. Certain counties expressed frustration with specific software programs, such as Echo, that did not have adequate data quality assurance procedures in place during the initial implementation of CalOMS, which consequently impacted the quality of the CalOMS data. Other counties reported limitations with respect to the system having answer fields that accepts all responses (no message to indicate invalid entries), while others have configured the fields to accept only

[100] ADP liaisons are assigned to counties by data system vendor (system type).

valid entries. In addition, some counties indicated that certain systems do not notify users if a field is "case-sensitive" nor do they have mechanisms in place to prevent the user from going forward after an invalid keystroke. Counties with in-house data systems reported that they have information technology (IT) staff that routinely conduct and maintain data monitoring and management processes with CalOMS data. Some counties without software validation checks rely on their staff to manually check the data by scanning it visually.

Most counties interviewed indicated that they also implement data monitoring methods with their programs. All counties indicate that they have at least one designated county staff person (i.e., county monitor) who is responsible for answering questions about CalOMS data from providers. About half of the administrators (51%) surveyed stated that they have contacted their programs six or more times in the past year regarding CalOMS data submission problems. Some counties have regularly scheduled meetings (which ranges from weekly, monthly, or quarterly) with their programs where they share error reports and provide feedback about their CalOMS data submission problems. Some counties indicated that when they receive error reports from ADP, they send it to the specific programs that submitted the erroneous data and require them to correct the errors.

Program Level

When programs were asked about data quality monitoring efforts, many (80%) responded that they check their data for completion and correctness before sending it to the county. A large portion of respondents reported manually comparing the information on the paper forms to the entered data before submission. Only a few programs reported utilizing software programs that check for missing and/or incorrect fields. The frequency of these quality assurance procedures varied, with some programs reporting conducting quality checks twice a month, and others indicating generating "weekly error reports." The protocols utilized for these interim checks were not specified. The other 20% of programs indicated that CalOMS data is corrected only when the county monitor requests data changes. For instance, if the letters are not capitalized on a client's driver's license, an error report will be generated by ADP. The same issue affects California Department of Corrections and Rehabilitation (CDCR) numbers. Also, if the driver's license field is left blank but the issuing state is filled in, an error will be generated.

DATA MEASURES AND COMPREHENSION: *Are CalOMS data measures clearly defined?*

An issue that can greatly affect data quality and the validity of the information reported is the extent to which county and program staff understand CalOMS data measures (and acceptable responses). Based on interview and survey responses, there are very different levels of understanding and interpretations with respect to some of the CalOMS data elements across programs and counties.

Use of CalOMS Data Dictionary and User Manual

Awareness of the ADP-created CalOMS Data Dictionary and User Manual varied a great deal across counties and programs. According to survey responses, some county administrators stated that these materials have been very useful and that they have used them as training tools with their providers. They also indicated that these materials have helped with their data monitoring efforts to maintain CalOMS data quality. Survey responses, however, also indicated that some county and program staff "have never seen these materials." Others who have seen these materials reported that the CalOMS User Manual is not "comprehensive" in terms of how to collect and enter the data and that the data dictionary does not fully explain or detail definitions for some of the measures and how to collect them, such as discharge status. For instance, programs and counties indicated that there is inconsistency about the definition of "referral," such that some documents from ADP define a referral as being "ancillary, subsequent to treatment," whereas the Data Dictionary defines referral as being to another treatment provider.

Limitations Associated with CalOMS Measures

According to the CalOMS Treatment Data Collection Guide (version 1.0), the CalOMS data measures can be divided into the following data groups: administrative data related to the record type (admission,

discharge, or annual update); alcohol and drug use; client identification and demographic data; employment; criminal justice; medical/physical health; mental health; family and social; systems requirements; and transaction information. In total, there are 93 data elements collected by CalOMS.

Limitations with Existing Measures

A review of CalOMS data for validity and quality issues was conducted. In addition, questions about CalOMS data measures were assessed among county and program staff. There are also limitations associated with not being able to adequately assess treatment programs due to lack of data availability, completeness and representativeness.

Gender Measurement

CalOMS has three response categories for its gender measure: male, female and ”other.” The ”other” category can include responses that represent transgender clients, although such specification is not required when the ”other” option is selected.[101] Given that these special populations may have special treatment needs, it seems best to expand the ”other” category by either including a specific section or adding in special gender categories to select from. In TEDS, this measure only allows for the submission of 2 categories: male or female.

Race & Ethnicity Measurement

An area of confusion involves the ethnicity measure with respect to the appropriate categorization of “Hispanic” clients. As with the national TEDS data, the CalOMS measures of race and ethnicity are separate items, so that the item used to assess the client’s race does not include a “Hispanic” option. Rather, “Hispanic” is recorded in the ethnicity item. The consequences of this complexity is observed at the program level, as the majority of providers (over 65%) reported marking “Other” in the race question for clients who are Hispanic rather than indicating it under the ethnicity data field. This information indicates that providers need further clarification regarding the intended purpose of the two ethnicity and race items and, specifically, how clients who identify as “Hispanic” are to be coded.

Medical Health Measures

Existing CalOMS measures capture information for four communicable diseases: tuberculosis, hepatitis C, sexually transmitted diseases, and HIV. There are limitations related to protected health information when collecting these measures. For example, the measures on tuberculosis, hepatitis C, and sexually transmitted diseases asks, “Have you been diagnosed with…?” These measures only capture a “lifetime diagnosis” of these communicable diseases and do not provide information about the date of diagnosis, the current status and severity of the disease, and the type of sexually transmitted disease(s) the client has been diagnosed with. These questions also do not assess the extent to which the client is taking any medication for the communicable diseases indicated. The measure on HIV/AIDS asks two questions: “Have you been tested for HIV?” and “Did you receive the results of your HIV/AIDS test?” These questions are limited in that they do not provide information on the result of the HIV status of the client (i.e., positive/negative)? This is desired, but apparently not possible per HIV confidentiality requirements.

Mental Health Measures[102]

CalOMS has four questions that assess mental health status: “Have you ever been diagnosed with a mental illness?” “How many times in the past 30 days have you received outpatient emergency services for mental health needs?” “How many days in the past 30 days have you stayed for more than 24 hours in

[101]This may be considered sensitive data that some counties/providers may resist collecting. It should be noted that the numbers in the “other” category tend to be very small making statewide analysis limited. Also, due to a HIPAA related practice, almost all cross-tabulations for “other gender” are not reported by ADP. Further clarification on appropriate rules to protect the identity of individuals in relation to public documents using CalOMS data is needed.

[102]TEDS minimum data set collects information on whether there is a psychiatric problem at the time of admission, in addition to an alcohol or drug problem.

a hospital or psychiatric facility for mental health needs?" and "In the past 30 days, have you taken prescribed medication for mental health needs?" These mental health status measures are limited in that they do not provide information on the type or severity of the mental illnesses, the current status of a clinical diagnosis, or any associated suicidal symptomotology.

Furthermore, the item on "lifetime mental health disorder" does not provide a valid and reliable estimate of the proportion of clients presently considered to have a "co-occurring" serious mental illness. CalOMS data show that approximately 21% of client admissions report a lifetime diagnosis of a mental illness (see Chapter 2). However, previous work done by the SACPA evaluation shows that between 55% and 69% of individuals diagnosed with an alcohol and drug use disorder have also been diagnosed with a co-occurring mental health disorder. Given these issues, can we assume that differences reported between age groups (e.g., younger and older adults) are valid? Is the higher rate for older adults of a lifetime mental health diagnosis indicative of higher "co-occurring" prevalence or just related to the fact that the older adult has had more time to have a mental issue *sometime* in their life? The other three mental health measures (emergency room use, psychiatric facility use, and use of mental health medications) are limited in that they can pertain to drug use effects (psychosis) and may not necessarily represent mental illness in the clinical sense. Furthermore, these measures are not inter-related, in that clients can use mental health medications or a psychiatric facility without necessarily having been diagnosed with a mental illness.

Substance Use Measures

Although both primary and secondary substance use is captured by CalOMS, there is no clinical screening assessment on the extent to which use is considered abuse or dependence.[103] This lack of diagnostic screening can result in issues with the quality of the data as there is no control for variability in use among clients.

In addition, primary and secondary substance use measures do not allow the system to capture polydrug users (i.e., those who use more than one drug at a time as their primary drug). For example, a client may use methamphetamines together with marijuana as their primary drugs. The current system would not allow for entry of these two primary drugs, but rather requires that one be captured under the secondary drug. The assessment of multidrug dependence, as based on polydrug use among clients is important for tailoring programs specific to this drug-using population.

Information about alcohol use is collected on all persons entering treatment in order to measure the extent to which alcohol is used in addition to their primary/secondary drug; the question asked is "How many days in the past 30 days have you used alcohol?" If the client's primary or secondary use is alcohol, then a "not applicable" code (99902) should be entered in the data field. If the client's primary or secondary drug is not alcohol, then the question stated above is asked, which captures the client's use of alcohol. However, for a more comprehensive understanding of alcohol use initiation in general, an additional question that assesses the age at first alcohol use should be added.

According to the business rules of CalOMS, the primary substance use at admission should be the same primary substance used at discharge. According to programs, this is limiting for clients that may have changed primary substances during treatment or within a treatment episode where they have been in multiple treatments over a period of time. This business rule was also the case in TEDS up until this past year, where now the client's primary substance problem at discharge can be different from the primary code given at admission as the code should reflect the "actual situation of the client at discharge."

[103]TEDS minimum data set collects information on DSM Diagnosis via a five-digit diagnosis code for the substance abuse problem. The code is taken from the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM).

Although there are sufficient measures in CalOMS to capture the use of prescription drug use, the way it is collected varies. Upon examining the data entries for specific types of prescription drugs, it was found that the way the data is coded and collected is inconsistent (i.e., some are using incorrect codes and placing the responses in the wrong category and most are putting specific categories under "other" even if they have their own code). In general, results from the program surveys indicate that providers lack clinical awareness regarding the appropriate classifications of prescription drug categories. From a validity perspective, it is very time consuming to get to this data because you have to get an output of all the entries in the "other" and categorical fields, go through everything listed under each categorical or "other" field and reorganize it into categories to really get a sense of the actual use of prescription drugs. This will be further discussed in the CalOMS data validity section. CalOMS measurement of prescription drugs is limited as it does not collect information on the frequency of use if a certain prescription drug is not reported as "primary or secondary."

Other Important Measures

The following provides an overview of the feedback received regarding measurement limitations that are related to CalOMS data validity (in the sense of not being able to capture a holistic sense of the clients in the California treatment system).

Sociodemographic Measures

Many county administrators and ADP staff interviewed expressed that the current CalOMS measures lack important sociodemographic measures. Information on specific priority groups such as men who have sex with men (MSM) or lesbian and transgender groups are not collected in CalOMS. However, it should be noted that one of the big provider complaints is that such personal information is offensive to many people at first contact/admission. Asking people if they fit into any of these categories at admission could add to this concern.

Outcome Measures

Housing Stability. For priority groups, such as the homeless, data on length of time spent without shelter and the location(s) the client stayed during periods of homelessness are not measured. In addition, the incidence of "running away" among youth is not collected, limiting the information for this special sub-group.

Criminal Justice. The criminal justice measures do not capture domestic violence as related to substance use, or other violence and criminal related behavioral issues, such as vandalism, shoplifting, drug sales and manufacturing, forgery, burglary/larceny, robbery, assault, arson, rape, and homicide. Histories of physical and sexual abuse and trauma are also not collected in CalOMS.

Alcohol & Drug Use. The "age of first use" measure, an assessment of length of time the client has used a particular primary or secondary drug cannot be obtained, thus inhibiting the assessment of chronic use (length of use). A better assessment would include the age at which the primary problem drug was first used on a weekly basis or more, the age during which the client first entered a drug abuse treatment program, and the number of years the client has used the primary/secondary substance after first use. Data on the occurrence and/or frequency of drug overdose is also not collected with the CalOMS drug use measures.

All of these measures noted by county administrators and ADP staff are important indicators that not only capture useful information on the profiles of clients entering treatment, but also can be utilized to tailor treatment programs for priority populations with special needs. In addition, this information can provide a better description of the unique variability of clients in treatment throughout various programs and counties that may underlie differences in certain performance and outcome measures. However, the administrator focus groups were in agreement that adding any more measures would be met with both county and program resistance.

Issues with Self-Reported Substance Use

A major challenge to the validity of CalOMS data is the reliance on self-reports.[104] CalOMS does not capture biological measures or urine drug screens to validate self-reported substance use. There is a large literature that casts doubts upon the truthfulness of self-reported data collected among alcohol and drug users (Williams & Nawatzski, 2005). Biases in self-reported substance use are related to a variety of factors. In particular, the social stigma associated with "use" is assumed to provide a powerful disincentive to provide truthful reports, given clients' fears that their responses could be used against them, or the shame such responses can create (Hser, 1997). Harrell (1997) suggests that high levels of underreporting are particularly associated with the more stigmatized drugs, including heroin (Maisto et al. 1990; Morral et al., 2000; Zanis et al., 1994) and stimulants (Fendrich et al., 1999; Tassiopoulos et al., 2004) compared to less stigmatized drugs such as marijuana and prescription medications (Siddiqui et al., 1999).

Hser (1997) suggests that the accuracy of self-reported substance use varies by context or settings. There is evidence showing considerable underreporting by individuals detained by the criminal justice system (Farabee & Fredlund, 1996; Magura et al. 1987; Mieczkowski 1990; Wish et al., 1997), individuals awaiting treatment, and those who have completed or remained in treatment programs longer (Sherman & Bigelow, 1992; Winters et al, 1991).

Respondent characteristics have also been identified as a source of the compromises to the accuracy of self-reports including individual personality traits and psychological-cognitive states (Babor et al., 1990). For example, individual characteristics that have been shown to affect response errors include motivation to comply, cognitive ability, or memory failures (Del Boca & Noll, 2000), as well as not understanding the questions asked (Rouse et al., 1985; Alwin, 1991). Certain demographic variables, such as race, gender, and age have been associated with self-reporting bias (Siddiqui et al., 1999). For instance, some studies have documented issues in self-reporting among different ethnic groups. Specifically, researchers have shown that culture and acculturation influence the way respondents interpret or fail to answer certain questions (De La Rosa, 2000). For example, collectivist ethnic groups (i.e., Asian or American Indians) may feel shamed by substance use and tend to underreport (or not report) regular or frequent use at admission for fear of social stigma.

Performance Measurement

There are inherent characteristics of CalOMS data that challenge the development of effective performance measurement models. Presently, CalOMS data does not capture information on key performance measures identified to be essential for understanding treatment quality including initiation, engagement, client perceptions of care, use of evidence-based practices, cost effectiveness of treatment, or cultural competence of organizations and service delivery. Many of these performance indicators can be assessed via encounter data or other survey-type methods, which are currently unavailable in CalOMS. The "traditional" framework for evaluating alcohol and drug treatment services is to admit clients into a treatment system and conduct an admission assessment, allow them to get their "dose" of treatment (which may have very different meanings), discharge them upon completion of their respective treatment regimen, and conduct a discharge assessment. -This set-up does not allow for the assessment of encounter information, such as types of services received, dose, or amount of services received, and frequency of services received.

As shown from the program surveys, the type of treatments and therapeutic protocols and services delivered within program settings vary (especially by treatment type/modality). For instance, the specific meaning of "outpatient treatment" in California is not well known. It can be used to describe a single 1-hour, weekly group therapy session led by a peer counselor and attended by 30-40 individuals, with a "treatment plan" delivered by recovering peer counselors that has virtually no specific goals and progress benchmarks; or it can be used to describe an intensive package of individual, group, and family therapy delivered by a team of licensed professional therapists over a prescribed time period, with 3-5 weekly

[104]Although as discussed previously, client interviews seem to be the most precise means of acquiring valid data.

service visits and clear and specific treatment plans, and provision of urinalysis and breath alcohol testing. CalOMS data also does not allow for an assessment of which treatment facilities provide special services designed to treat priority populations, such as adolescents, clients with co-occurring disorders, criminal justice clients, persons with HIV or AIDS, pregnant or postpartum women, adult women, adult men, seniors or older adults, and other populations.

Discharge Measurement

Discharge measurement is an important indicator of program performance in terms of assessing program completion and the extent to which the client was referred to another level of care. Presently, according to the CalOMS Treatment Data Collection Guide, there are eight types of discharge status that a client can receive as listed below.

CalOMS Discharge Codes

1. Completed Treatment, Referred: includes clients who have completed treatment and who are referred. This discharge status may capture both clients referred to receive additional services in a treatment episode and clients referred to receive ancillary services such as job training or participation in a 12-step program.

2. Completed Treatment, Not Referred: includes clients who finished a treatment episode and were not referred for further service because they completed the goals of their treatment plan. This category may also include clients who finished a single treatment service as planned, but who were not referred for additional treatment or ancillary services by the provider.

3. Incomplete, Satisfactory Progress, Referred: this discharge status may capture clients who were responding very well to the service in which they were enrolled and were referred to receive a different level of service.

4. Incomplete, Satisfactory Progress, Not Referred: this comprises clients who were making good progress in their treatment, but stopped appearing for services prior to their planned discharge date.

5. Incomplete, Unsatisfactory Progress, Referred: this discharge status may capture clients who were not responding very well to the service in which they were enrolled and were thus referred to another program or to receive a different level of service.

6. Incomplete, Unsatisfactory Progress, Not Referred: this includes clients who were not doing well in treatment and left the treatment program on their own accord prior to completing their treatment as planned by the provider.

7. Death: this is also an administrative discharge category. This status captures clients who passed away prior to completing their treatment as planned by the provider.

8. Incarceration: this includes clients who stopped appearing for treatment because they became incarcerated prior to completing treatment.

Programs were asked to describe the process by which they select a specific discharge code upon discharging clients from treatment. Below is a summary of provider responses.

Completion

Survey results indicate that there are differences with respect to the way programs define and select "successful completion." The three most commonly cited reasons for giving a completion status[105] included: maintenance of sobriety, completion of treatment plans/goals, and continued participation in the treatment program (regular attendance). Other reasons cited from some treatment programs included: abstinence from alcohol and drugs for 30 days or more; participation in at least five or more group sessions; enrollment in a 12-step program; avoidance of criminal activity and/or incarceration; obtainment of housing, employment, or an educational degree; reunification with family; and knowledge of addiction pharmacology. A few programs indicated that completion for individuals involved in the criminal justice system was based on "pre-determined court orders or criteria." Some programs used much looser criteria, such as "when a client is ready to complete" or " when a client is strong and healthy." How these latter criteria were defined was not clear from survey responses. It should be noted that each program had their own unique combination of criteria that they used to determine whether their clients completed the program. For example, one program may have only used completion of treatment plans/goals as a

[105] The criteria used to determine the most common reasons cited were based on a frequency count of five or more for each selected response.

criterion for completion, while another program may have used participation (regular attendance) and maintenance of sobriety as criteria for completion.

Incomplete (Satisfactory vs. Unsatisfactory Progress)

Similar to results for program completion, survey results indicated a high degree of variability in the way programs define "satisfactory" and "unsatisfactory" treatment progress for when a client does not complete treatment. A frequency count was assigned to each reason given for the two discharge codes of: "incomplete, unsatisfactory progress" and "incomplete, satisfactory progress."[106]

Incomplete, Unsatisfactory Progress. The top five most frequently cited reasons for using the "unsatisfactory progress" code when a client does not complete treatment included: relapse, violation of program rules and other disruptive behaviors, non-participation in groups sessions or frequent absenteeism, failure to reach goals specified in the individual treatment plans, and circumstances under which the client quits or disappears from the program. While most programs defined these circumstances in general terms, a few programs assigned specific boundaries for the circumstance, such as relapse as defined by abstinence from drugs and alcohol for less than 30 days or absenteeism as defined by missing three or more group sessions. Other reasons mentioned for using the "unsatisfactory progress" code included engaging in criminal activity or incarceration, non-payment of fees, and inability to be treated by the program.

Incomplete, Satisfactory Progress. The top six most frequently reported reasons for using the "satisfactory progress" code for when a client does not complete treatment included: completion of the individual treatment plan, maintenance of sobriety throughout treatment, frequent attendance/active participation in treatment activities (group sessions), transferred to another treatment program, hospitalization or other medical conditions that disallowed client from completing the prescribed treatment plan, and obtainment of employment which conflicted with the client being able to attend treatment. A few programs gave very general examples, such as "client did not fully complete treatment regimen but made good enough progress," although "progress" in these cases was not clearly defined.

Referral

First, there seems to be no measurement of "transfer" in CalOMS. According to county surveys, many administrators indicated that a transfer code can be obtained for the intake OMS and that instructions obtained from ADP is that "it should be an open and close system." The option of referral however is included in discharge codes 1 through 6 as listed above. According to the survey results, programs use "referral" differently. Many programs indicated that they typically refer a client to another treatment program upon discharge, regardless of discharge code given, unless he/she does not want a referral or is not reachable (e.g., if the client is incarcerated or moves, disappears, or drops out of the program without notice). Some programs indicated that they only refer clients to other services based on special needs of the client (e.g., psychiatric or homeless circumstances) or aftercare recovery programs (i.e., Alcohol Anonymous).

The referral information associated with discharge status is problematic. The current referral measure does not distinguish the type of referral given (i.e., to another alcohol and drug treatment program, to a psychiatric or medical facility, to a housing unit, etc.), nor does it distinguish if a "transfer" was given. For example, many providers reported the following scenarios as examples of this issue: (a) if a client is in the criminal justice system and does not complete a service and is referred to the court, is that a referral? or (b) if a client is in treatment and the clinician determines that the person needs to change modalities, is that a referral?

[106] Although standardization of the completion definition is necessary, it may involve restrictions on treatment program flexibility in defining individual treatment plans, which may serve as a major consequence that must be weighed carefully against the advantages of standardization. It should be noted that key informants with ADP indicated that these codes were designed to be broad enough to allow for the different practices and philosophies across treatment programs, although as we have discovered, this flexibility can also result in threats to the validity of the data due to the lack of standardization across programs.

Administrative Discharge

According to the CalOMS User Guide and Data Dictionary materials, discharge status codes 4, 6, 7, and 8 all constitute administrative discharges. With the exception of "7" and "8" types of discharge (death and incarceration), "4" and "6" require information on three separate areas: completion, progress (satisfactory/unsatisfactory), and referral (*yes* or *no*). Survey results indicate that programs are giving "administrative discharges" under a variety of circumstances that do not necessarily represent the established criteria in the CalOMS user manual/data dictionary. The top six reasons included: violent or disruptive behavior, non-compliance with program rules, non-attendance, disappearance, continued use of alcohol and/or drugs, and institutionalization (incarceration or hospitalization). Other reasons mentioned included the sale and distribution of drugs on premises, sexual misconduct on premises, theft, possession of a weapon or illegal firearm, and death. Some programs mentioned issuing an administrative discharge when the client is not making progress or when fees were not paid. Follow-up efforts are mixed across programs. For instance, some programs reported that staff make multiple attempts to contact the client before administratively discharging them, although other programs reported that such efforts are not made because their programs are short staffed.

As illustrated by the survey results, there is a wide degree of variability and vast inconsistencies with respect to CalOMS discharge measurement at the program level. County administrators voiced concern over this issue, indicating that "this administrative discharge dilemma is different than a need to do an administrative discharge for other reasons like the clinic closes or the funding to pay for the service changes." They further indicated that despite the standard categories and explanations of what the discharge code refers to (in the CalOMS user manual/data dictionary), specific criteria or scenarios for applying these codes is not available; thus, the meanings and definitions given to these codes differ across programs. This variability can greatly impact the validity and quality of the CalOMS data. In order to avoid such data limitations, as with the completion code, other discharge status codes, including "administrative discharge" should be standardized with clear/concise definitions that are mutually exclusive using structured criteria for when to use such codes system-wide.

Future Efforts with CalOMS Measures

When asked about their feelings about "expanding the scope of the information collected in CalOMS to address current data limitations," several administrators remarked that while it is important, the existing CalOMS data requirements are already lengthy and that adding more questions would be burdensome to treatment programs. Specifically, administrators worried that having too many data measures may lead to data collection overload and fatigue, which can negatively affect data collection/entry, and thereby reduce the quality of the data produced.

Programmatic Barriers to CalOMS Data Quality and Validity: *What are some program related factors that serve to compromise CalOMS data quality and validity?*
This section explores the types of treatment characteristics that can negatively affect CalOMS data quality. Factors include: staff profiles, staff workload, staff turnover and training issues, and technical challenges. Findings will help to identify some of the programmatic barriers that challenge the quality and validity of CalOMS data.

Staff Composition
On average, most program staff surveyed indicated having a minimum of a 12th grade education or general education degree (GED), with few having postgraduate degrees (16%). County administrators expressed concern about the low proportion of clinical staff with advanced degrees and indicated that currently there are no standards used at the program level for assessing for or requiring clinical competencies for delivering addiction treatment. Several studies support that this situation is observed nation wide. Not only is there extreme variation in educational programs (curricula, degree programs) for substance abuse counseling certification, there are currently no national academic accreditation processes or national core competency standards for addiction treatment. While the majority of programs surveyed require their clinical staff to be licensed or certified in addiction treatment (83%), only 43% of

clinical staff were found to be licensed and very few certified (16%). Ten percent of these staff reported having both a license and a certificate. In addition, most programs do not have medically or psychiatrically trained staff available on-site. Competency in data collection and research methods was also fairly low, as most staff indicated technical inabilities and lack of research knowledge. These findings related to staff composition are concerning, given that addiction treatment and data is only as good as the workforce that delivers it. In other words, good treatment/data collection is dependent on the quality of the workforce in terms of its capacity to adequately provide care as well as collect treatment-based research data.

Staff Workload

Program respondents indicated a link between the data quality and staff workload, with many expressing concern about the burden of excessive amounts of paperwork and related fatigue among providers and how this poses barriers to data quality. The average time it takes program staff to collect CalOMS data for a client is approximately 30 minutes and is only one of many data mandates that are collected at intake. Other data mandates can include: the ASI, ASAM criteria, GAIN, DSM-IV screenings, MAST, DAST, BSAP, CASI, SASSI BDI, ASUS, CPS, YAI, HQ, and SSI.[107] Some programs indicated that the time-consuming nature of data collection and reporting interferes with clinical workload and time spent with clients. Given this challenge, many program staff may compromise the quality of the data since "clinicians want to do the service…counsel people…help people recover, not collect data." However, research shows that proper assessment, treatment planning, and outcomes and performance monitoring are needed to improve program efficacy. Further work is needed to help counties and providers understand and apply this research.

Staff Turnover & Training Issues

Staff turnover was another important issue raised by program staff that can affect the quality of the CalOMS data collected. In general, turnover rates in the field are high, ranging from 18.5%–33% a year (McLellan & Johnson, 2002). Because past addiction problems are commonly reported among surveyed staff—close to 60% of all program staff surveyed were in recovery from past substance use disorders—a better understanding of the extent to which relapse is a factor for low retention among treatment staff is needed. High rates of turnover require sufficient training in consistent data collection procedures, which in most cases is not provided. According to provider surveys, most training on data collection and reporting comes from internal programs, where providers are responsible for "training themselves on the CalOMS data system by reading the manual or instructions given by counties." In other words, consistent training is not provided from the county when new program staff are hired. Most administrators (80%) agreed that more training in data collection, entry, and reporting is needed in their respective counties to deal with the issue of staff turnover. Some counties are beginning to address the issue of staff turnover by tracking turnover and ensuring that proper CalOMS training is given. For instance, some are providing in-house training for new program staff or "refresher" training for older program staff upon system changes, while some have developed train-the-trainer training manuals and how-to guides for use at the program level.

Technical Challenges

The technical capacity of the program staff to interface with computer data collection systems is another area of concern for data quality. Many county administrators from medium- and small-sized counties reported that a high proportion of their provider workforce is computer illiterate. According to program survey results, technical challenges experienced among staff greatly contribute to the frequency of CalOMS data errors. Providers described several data entry challenges related to the data systems. A large portion of the providers (44%) reported difficulties interfacing with the computer software programs. Providers reported "slow" systems, especially during times when multiple providers were uploading data into the county data collection server system. Some software programs contain "glitches," such as erasing all data if corrections need to be made to only one section, thus requiring additional staff time for data re-entry and creating a further burden on existing staff resources. In addition, budget limitations

[107] These mandates are not consistent across counties.

were identified as an overarching barrier to implementing data quality assurance practices via investments in technical resources.

CalOMS Data – Validity of Data and Analysis Results

As substance abuse leaders continue to consider how to effectively evaluate the benefits of substance abuse treatment, it is increasingly important to examine the quality and validity of the data that is collected from treatment programs.

The state-housed CalOMS data acquisition system has several "built-in" validity checks[108] that maximize data validity; however certain data validity processes are not covered. As part of the CalOMS evaluation, we explored other checks that are not included in the CalOMS data acquisition system, including data completeness, validity checks for missing data, and range checks. These omissions are important to consider as they can compromise the quality of CalOMS admission and discharge data and affect the interpretation of results. The following results are based on CalOMS admission and discharge data collected during Fiscal Year 2006-2007. Detailed results are presented in Tables 1 and 2 at the end of this section.

Data Completeness[109]

During data analysis, data could be considered "missing" for several reasons: (1) the client refused to answer or declined to state an answer; (2) the client was unable to answer;[110] (3) the client was unsure or did not know the answer;[111] (4) the item was not applicable for the client (examples: frequency of secondary drug would not be applicable for a client who reported no secondary drug, or outcome variables were not collected where the discharge status was considered an administrative discharge); (5) the client gave an answer different from the response categories listed as valid codes; (6) the value was outside the range being considered for a specific analysis (e.g., age less than 12 years); and (7) the answer was in a category too small for valid interpretation of results (e.g., gender other than male or female). Reasons 1 through 5 above are typically given codes of “99900-99904” in the CalOMS data set. While such data elements are not technically "missing" (that is, an answer was recorded), cases with these codes contribute little to many analyses of admission characteristics, performance, or outcomes and thus have been omitted from analysis. For most analyses, admission cases were omitted for missing-data reasons only for the specific analyses that involved the item or variable with missing data; thus, no subsample was created that had complete data for all items/variables.

Table 1 gives the number of admissions (FY 2006-07) with data present and missing for analyses of admission records for selected administrative, sociodemographic, substance use, and treatment-related measures. The "missing" column indicates the number of cases omitted from analysis of the specific measure. Most cases were missing specifically because of reasons 1 through 5 above (i.e., labeled *no answer* for convenience in our discussion) unless footnoted in the Table. Footnotes indicate cases omitted from analyses for *other reasons* (reasons 6 through 7 above), in addition to *no answer*. The measures use the labeling and definitions described in Chapter 1 of the Final Report.

[108] According to CalOMS documentation, CalOMS data entry is restricted to valid codes for most variables (except open-ended items), with responses required for only some variables. When data are not complete, data records are not accepted by the system and must be revised before submission is complete.

[109] It should be noted that data completeness may be different for detoxification programs since “unable to answer” is allowed with clients in detoxification programs given that the stay is so short and the data collection effort for these clients is difficult.

[110] “Unable to answer” can also be used when a client reports a developmental disability.

[111] “Not sure” is only used with the Mental Health Question, otherwise it is only used in Administrative Discharge codes.

Table 1: CalOMS Data Item Completeness for Admission Analyses

Item	Missing		Present	
	Number	%	Number	%
Unique ID	7	0	168,677	100.0
Admission Date	0	0	216,781	100.0
Referral Source	0	0	216,781	100.0
Treatment Type/Modality	0	0	216,781	100.0
Gender	124[1]	0.1	216,657	99.9
Ethnicity	0	0	216,781	100.0
Admission Age	65[2]	0	216,716	100.0
Primary Drug	0	0	216,781	100.0
Secondary Drug	89,664	41.4	127,117	58.6
Polydrug Use	0	0	216,781	100.0
Primary Drug Past 30	0	0	216,781	100.0
Secondary Drug Past 30	89,664	41.4	127,117	58.6
Age First Use – Primary Drug	39[3]	0	216,742	100.0
Age First Use – Secondary Drug	127,117[4]	41.4	114,214	58.6
Route – Primary Drug	814[5]	0.4	215,967	99.6
Route – Secondary Drug	90,046[6]	41.5	126,735	58.5
IV Use Past 30*	23,113	10.7	193,668	89.3
Needle Use – 12 Months	56	0	216,725	100.0
ER Visits – Past 30*	22,315	10.3	194,466	89.7
Hospital Stay – Past 30*	22,332	10.3	194,449	89.7
Medical Problems – Past 30*	22,327	10.3	199,454	89.7
Tuberculosis	24,130	11.1	192,651	88.9
Hepatitis C	24,852	11.3	192,199	88.7
STDs	24,821	11.4	191,960	88.6
Lifetime Mental Illness**	1,552	0.7	215,229	99.3
Employment Status	0	0	216,781	100.0
Education	0	0	216,781	100.0
Jail Stay- Past 30	22,379	10.3	194,402	89.7
Prison Stay – Past 30*	22,440	11.4	194,341	89.6
Arrest – Past 30*	121	0.1	216,660	99.9
Parole	22,384	10.3	194,397	89.7
Social Support	0	--	216,781	100.0
Child Status*	22,458	10.4	194,323	89.6
Young Child (<5yrs) *	22,463	10.4	194,318	89.6

Examples of types of reasons for missing data for *selected* items:
[1]Responses of *other* (*n* = 124) were excluded from analysis. There were no cases missing because of "no answer."
[2] Ages less than 12 years (n = 65) were excluded from analysis.
[3] 39 (.01%) had no answer.
[4] 89,664 (41.4%) had no answer (no secondary drug)

[5] Responses of *other* (*n* = 814) were excluded from analysis.
[6] Responses of *other* (*n* = 382) were excluded from analysis, 89,664 (41.4%) had no answer (no secondary drug)
*Data completeness for these items may be greatly affected by "unable to answer or declined to state" responses that are typical of clients who are in detoxification programs or have a developmental disability.
**Data completeness for this item may be greatly affected by "Unsure/don't know" response that is allowable for clients who respond to the lifetime mental illness question.

Creating Treatment Episodes and Issues

Changing the way we conceptualize addiction—to that of a chronic illness—entails changing the way we evaluate its treatment—that is, under a continuum of care framework. Drug treatment effectiveness research has been negatively impacted by, among other things, the small and often short-lived effects of most treatment approaches when examined in terms of a single treatment episode. The measurement of drug addiction as a chronic health problem that cycles through repeated treatment episodes is lacking. Evaluating treatment for drug addiction under a chronic illness framework is useful for highlighting the importance of longitudinally examining the cumulative effects of drug abuse treatment on drug use and health related outcomes over an extended part of a client's life. A logical assumption under a chronic illness model is that drug treatment effects may be cumulative across episodes. However, to date, there has been little systematic study on such incremental gains and cumulative treatment effects across multiple episodes. Thus, scientific understanding of long-term patterns of drug abuse and treatment effects is incomplete, and knowledge about the interplay between drug abuse patterns and service system utilization remains fragmentary.

This evaluation utilized treatment episodes as the primary unit of analysis for performance and outcomes assessment (results are presented in Chapters 4 and 5). The CalOMS system identifies records belonging to episodes, and the current evaluation used the assigned episode identifiers to distinguish episodes. See Technical Notes in Chapters 4 and 5 for more detail on the creation of treatment episodes.

For these analyses, a treatment episode represented a more-or-less continuous period of treatment service(s).In the simplest case, when a client utilized only one type/modality of service, an episode consisted of a matched admission and discharge pair of records in the CalOMS data system. When a client was receiving more than one type/modality of service at the same time, overlapping in time period or sequentially (with gaps of 30 days or fewer between one discharge and a subsequent admission), then the episode consisted of more than one matched admission and discharge pair of records. Fifteen percent of the episodes included more than one admission-discharge pair of records; additional detail is given in Chapter 4.

We utilized the ADP-assigned episode code number to identify sets of admission and discharge records representing episodes ending in FY 2006-2007. A few episodes were omitted from potential analysis for problems such as more than one client identifier associated with the same episode number (*n*=1,772). If a client had more than one episode ending in FY 2006-2007, then the one with the earliest ending date was selected for analysis. If a selected episode had more than one discharge record for the same ending date, then a series of programming steps identified a single discharge record to represent the end of that episode (approximate *n*=900); a similar process was applied if an episode had more than one admission record for the same beginning date. Other approaches could have been used, but because numbers of problematic cases were extremely small, alternative decisions should have had little impact on interpretation of results.

Decisions relating to "how far back in time" to go to identify the beginning of an episode may affect retention and outcome results. For our analyses, we included episodes (ending in FY 2006-2007) that had a beginning admission record in the CalOMS data set. Initial admission dates for 8.6% of the episodes occurred before January 1, 2006. While there may be some concern about use of CalOMS data from prior to that date, omitting episodes that began before 2006 would have the effect of biasing the results toward shorter episodes. For example, we conducted a sensitivity analysis omitting the 8.6% episodes beginning before 2006. Retention averaged 91.4 days, with a range from 0 to 544 (compared to

140.7 days for the full episode sample). Considering outcomes, we found that any primary drug use in the past 30 days declined from 65.1% to 37.8% (compared to 65.0% to 36.1% using the full episode sample). It is likely that such bias would affect results more for clients participating in typically longer duration treatment programs (e.g., NTP maintenance) than for shorter duration treatment. It also may under-represent clients whose treatment episode was one of continuing care through a sequence of appropriate types/modalities of treatment.

Unit of Analysis

Interpretation of results must consider the unit of analysis, for example, admissions or discharges, unique clients, service sets, or treatment episodes because each approach may give a slightly different perspective. For instance, because there is administrative impact of handling admissions (e.g., each admission requires data collection and entry), analysis of admissions can give an overall picture of the treatment system. However, since some clients have more than one admission record within a given time period, a picture of the characteristics of unique clients may require the de-duplication of admission records so that a client counts only once. For example, 168,677 individuals contributed 216,781 admission records for analysis for FY 2006-2007. Analyses in Chapters 1-3 were based on admissions (not unique clients).

Furthermore, in order to assess performance and outcomes from a continuous care approach, we needed data from both admission and discharge collected on the same individuals across treatment type/modalities over time. The CalOMS system defines a *service set* as a matched pair of admission and discharge records for a specific type/modality of service. A sequence of service sets (overlapping or contiguous) of continuing care constitutes an *episode* of care, which may include more than one type/modality of service. If one wants to assess performance or outcomes for specific service types/modalities, ignoring the context of continuing care, then “single” service sets may be the appropriate unit of analysis. However, if one considers treatment from a continuing care paradigm, then the “treatment episode” (i.e., multiple service sets) may be the appropriate unit of analysis. Taking either approach, analyses can include all those identified, or analyses can de-duplicate such that only one unit is selected for each client within the specified time period. Because of this potential issue in data quality, our analyses in Chapters 4 and 5 were based on *episodes*, de-duplicating using the earliest discharge in FY2006-2007 to produce a sample representing unique client episodes. Under these circumstances, performance measures such as continuity of care and retention could be calculated for all episodes in the analysis sample; although because outcome measures require discharge assessment to be complete, analyses for episodes ending with "administrative" discharge status could not be calculated. Therefore, in our evaluation, outcomes were assessed for a subset of episodes.

Table 2 includes detail for analyses that explored results on certain sample characteristics using three different approaches (admissions, episodes, and episodes with non-administrative discharge status) to highlight how results may differ. As shown, for the most part, characteristics were fairly similar for the admission sample and the episode sample. In addition, assessment of service sets also produced results nearly identical to the episode sample (hence, they are not shown in Table 2). However, differences appear between the two episode samples. The non-administrative discharge sample (used for outcomes analyses) has a slightly greater percentage of White/non-Hispanics, with some under-representation of ethnic minority groups (except for American Indian). The non-administrative discharge episode sample is somewhat less severe in terms of substance use characteristics and under-represents outpatient treatment. Additional comparison of the non-administrative discharge episode sample to episodes with administrative discharges appears in the Technical notes for Chapter 5.

Table 2: Sample Characteristics for Different Units of Analysis

	Admissions (*n* = 216,781)[1]		Episodes (*n* =154,414)[2]		Episodes with non-administrative discharges (*n* =85,310)[3]	
Admission Data	***N***	**% or mean**	***N***	**% or mean**	***N***	**% or mean**
Gender						
Male	139068	64.2	99395	64.4	55122	64.6
Female	77589	35.8	54922	35.6	30141	35.3
Other	124	0.1	96	0.1	46	0.1
Race/Ethnicity						
White/Non-Hispanic	94159	43.4	67747	43.9	40058	47.0
Hispanic	73437	33.9	52971	34.3	27453	32.2
Black/African American	33003	15.2	22251	14.4	11351	13.3
Am Indian/Alaska Native	3355	1.6	2405	1.6	2261	2.7
Asian/Pacific Islander	5241	2.4	3777	2.4	1336	1.6
Other	7586	3.5	5256	3.4	2847	3.3
Age Groups						
12-17yr	18938	8.7	14212	9.2	6455	7.6
18-24yr	33715	15.6	25178	16.3	13406	15.7
25-34yr	54315	25..1	38937	25.2	21664	25.4
35-44yr	56317	26	40179	26	23028	27.0
45-54yr	41792	19.3	28243	18.3	16289	19.1
55+yr	11639	5.4	7624	4.9	4444	5.1
Average Age	216,716	34.9	154,373	34.4	85309	35.1
Primary Drug						
Heroin/other opiates	40405	18.6	26506	17.2	12626	14.8
Alcohol	42795	19.7	29904	19.4	18409	21.6
Cocaine/crack	23243	10.7	15983	10.4	9088	10.7
Meth/amphetamine	76245	35.2	56229	36.5	32176	37.8
Marijuana	31243	14.4	23716	15.4	11881	13.9
Other	2850	1.3	1904	1.2	1034	1.2
% with Primary Drug Use in Past 30 Days						
Heroin/other opiates	33007	81.7	22134	83.6	10321	81.8
Alcohol	30531	71.3	21545	72.1	13484	73.3
Crack/cocaine	13994	60.2	9784	61.2	5651	62.2
Meth/amphetamine	41088	53.9	31617	56.2	17491	54.4
Marijuana	18918	60.6	14756	62.2	7112	59.9
Other	1456	51.1	1033	54.3	547	53.0
Mean Days of Primary Use in Past 30 Days						
Heroin/other opiates	40405	19.1	26477	19.3	12625	18.4

Alcohol	42795	11.2	29897	11.2	18403	12.4
Cocaine/crack	23243	8.2	15982	8.2	9087	9.0
Meth/amphetamine	76245	6	56214	6.2	32169	6.4
Marijuana	31243	7.5	23704	7.5	11875	7.2
Other	2850	7.8	1901	8.1	1032	8.0
Injection Use - Past Year						
No	170492	78.7	122963	79.8	69576	81.7
Yes	46233	21.3	31223	20.2	15606	18.3
Treatment Type/Modality[4]						
Outpatient[5]	126858	58.5	92323	59.8	46482	54.5
Residential<30 Days	3415	1.6	2472	1.6	1874	2.2
Residential 30+ Days	37575	17.3	26730	17.3	17339	20.3
Detoxification	25474	11.8	17291	11.2	13173	15.5
NTP Detoxification	10153	4.7	6911	4.5	3152	3.7
NTP Maintenance	13306	6.1	8612	5.6	3243	3.8

[1] admission records for FY2006-2007 (basis for Ch.1-3)
[2] episodes ending in FY2006-2007 (if >1 for a client, then earliest one selected) (basis for Ch.4)
[3] episodes ending in FY2006-2007 which had a non-administrative discharge status (basis for Ch.5)
[4] for the 2 episode samples, modality is for the first admission in the episode
[5] outpatient includes both outpatient/treatment recovery and intensive day

Table 3 shows differences in the performance measure of retention across different approaches (unit of analysis samples): service sets, episodes, and episodes with non-administrative discharges. As would be expected, retention is shorter when calculated from service sets as opposed to continuing care episodes, of which about 15% included more than one service set.

Table 3: Comparison of Retention for Different Units of Analysis

	Service Sets (*n*=155,043)[1]		**Episodes (*n*=154,414)[2]**		**Episodes with non-administrative discharges (*N* =85,310)[3]**	
Retention						
Average (days)	126		154		141	
Median (days)	60		93		75	
% with retention<60 days	49.6		45.0		37.1	
% with retention>=60 days	50.4		55.0		62.9	
% with retention<90 days	59.2		54.7		45.7	
% with retention>=90 days	40.8		45.3		54.3	
	Service Sets		**Episodes**		**Episodes-- non-adm dischg**	
Retention by Tx Type/Modality[4] (average, median days)	**Average**	**Median**	**Average**	**Median**	**Average**	**Median**
Outpatient[5]	138	91	149	107	194	153
Residential<30 Days	21	17	38	26	38	27

Residential 30+ Days	59	76	93	71	111	90
Detoxification	8	5	23	7	22	7
NTP Detoxification	48	18	72	20	67	20
NTP Maintenance	467	172	524	213	627	289

[1] service sets ending in FY2006-2007 (if >1 for a client in FY06-07, then service set with earliest ending date selected). Service sets were not used for analysis in Chapters 1-5, but are given here for comparison.
[2] episodes ending in FY2006-2007 (if >1 for a client in FY06-07, then episode with earliest ending date selected) (basis for Ch.4)
[3] episodes ending in FY2006-2007 which had a non-administrative discharge status (basis for Ch.5)
[4] for the 2 episode samples, modality is for the first admission in the episode
[5] outpatient includes both outpatient/treatment recovery and intensive day

Calculated Variables and Outliers

For most variables, the CalOMS system constrains the values that are entered to the acceptable range of values or categories. For example, the number of days of primary substance use in the previous month is allowed values of 0 to 30 or designated values indicating no primary drug or not applicable. However, retention was calculated for the analyses by subtracting the admission date at the beginning of the episode from the episode discharge date. For 8 episodes, this calculated value was less than zero (the last discharge date preceded the first admission date of the episode). Such discrepancies might arise from an incorrect date being entered for either admission or discharge record. Because this can cause data quality issues, these episodes were omitted from analyses. Moreover, given the negligible frequency of these episodes, their removal from analyses should not pose a problem in interpreting results.

Another potential problem with the calculated retention variable is large values indicating particularly long retention. While some of these cases may be valid, others may arise from errors in the entry of admission or discharge dates or from administrative issues in designating a formal end of treatment or recording a discharge for clients who drop out of treatment. Given the difficulties associated with distinguishing invalid outliers, we did not omit any episodes from analysis for lengthy retention. However, sensitivity analyses may be needed to rule out outlier issues. As explained in Chapter 4 technical notes, we did perform a sensitivity analysis to examine the effect of omitting certain outliers. Results from this indicated that retention for only 1% of episodes was longer than 1,095 days. As an exploratory procedure, we applied a set of suggested ADP outlier criteria to the approximately 85% of episodes with only a single service set, with the result that 1,417 of the 154,414 episodes would have been omitted from analyses of retention. With these exclusions, the overall average retention would have been 136.3 days (instead of the 140.7 days based on all episodes). Even with these omitted outliers, there is still a wide range of days that clients remained in treatment; for example, 0.8% of the episodes still have retention greater than 1,095 days, but a substantial majority of these include NTP maintenance service which by their nature can have lengthy retention.

Substance Use Categories and Prescription Drugs

Many analyses conducted on primary substance (throughout Chapters 1 through 5 of the Final Report) have used a simplified categorization scheme for parsimony (instead of using all 20 specific coded types of drugs as collected by CalOMS or other types individually specified). For our categorization, we have combined substance/drug types into functional categories, by postulated neuro-physiological effects, prevalence, and drug culture, which research has shown may impact treatment needs and outcomes. Of course, there are many other categorization schemes that would allow focus on other issues, such as implications for interdiction, social costs, emerging drug problems, etc.

Preliminary examination of the CalOMS data suggests that there may be some level of unreliability in the reporting or recording of primary/secondary substance type for the less

frequently occurring categories, including prescription drug classes. The major categories of alcohol and controlled illicit substances (cocaine, heroin, methamphetamine, marijuana) appear easier for clients to identify and for treatment providers to record accurately. However, substances in less frequent categories (prescription drug classes), are less clearly defined and/or identified. Considering that new medications frequently come on the market and that drugs may be identified by clients by brand name, generic name, chemical name, street names—and that these can change over time—it is difficult for a provider to accurately record these drug classes.

Below are some examples of data quality issues associated with less frequently occurring categories (prescription drug classes), based on an examination of the "write-in" drug names allowed for several of the categories. A motivation for this assessment was the current concern about the emerging problems associated with prescription drug misuse, either through individuals' abuse of their own prescription medications or the diversion of prescription medications. CalOMS does not categorize primary or secondary substances specifically for "prescription drugs"; however, several drug categories may include drugs controlled through prescription. CalOMS categories that may include prescription drugs, include “barbiturates,” “other sedatives or hypnotics,” “other amphetamines,” “other stimulants,” “tranquilizers (benzodiazepines),” “other tranquilizers,” “oxycodone/OxyContin,” “other opiates,” and “other.” Please note that numbers are approximate for the examples provided below.

1. Of the approximately 250 admissions with primary drug listed as "other amphetamines" in FY 2006-2007 CalOMS data, approximately 40% had "write-in" specific drug names clearly indicating that they should have appeared in the methamphetamine category (e.g., "crystal," "ice," "meth"), 3% should have been categorized into other categories that include prescription drugs (other sedatives/hypnotics, benzodiazepines, or other narcotics/opiates; 1% should have been in other illegal drug categories (heroin, cocaine); 13% were detailed as generic "amphetamines," unspecified, or unknown (thus, possibly not prescription drugs).

2. Of the nearly 300 admissions listed as "other stimulants," 5% should have been in a specific illegal drug (non-prescription) category (methamphetamine, marijuana, cocaine, heroin, ecstasy); 70% were caffeine or nicotine (clearly not prescription drugs); and 2% should have been in another, possibly prescription, drug category (e.g., benzodiazepines or other narcotics/opiates).

3. Of the approximately 3,500 admissions listed as "other narcotics/opiates," 4% should have been recorded in specific illegal drug (non-prescription) category (e.g., heroin, cocaine, methamphetamine, ecstasy); 5% were for "opium" (a controlled substance, but not a prescription drug); 6% should have been counted in another, possibly prescription, category (most of these were "oxycodone/OxyContin"); and 6% were listed as "unknown," "pills," or "other opiates." Because, oxycodone/OxyContin is one of the most easily identifiable categories (only a single narrow class of drugs), it is concerning that the CalOMS category under-represents the misuse of this drug, since this drug name appears as the written-in identified drug in other CalOMS categories (e.g., in "other opiates" or "other drugs" categories.

Given these data quality issues, cautious interpretation of specific numbers of admissions for these less frequent categories is necessary. Typical levels of unreliability in any reporting system may have greater impact on categories with small prevalence (e.g., a few errors in classifying a primary substance such as methamphetamine makes little difference in the interpretation of methamphetamine statistics, but a few errors in one of the less frequently occurring categories may affect interpretation).

Missing Outcome Data associated with Discharge Status Measurement

Outcome data are not collected in the CalOMS database for "administrative discharges," that is, discharge records with discharge status of "left before completion with satisfactory progress/not referred," "left before completion with unsatisfactory progress/not referred," death, or

incarceration. Because of this, analysis of outcomes cannot include client episodes with such discharge codes, inviting the question of whether potentially worse outcomes are not adequately represented for such clients that drop out of treatment and do not provide outcome measures. In light of these data quality issues, it is important to provide some context for interpretation of outcomes that are based on only a subset of episodes. To address this, we compared admission characteristics (from the first admission record in the episode) between episodes ending with an administrative discharge and those with other types of discharge status. Detailed results appear in the Technical Notes of Chapter 5 that suggest that outcomes analyses should be interpreted within a context of possible bias through underrepresentation in the outcomes data set (i.e., non-administrative discharges) of most minority groups, younger age groups, those with more frequent use of primary drug in the 30 days prior to treatment, IV users, self-referrals, and outpatient treatment clients. Heroin users are also substantially underrepresented.

CHAPTER 8: RECOMMENDATIONS TO IMPROVE CALOMS

Introduction

As part of an effort to understand substance use disorders, and account for and improve treatment services in California, the Department of Alcohol and Drug Programs (ADP) implemented the California Outcomes Measurement System (CalOMS) in 2006. CalOMS systematically monitors treatment across all publicly-funded programs throughout the 58 counties. Information collected in CalOMS can be used by the state to set system wide treatment priorities and make policy changes for improved treatment, as well as by counties and programs to enhance and inform service delivery for successful client outcomes. Overall, the data from CalOMS will allow ADP, county administrators and treatment providers to develop empirical information that can help to guide effective clinical practice, and enable a better documentation of the benefits associated with publicly funded treatment in California.

After one-year of implementation, the University of California Los Angeles (UCLA) Integrated Substance Abuse Programs (ISAP) group began an in-depth evaluation of the functioning of the CalOMS data system to be able to effectively:

- Use CalOMS data to improve knowledge of AOD treatment services in California (*Objective 1*).
- Enhance the capability of county administrators to use CalOMS data to improve treatment service (*Objective 2*).
- Evaluate the quality and validity of CalOMS data (*Objective 3*).

Based on key finding[112] from the CalOMS evaluation, the following recommendations[113] were developed to improve the CalOMS system (*Objective 4*).

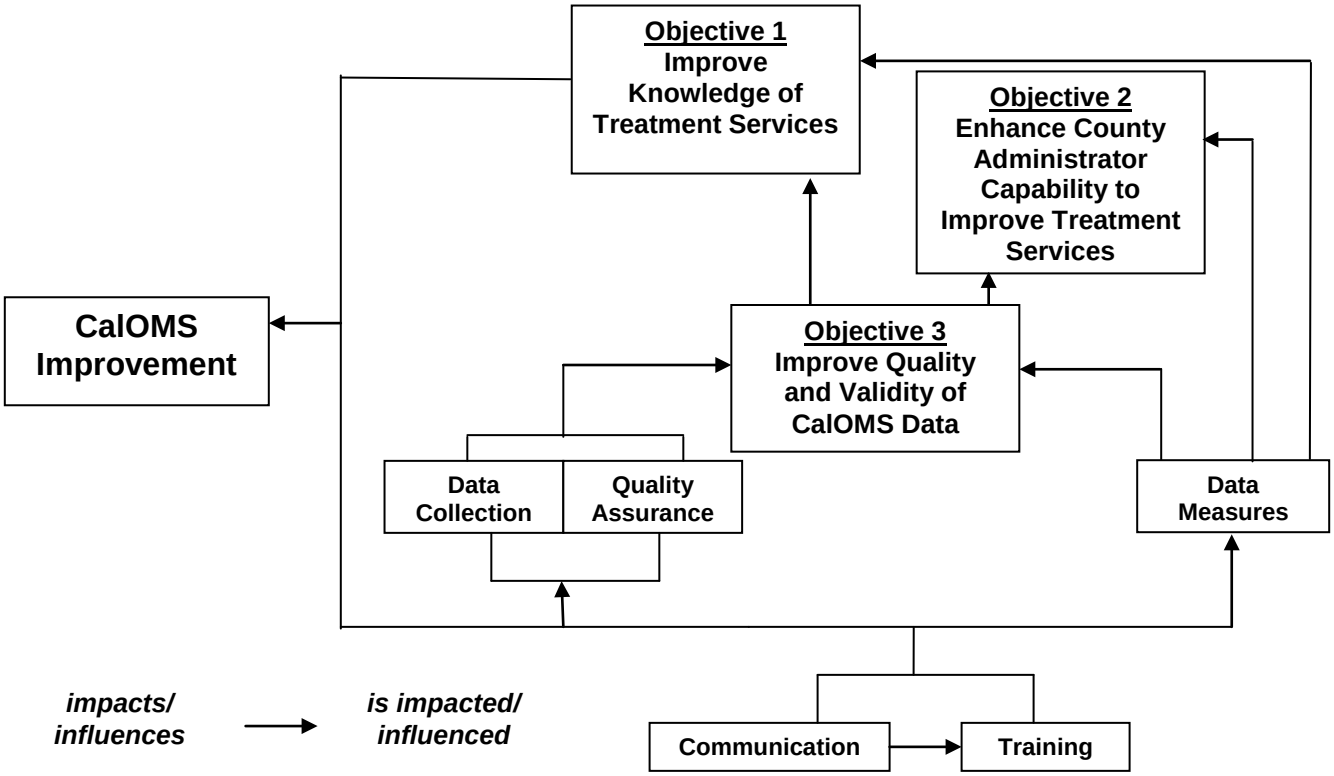
1. Implement a strategic plan for ongoing evolution, development, improvement and application of CalOMS.
2. Institute standardized data collection protocols governing the implementation of CalOMS.
3. Improve coordination of data quality assurance processes.
4. Enhance communication protocols.
5. Develop ongoing training and technical assistance to support CalOMS initiatives.

These recommendations are based on critical factors driving CalOMS improvement as displayed in Chart 1: data measures, data collection protocols, quality assurance processes, communication, and training. As shown in the Chart, these factors interrelate, hence addressing the five recommendations listed above responds to the core evaluation objectives, which together, are intended to “improve CalOMS.”

[112] Key evaluation findings are discussed in Chapters 1 through 7 of the Final Report.

[113] The recommendations and suggested actions are intended to be reviewed, approved, and implemented by State ADP leadership.

Chart 1: Factors Related to CalOMS Improvement Initiatives



Key Recommendations

This section presents a detailed summary of the key recommendations with suggested actions to address them. Under the recommended sections is a list of corresponding data tables and other references that provide more detailed information associated with the recommendation.

Recommendation 1: **Implement a strategic plan for ongoing evolution, development, and application of CalOMS.**

CalOMS is an evolving management tool of the treatment system that needs periodic review and adjustment to meet new needs (e.g., new drug problems and trends, introduction of new measures for evaluation, changing views of the way addiction is conceptualized and treated, etc.) and changes in measurement policy regulations (i.e., updated federal performance and outcome measurement and reporting requirements). Therefore, continued refinement and enhancement of CalOMS is needed in order to provide an adequate assessment of AOD treatment in California.

Suggested Actions:

1.1 Develop a CalOMS advisory committee. An important element in the plan to improve CalOMS is the development of an advisory committee that is responsible for overseeing CalOMS improvement initiatives that can serve to guide ADP with future decisions related to the direction of CalOMS. The composition of this advisory committee should represent county administrators, possibly appointed by County Alcohol and Drug Program Administrators' Association of California (CADPAAC), key stakeholders from treatment provider organizations, academic and scientific expert consultants, as well as other federal, state and local leaders in the addiction treatment field. It is suggested that periodic meetings (i.e., annually) be scheduled to review and discuss CalOMS improvement initiatives.

1.2 Develop a subcommittee to conduct periodic evaluation of CalOMS. Ongoing evaluation activities should be an integral part of CalOMS improvement efforts. For adequate assessment of the functioning of the system, evaluation activities should be conducted bi-annually in collaboration with an academic university or other research-based partners. The following two processes should be integral parts to the evaluation of CalOMS:

- ✓ **Implement ongoing process evaluation for CalOMS improvement.** Process evaluation will help determine whether or not the CalOMS system is being implemented "as planned" and can identify processes that either hinder or enable the proper functioning of the system. Key indicators of process include such things as extent of data measurement errors, adequate application of data measures and collection protocols, and extent of data quality processes being implemented at the county and program level.
- ✓ **Maintain data analysis to inform CalOMS improvement initiatives.** In conjunction with ADP's Office of Applied Research and Analysis (OARA), an academic or research-based collaborative should be maintained in order to postulate and explore data-driven questions/hypotheses, as well as apply the latest analytical techniques to address those questions. Continued data analysis activities can help to understand measurement limitations of CalOMS data, identify treatment trends, shape future development of critical performance and outcome measures (e.g., treatment episodes), and inform the development of data benchmarking models.

1.3 Develop a subcommittee that oversees CalOMS measurement and periodically reviews and updates CalOMS measures. The subcommittee would discuss suggestions for measurement addition, removal, and/or refinements based on system-wide goals for treatment and ensure that CalOMS measures are aligned with national measurement standards. Decision-making about CalOMS measurement will be based on the periodic evaluation and continued data analysis as described in 1.2. The following measurement areas should be considered critical measurement improvement initiatives:

- ✓ **Develop statewide treatment goal outcome standards and identify a core set of outcome measures**. Presently CalOMS captures information on key outcome domains/measures that are recognized as important, as evidenced by their inclusion in the Substance Abuse and Mental Health Services Administration's (SAMHSA) National Outcome Measures (NOMs). A critical step in implementing an effective outcome and performance monitoring system is the development of treatment outcome standards against which client outcomes and program performance can be measured. Over the past three decades most substance abuse treatment programs have focused on drug and alcohol reduction/abstinence; reduced criminal activity; and increased productivity by way of employment as the primary outcome goals of treatment. It is important, however to take into consideration the changing views of addiction and its treatment - view of addiction as a "health problem" that should be treated along a continuum of services model. Thus, while the historical outcome measures should be maintained, an emerging top priority in the treatment of substance use disorders is identifying outcome measures that more appropriately fit the new paradigm (e.g., greater use of health and functional status measures as appropriate for the management of a chronic illness).

- ✓ **Identify and adopt appropriate performance measures for different treatment services**. Performance measures were not specifically considered at the time of CalOMS development. [114] This omission greatly limits the ability to answer important program performance questions, such as how are program's engaging clients? Are program's transferring clients to appropriate levels of care? Are programs using evidence-based treatment practices and models? Is treatment delivered by certain programs cost effective? Are clients satisfied with certain treatment programs? There are existing efforts in the field on performance measurement that should be considered when attempting to determine specific performance measures, including the Washington Circle and the National Quality Forum.

- ✓ **Improve and standardize discharge measurement.** [115] Discharge codes need to be mutually exclusive and have clear definitions of application. For instance, "referral," "completion," and "satisfactory" vs. "unsatisfactory" progress should be clarified. Possible solutions include: 1) clearly distinguish categories by separating out "referral" into its own category of data collection; 2) develop additional categories that clearly distinguish when a "transfer" is occurring for either a change in referral or funding source [116]; 3) develop a category that indicates if a client is "unavailable" for discharge and link this to administrative discharge; and 4) consider revising discharge measurement to reflect federal guidelines established for the Treatment Episode Data System (TEDS).

- ✓ **Consider enhancing CalOMS descriptive measures.** As part of the periodic review of CalOMS, the subcommittee on data measures can determine whether new descriptive measures are needed. The types of descriptive data not currently captured in CalOMS include, for example client level information includes: sexual orientation, housing or shelters for homeless and incidence of youth runaways, history with and/or incidence of domestic violence, specific types of criminal behaviors among clients with criminal justice involvement, need for treatment services, as well as treatment level information: types of specific treatments available to treat special populations, clinical staff to client ratios, clinical and administrative staff turnover, specific types therapeutic approaches offered, specific types of

[114] It should be noted that there are currently four measures collected in CalOMS that may be able to be used as potential performance measures, including continuity of care, access, retention, and completion (refer to Chapter 4 for a detailed discussion and Table 3 for limitations associated with these measures.

[115] The CADPAAC Data/Outcomes Subcommittee is currently in the process of developing an ADP CalOMS-Tx Bulletin that addresses discharge measurement issues.

[116] This will help address the issue associated with clients in treatment that become eligible for SACPA or have a change in funding during the course of their treatment. Currently, the current practice to address this is to discharge the client and then re-open a new admission to account for this funding change. This practice is problematic given that it confounds data. For instance, this practice leads to the creation of new treatment episodes as well as reduces the ability to adequately measure treatment retention and completion. More work is needed to address this issue. Another potential solution is to develop a data field that allows programs to "update" a clients' status.

ancillary services offered, and the transfer to aftercare or other AOD recovery services. These client and treatment level data can provide important information on highly relevant topics that can affect client clinical outcomes and program performance. The addition of these types of data is useful to guide the identification of state and county treatment needs, gaps in service delivery, and what, if any, changes should be made to service delivery to improve treatment. Furthermore, not capturing these measures makes it difficult to comprehensively assess attributes of treatment programs and client profiles.

1.4 Ensure suggested changes to CalOMS are pilot-tested prior to adaptation. Pilot-testing can mitigate the risk of implementing a costly system that may still be faced with operational and other technical-related barriers. As part of this process, fidelity assessments [117] can be conducted to determine the extent to which recommended changes to CalOMS are adapted and properly applied (e.g., after the revision of discharge codes, there should be periodic reviews and fidelity assessments implemented to determine the extent to which the new codes are appropriately being applied). ADP can select different-sized counties and/or different service type/modalities to conduct the demonstration projects to field test the new measurement changes/adaptations before instituting the changes statewide.

1.5 Consider integrating/linking other data systems to CalOMS.[118] Given that data collection, entry, and reporting are associated with high costs and resources, it may be unrealistic to add more measures to the current data set. An option that the advisory committee should consider is linking CalOMS to other data systems (e.g., social services, criminal justice, Medi-Cal and other health and billing databases) that allow for a detailed assessment of individual clients. This type of data linkage can result in a much more comprehensive data repository for state, county and treatment providers that follow a continuum of care services model.

References

- Tables 1: Describes measurement limitations associated with certain CalOMS descriptive measures (comparisons to Treatment Episode Data Set (TEDS) measures are provided when available).
- Table 2: Describes measurement limitations associated with CalOMS outcome measures.
- Table 3: Describes TEDS Discharge measurement.
- Table 4: Describes measurement limitations associated with potential performance measures collected in CalOMS.
- Table 5: Describes possible performance domains and measures.
- Table 6: Describes examples of performance measures by treatment type/modality.
- Washington Circle (see chapter 4)
- National Quality Forum (see chapter 4)

Recommendation 2: **Regulate standardized data collection protocols governing the implementation of CalOMS.**

Although the state has developed standard data collection protocols for CalOMS (i.e., data collection guide and data dictionary), there is a lack of uniform data collection across counties and programs.

[117] Fidelity assessments are surveys to determine the degree to which a new change in the system (e.g., data collection of new measure) is being accurately implemented, such as according to operational definitions).
[118] Some counties already have linked data systems that fall under a behavioral health model which encompass all county-related programs, i.e. AOD CalOMS data is collected via the same system as mental health and criminal justice data.

Suggested Actions:

2.1 Enforce standardized discharge data collection protocols. A data collection protocol should regulate that *all* CalOMS data need to be collected at discharge, regardless of the administrative status in order to adequately capture outcome data (i.e., client change in key outcome measures [drug use] from admission to discharge). Currently, it is common practice among many programs to misuse administrative discharges (i.e., 4, 6, 7, and 8), which only require minimal CalOMS data collection on a limited set of questions.[119] This contrasts with standard discharges that require the completion of the full CalOMS data (i.e., 84-items). As such, providers are opting to overuse administrative discharge codes to lessen the data collection burden.

- ✓ **Discharge data collection protocol should enforce that data be collected from the client.** Currently, there are some instances that programs use clinical judgments to complete the discharge when the client is not available. To avoid issues with data quality, programs should be required to follow a standard data collection protocol that specifies that the client be present or available via telephone to complete the discharge.
- ✓ **Data collection protocol for discharge should be enforced for NTP detoxification programs.** There should be a standard data collection protocol enforced that requires NTP programs to conduct a full CalOMS discharge on clients leaving detoxification programs before entry into maintenance programs. Currently, it is not common practice for many NTP programs to transfer clients from detoxification into maintenance without conducting a CalOMS discharge assessment.

2.2 Institute a specific data collection set and protocol for adolescent treatment services. Currently only an abbreviated set of data is required for youth under 18, which includes the following measure: primary drug, secondary drug, alcohol frequency, employment status, enrolled in school, number of arrest last 30 days, lifetime mental illness diagnosis, social support involvement, and living arrangements. This limits understanding of youth outcomes and inhibits ability to improve treatment services for this population. According to the existing youth treatment literature, measures that more appropriately relate to youth treatment outcomes include: years of substance use, history of overdose, parental history of substance use and mental health problems, peer involvement with substance use, history of victimization, co-occurring mental health problems, crime and violence, and HIV risk behaviors.

2.3 Develop data collection protocols for collection of "interim" discharge measures that captures client transfer. Data collection of 'transfer' is not adequate. Instituting consistent data collection protocols is a necessary component of data quality and validity as was demonstrated in Chapter 7. Specific data collection protocols are needed to adequately assess functioning of clients that transfer between different levels of care. A full CalOMS discharge may be inappropriate as the client may need further treatment interventions (e.g., detoxification to maintenance). Under these circumstances, a subset of measures to the full CalOMS discharge assessment should be implemented to assess the client during this interim period between service transfers. Given that most of the CalOMS measures that assess 'functioning' are "last 30 day" measures, there needs to be discussion with the CalOMS measur3emetn sub-committee on the types of measures that would need to be used or added to the system to adequately measure short-time change (i.e., detoxification services) before transferring to another level of care.

2.4 Data collection protocols should consider self-reported data. The majority of data are based on client self-reports which can comprise the validity of the data. Because CalOMS does not collect biological measures or urine drug screens to validate self-reported data (e.g. , substance use), data collection protocols should also enforce that CalOMS admission and discharge data be collected from the client (in-person or by-phone) and not be based on provider clinical judgment or notes.

[119] Questions include demographic (gender, race, age, etc.), primary drug code, and pregnant status. These items can be obtained via admission data and do not require that the client be present.

References

- Table 7 contains a review of adolescent specific performance and outcome measures.

Recommendation 3: **Improve coordination of data quality assurance processes.**

Data quality assurance protocols are needed to ensure that collected data are accurate, complete, timely, and provide true representations of treatment clients and services. Although most counties currently have line staff who perform the duties and responsibilities of a "county monitor" to monitor data collection issues (which largely affect quality), standardized quality assurance protocols are lacking at county and program levels. More coordinated efforts and direct oversight are needed from the state to regulate such county/local efforts.

Suggested Actions:

3.1 Develop state quality assurance protocols that counties can use with programs to more effectively monitor quality assurance. ADP should develop data quality assurance standards that counties can use as models with their programs to safeguard the quality of CalOMS data. Quality assurance protocols should include regulations on how to monitor the correct application of data, such as discharge codes and transfers at admission), updating the system with funding and referral source changes, as well as cross-checking paper forms with data that is entered into the system (e.g.., waitlist reported among clients who were incarcerated in the month before admission to oversee potential biases with access measurement). To effectively carry out these protocols, counties and programs should also be required to designate data quality assurance units and/or personnel. For instance, units can consist of a coordinator at the county and a designated monitor at each program, with direct oversight by the ADP. This direct oversight is especially important during the initial implementation of this process, and potentially thereafter.

3.2 Support counties to enhance their data operating systems. Many county-run data operating systems do not perform automatic data quality checks. Because these automatic quality checks creates a need initially for human resources to conduct those checks, which can be costly and timely, it is imperative that the state provide any necessary technical support/assistance during the initial set-up/implementation of such quality assurance procedures to help counties develop ways to incorporate these capabilities into their systems over the long-run.

3.3 Develop incentives-based monitoring models to improve data quality. Currently, the main method by which data quality is monitored and addressed is through the use of 'error reports'. Although these methods are effective at capturing missing and incorrect data *after* they have been collected and reported, incentive-based strategies may be a useful method of ensuring data quality at the time of collection and before it is reported to counties and ADP. The state is encouraged to develop incentive-based protocols, which counties can use as models with their programs. Examples of incentive-based protocols include:

- ✓ *Star-rating systems*. Error reports can serve as the basis for determining star ratings. Counties that have low ratings can be required to develop and adhere to corrective action plans and/or scheduled for more frequent external audits.
- ✓ *Report cards*. ADP can provide feedback on 'good' versus 'bad' data through the use of *report cards*, which can provide a rating of CalOMS data quality for different counties/providers. [120] For example, counties/providers can be graded on the proportion of administrative discharges they submit. Here, benchmark targets can be applied where target goals[121] are set. Counties/direct providers can be placed into percentiles: 25th (minimum performance), 50th (average performance), 75th (good performance), and 90th (excellent performance) to indicate a classification of 'good versus poor' performers. Those

[120] The guidelines/outlines for these report cards should be a task of the performance management branch and other ADP oversight bodies.
[121] Incentives must be consistent with the mission and goals of the county/programs.

counties/direct providers falling under the 50th percentile can be required to develop corrective action plans and quarterly performance reports

3.4 Require each certified and licensed treatment program to have at least one certified staff to collect and enter CalOMS data and institute CalOMS user IDs. Certification entails the completion of a set of modules that test the program staff on core areas of data collection and data entry. Upon passing the test, the staff will be labeled as 'certified' and given a 'CalOMS user id.' Upon leaving the program, the county CalOMS liaison should be notified, who then should notify the state to update the certification tracking system. Certification can alleviate the tendency of staff to train and retrain other treatment provider staff members on the use of CalOMS, which can increase the likelihood that information about data collection and entry protocols be skewed. The state can write this certification system into their contracts as a performance tool. A process can be developed by which a list of certified CalOMS users is tracked.

Recommendation 4: **Enhance communication protocols.**

Communication is a major driving force that affects the overall operation and functioning of CalOMS. Given the changing nature of CalOMS, it is imperative that counties and programs be informed on a regular basis about changes that are made to the system. Counties and programs also need to have a communication mechanism to report user feedback regarding data collection and entry and data reporting issues.

Suggested Actions:

4.1 Coordinate communication strategies with counties to disseminate information about CalOMS policies and procedures. More direct oversight of communication activities (memos, emails, etc.) is needed to insure that information about CalOMS is timely, consistent, and accurate. The state is encouraged to develop a process by which counties and programs have a direct communication mechanism to report feedback regarding CalOMS (data collection, entry, quality, reporting, etc). This should be developed where the feedback is collected and responded to/addressed quarterly.

4.2 Enhance CalOMS outcome report design and format. CalOMS outcome reports are an integral part of communication as they provide information about key areas of the California AOD treatment system. Evaluation findings revealed the following issues associated with the current *design* and *format* of the CalOMS outcome reports that inhibit effective communication about CalOMS data to counties and programs:

- ✓ Develop a feature that allows data to be manipulated by a variety of data factors (i.e., client characteristics or treatment type).
- ✓ Report data on unique client identifiers or treatment episodes.

4.3 Communicate the utility of CalOMS data. To secure staff support for improving data quality, the utility of collected CalOMS data should be demonstrated on a frequent basis. This can be done through making available quarterly briefs on results of data across different variables of interest, such as adolescent specific treatment needs or recent drug trends statewide and/or for specific counties (i.e., using ADP Fact Sheets to convey the importance of using data to improve treatment). These can be sent out regularly (i.e., quarterly) via list-serves to counties and programs.

- ✓ **Provide direct access of CalOMS outcome reports to providers.** To address the barriers to access and use and improve upon data quality (i.e., engaging staff in the data and how they can be used for treatment improvement), ADP should consider providing direct access of CalOMS outcome reports to all AOD treatment providers.
- ✓ **Institute a mechanism that automatically disseminates outcome reports to counties and programs**. To address the barriers to access and use, ADP can notify counties and

programs via quarterly emails or a newsletter when outcome reports become available and/or send the reports directly as e-mail attachments.

4.4 Communicate the existence of training sessions and other sources of technical assistance on an ongoing basis. Counties and programs are relying on different sources for training and technical assistance to understand data measures and data collection protocols. Reliance on multiple sources for training and technical assistance may lead to inconsistencies in data collection applications. To address this, market of the availability of CalOMS help-desk and make available the contact information of technical assistance team members for each county.

References:

Table 8 provides an overview of limitations with the current design of outcome reports.

Recommendation 5: **Develop ongoing training and technical assistance to support CalOMS initiatives.**

Like communication, training is another driving force that affects the operation and functioning of CalOMS. As CalOMS evolves, appropriate and consistent trainings are needed to ensure the new protocols are properly implemented.

Suggested Actions:

5.1 Create topic-specific trainings modules and tools counties can use for standardized trainings with their providers. There needs to be more direct oversight of training protocols developed at the state level. ADP should work together with counties and programs to develop a core set of training modules on different topics related to CalOMS. Training topics can include information on addressing problematic data measures and provide solutions on data collection and use of outcome reports.

- ✓ **Enhance the CalOMS Use Guide and Dictionary Material for greater training utility.** The development of CalOMS user material into formats that can be used as specific modules (i.e., module on client characteristics, a module on performance measures, module on outcome measures, etc) can serve as useful training tools can help guide counties show programs how to use CalOMS data appropriately.

5.2 Consider the use of innovative training techniques. Innovative training methods can include the creation of electronic training modules (i.e. interactive CD-ROM) on accessing and reading outcome reports. These non-conventional training methods can address high staff turn over and may reduce the cost of ongoing trainings.

5.3 Require the attendance of county and program level staff for designated trainings. Each county and program should be required to attend a core set of training sessions on CalOMS (i.e., training should not be available on a "volunteer-basis"). Trained participants can receive a 'certification of completion' for completing the core set of training modules. A certification protocol should ensure that counties and programs have at least one trained personnel (see above for related *Suggested Actions* 3.4 an 3.5).

5.4 Implement mechanism to provide Continuing Education Unit (CEU) credit for participation in trainings. ADP should consider involving UCLA's Addiction Technology Transfer Center (ATTC) for assisting with such training protocols and procedures.

Limitations

The recommendations set forth in this chapter may be associated with substantial costs, such as additional human resource hours devoted to data collection and entry, data processing, and data analysis. As such, the recommendations to improve CalOMS as listed here, as well as any ongoing changes, need to be thoughtfully considered and carefully made, and possible alternative actions may

need to be considered. For example, adding additional measures to the data set may lead to data collection overload, increase the human resource cost of data collection and entry, and prove to be burdensome to treatment providers, which may lead to resistance and/or affect the quality of data. Adding measures such as history of sexual and physical trauma and/or HIV status will require data collectors to undergo additional training in order to apply culturally sensitive techniques to data collection. For these reasons, adding measures to the CalOMS data set may not be feasible, in which case it may be more appropriate to periodically survey programs and counties on various topics, such as LGBT/MSM, client satisfaction, evidence based practice, days on waiting list, and perinatal issues.

Considerations

There are other considerations that should be taken into account when reviewing and developing decisions based on the recommendations that also affect the future improvement of CalOMS.

Consideration 1: CalOMS does not collect post-discharge follow-up information on clients, potentially limiting the identification of treatment effects and the relationships to continued care. CalOMS data is currently collected from clients at admission and discharge of treatment. Continued follow-up is needed to be able to identify the sustainability of treatment effects and the relationships to continued care. ADP can institute data collection protocols post-discharge. For example, follow-up data can be collected on a randomly selected sample of clients that received treatment services, adjusting for discharge status and treatment type/modality. Any attempt to reorganize drug addiction as a chronic health problem, treatment effects and re-entry patterns should be measured by discrete follow-up time points (or as included as part of treatment episodes of continuing care) in order to distinguish between the processes, correlates, precedents, and consequences related to treatment outcomes over time as well as continued treatment utilization patterns.

Consideration 2: CalOMS is not a comprehensive data source of all AOD clients and treatment services in the state of California. Currently the collection and reporting of CalOMS data is not uniform across treatment programs as data collection is only required from programs that ADP provides funding for and/or provide narcotic replacement therapy. Programs run by private health insurers are not mandated to report CalOMS data. As well, treatment programs in prisons and jails and programs run by the Veterans Administrations (which falls under a federal mandate) are not required to collect and report data. The exclusion of data from certain treatment programs limits the characterization of treatment services and clients. As a response, ADP can consider mandating the collection of CalOMS data by all types of private and publicly funded treatment programs. This includes all state certified treatment programs, all privately funded programs, programs serving populations in prisons/jails. Furthermore, another consideration for widening the net of measurement is the inclusion of all clients who are prescribed medication such as buprenorphine through their primary care physicians (a very rapidly increasing component of the treatment delivery system). Furthermore, CalOMS data collection for youth 17 and younger does not follow the same standard protocol as adults 18 and older. Rather, data collection for youth only collect a subset of standard CalOMS measures.

Consideration 3: Counties use vastly different operating systems to collect CalOMS – a need for standardization? Many counties require programs to collect other assessment measures in addition to CalOMS, which inhibits the use of standard data collection instruments specifically for CalOMS. ADP should consider streamlining state and federal data reporting requirements. This move will require counties and direct providers to utilize a single platform for collecting and reporting all state and federal required data (in addition to CalOMS). This could address the issues associated with the multiple state and federal level data reporting requirements that can contribute to data collection fatigue and inadvertently affect data quality. It is recognized that although a standardized data collection platform is an ideal method of streamlining data, the introduction of new data system programs can be costly.

Consideration 4: CalOMS improvement initiatives should be informed by other AOD states and health services research/models, both domestically and/or internationally. The California substance abuse treatment system should not attempt to develop its' system in isolation, but can review existing systems to use as a basis for future decision making about improvements. For example, the Medicaid

program (a publicly funded program for low-income elderly, children, and the disabled) may serve as a useful comparison to the AOD treatment system (which is also publicly funded and serves unprivileged populations) to help guide improvement efforts in: a) provider reimbursement schemes and models, b) accreditation and certification policies and procedures, c) quality assurance and monitoring protocols, and d) performance and outcome measurement/monitoring systems. Aside from Medicaid, the U.S. does not currently have any other publicly funded health services programs for its citizens. As the U.S. moves toward a state funded healthcare system, the AOD treatment services system may be in unique position to set the trend by which the general healthcare system may follow. For this reason, it may not only be worthwhile to understand how publicly funded programs such as Medicaid operate health service delivery for their clients, but to also consider other state-funded AOD and mental health service programs in countries such as Canada to provide California with a model.

Consideration 5. Consider integrating initial assessment as a possible consideration for CalOMS data expansion. CalOMS does not provide sufficient information to make accurate estimates of the prevalence of substance use disorders or mental health disorders, nor the ability to distinguish between the type and severity of such disorders. This makes identifying and tracking treatment performance and outcomes among co-occurring clients impossible. Complicating this process is the fact there are currently no standards for the initial assessment process with regards to treatment placement across counties as different counties are either doing standard measures, such as the ASI or the ASAM, some use internal-developed measures, or they are not using any screening measures or intake assessments. It is recommended that standardized screening and placement assessment tool(s) for these areas be developed, pilot-tested, and then implemented statewide. This screening/assessment tool(s) should also accurately identify special populations (i.e., those who are homeless or in danger of becoming homeless). To begin this process, ADP should examine the specific screening and assessment standardized forms that are currently being conducted across counties and the larger AOD treatment field to get a better assessment of what is being done as well as to understand “best practices” in the treatment community that can be adopted.

Table 1. Limitations with Existing CalOMS Descriptive Measures

Limitation 1	
Measure	Gender
Issue	The 'other' category for this measure is not specified; other gender such as transgender is not captured.
TEDS Measure	Does not include an 'other category'
Limitation 2	
Measure	Ethnicity
Issue	Users cannot distinguish between 'race' and 'ethnicity' measures and do not know how to code 'Hispanic' clients. The majority of providers (over 65%) reported marking 'Other' in the race question for clients who are Hispanic. It should be noted that the US Census indicates that 'Hispanic' individuals could be of any race (e.g. White, Black, etc.). This distinction may need to be clarified with data collectors.
TEDS Measure	Includes different measures for Race and Ethnicity, as in CalOMS.
Limitation 3	
Measure	Communicable Diseases (Tuberculosis)
Issue	▪ There are no measures to indicate when client was diagnosed with tuberculosis. ▪ There are no measures to indicate the type of tuberculosis. ▪ There are no measures to indicate whether client is taking medication for tuberculosis.
TEDS Measure	Not collected
Limitation 4	
Measure	Communicable Disease (Hepatitis C)
Issue	▪ There are no measures to indicate when client was diagnosed with Hepatitis C. ▪ There are no measures to indicate whether the client has acute or chronic Hepatitis C.
TEDS Measure	Not collected
Limitation 5	
Measure	Communicable Disease (STD)
Issue	▪ Current measure does not capture whether client has one or more STDs and what type of STDs the client is diagnosed with. ▪ There no measures to indicate when client was diagnosed with the STD
TEDS Measure	Not collected
Limitation 6	
Measure	HIV Test Results
Issue	Current measure only asks client whether client has tested for HIV; HIV test results are not captured. HIV status is an important factor for consideration of suitable AOD substance treatment strategies. Note: It is important to keep in mind that HIV Test Results are sensitive and may be protected health information. Also, during the planning and development of CalOMS, there were many counties that did not want this specific information collected by ADP.
TEDS Measure	Not collected
Limitation 7	
Measure	Drug Age at First Use
Issue	Current measure only asks about age at first use but does not capture the estimated combined number of years of use. Combined years of substance use is an important indicator of chronic use as well as an important correlate to addiction severity and treatment

	outcomes.
TEDS Measure	Not Collected
Limitation 8	
Measure	Alcohol Age of First Use
Issue	There are no measures of clients' age of first use of alcohol. Age of first use is an important correlate to addiction severity and treatment outcomes.
TEDS Measure	Includes *one* measure of 'Age of First Use or Alcohol Intoxication' (drug and alcohol are combined).
Limitation 9	
Measure	Mental Illness-Type
Issue	There are no measures to indicate the type of mental illness the client is diagnosed with. Type of mental illness is an important factor for consideration of different AOD treatment approaches. It is also an important factor related to treatment outcomes. Note: Any added variables in these areas should allow a choice of something like "No professional or licensed staff available to make diagnosis".
TEDS Measure	Identifies whether the client has a psychiatric problem (yes/no category), similar to CalOMS.
Limitation 10	
Measure	Mental Illness-Severity
Issue	There are no measures to indicate the severity of the mental illness. A measure of severity should be provided for each applicable types of mental illness recorded. A severity index for each type of mental illness needs to be identified, and list automatically provided from the drop-down menu as the type of mental illness is selected. Severity of mental illness is an important factor for consideration of different AOD treatment approaches. It is also an important factor related to treatment outcomes. Note: Any added variables in these areas should allow a choice of something like "No professional or licensed staff available to make diagnosis".
TEDS Measure	Not collected
Limitation 11	
Measure	History of physical and sexual abuse and trauma
Issue	There are no current measures to indicate whether clients' history of physical and sexual abuse and trauma (such as domestic violence). It is important to consider that this abuse and trauma can be highly correlated with substance abuse and dependency.
TEDS Measure	Not collected
Limitation 12	
Measure	Source of Referral
Issue	There is no current measure that includes social services/social welfare or mental health sources of referral. There is "Other" that can represent these sources, although not being able to link referral to treatment to these two specific sources is limiting given that they are important sources tied to funding opportunities/capacity issues for many counties.
TEDS Measure	Not collected

Table 2. Limitations with Existing CalOMS Outcome Measures

Limitation 1	
Measure	Primary Drug Name
Issues	▪ No clinical screening assessment is used to determine abuse or dependence of primary substance problem reported by the client. ▪ Current measurement does not capture whether client is a "polydrug" user (drug user who uses more than one drug at a time as their primary problem). ▪ Measure does not adequately capture the use of prescription and over-the-counter drugs as prescription drugs, when reported by clients, are typically classified under 'other' category even though a comprehensive list of drug categories is available for providers to select from. Hence a primary drug category of "Other" does not clearly capture problems with prescription drugs per se.
TEDS Measure	▪ Uses DSM-IV diagnostic clinical criteria for determining alcohol and drug substance use disorders (abuse vs. dependence) via a five-digit diagnosis code for the substance abuse problem. ▪ TEDS includes an option for capturing a tertiary substance problem as well as an option of selecting 'multiple drugs'. ▪ TEDS does not include a specific option for use of prescription drugs, but distinct categories as is done with CalOMS. ▪ The business rule of having the same primary drug at admission and discharge was also the case in TEDS up until this past year, where now the client's primary substance problem at discharge can be different from the primary code given at admission as the code should reflect the "actual situation of the client at discharge.
Limitation 2	
Measure	Substance Use Frequency (past 30 days)
Issue	This measure does not account for clients who do not report any drug use upon entry due to either having been recently released from jail or prison or discharged/transferred from a residential or detoxification treatment facility.
TEDS Measure	This issue is also not accounted for in TEDS
Limitation 3	
Measure	Drug Overdose
Issue	Occurrence and/or frequency of drug overdose not collected in CalOMS.
TEDS Measure	Not collected
Limitation 4	
Measure	Arrests (past 30 days)
Issue	This measure does not capture specific reasons for arrests, such as vandalism, shoplifting, drug sales and manufacturing, forgery, burglary/larceny, robbery, assault, arson, rape, and homicide. This type of information may be helpful in distinguishing between different types of criminal offenses that may serve to further impact the civil liberties of clients and associated quality of life consequences that can serve to impact clinical participation and outcomes.
TEDS Measure	This issue is also not accounted for in TEDS

Table 3: Treatment Episode Data Set (TEDS) Discharge Status Measurement

Category/Code	Definition
Treatment Completed	All parts of the treatment plan or program were completed.
Left against professional advise (Dropped out)	Client chose not to complete treatment program, with or without specific advice to continue treatment. Includes clients who dropped out for unknown reason.
Terminated by facility	Treatment terminated by action of facility (not because client dropped out of treatment, or client incarcerated or other client reason)
Transferred (to another substance abuse treatment program/facility)	Client was transferred to another substance abuse treatment Program, provider or facility, and reported or it is not known whether client reported
Transferred to another substance abuse treatment program or facility, but did not report.	Client was transferred to another substance abuse treatment program, provider or facility, and it is known that client did not report.
Incarcerated	Jail, prison, house confinement
Death	Self explanatory
Other	Moved, illness, hospitalization, or other reason somewhat out of client's control
Unknown	Client status at discharge not known, e.g. record incomplete or lost

Table 4. Limitations with Potential CalOMS Performance Domains/Measures

Limitation 1	
Domain	Access/ Capacity
Measure	Mean wait list time as measured by admission data.
Limitations	▪ Wait list time is limited to data on individuals who entered treatment and not on individuals who contacted treatment programs and were put on wait lists but never enrolled into treatment (i.e., no information on those who 'dropped out' while on the wait list before treatment was initiated is measured). ▪ Wait list is only captured at admission of first treatment admission and designated level of care and is not assessed when client is transferred to another level of care. ▪ Capacity is not adequately measured with available CalOMS data as there is no information collected on treatment need (i.e., how many people in need of treatment actually received it). ▪ Wait list time on incarcerated clients may be an artifact of incarceration and not program availability of slots; hence needs addressing.
Suggested Recommendations	▪ Allow CalOMS data to be linked to other available state and county-wide administrative data sets (e.g., criminal justice, mental health, social services, health care, etc.) in order to gain an assessment of treatment need. ▪ Create a measure that can captures individuals placed on a waitlist that drop-off of it before treatment admission (or develop a link to DATAR that can track this). ▪ Develop a mechanism to measure wait list time for treatment episodes (when transferred between levels of care). ▪ Provide systematic training to providers on this issue that clarifies wait time should not include time spent waiting because of incarceration.
Limitation 2	
Domain	Retention
Measure	▪ Mean and median length of treatment stay in days. ▪ Proportion of clients with lengths of stay 60 days or more. ▪ Proportion of clients with lengths of stay 90 days or more.
Limitation	▪ Because treatment duration differs by service type/modality, retention measures can not be used for comparative purposes by service type/modality. For example, essential benchmark doses of treatment, such as 60- and 90-days of stay do not account for such differences in duration of service type/modality.
Suggested Recommendations	▪ When measuring retention, the unit of treatment exposure considered to be an adequate treatment length or dose for specific treatment types/modalities must commonly be defined. ▪ Retention within different levels of care should be captured, even though part of a treatment episode.
Limitation 3	
Domain	Completion
Measure	Proportion of clients with a treatment completion (referred/not referred) discharge status.
Limitations	Different treatment service types/modalities have varying lengths of treatment duration that can affect completion differently, thereby limiting comparative examination.

Suggested Recommendations	Develop a standard definition of treatment completion specified for each treatment service type/modality.
Limitation 4	
Domain	Continuity of Care
Measure	Proportion of clients with a discharge status from a given treatment service type/modality who were tracked to a subsequent admission to another level of care during 30 days after discharge.
Limitations	▪ CalOMS data does not specify the implementation of referrals to different levels of care, i.e., one is not able to distinguish between referral to another program or level of care by data. ▪ CalOMS data does not adequately use transfer code as it is only measured at admission and should be part of the discharge status measurement to cross check continuity of care data measured via unique client IDs. ▪ CalOMS data does not include criteria for determining the extent to which a given level of care is necessary or appropriate for a particular client (i.e., ASAM client placement criteria).
Suggested Recommendations	▪ Clearly specify and distinguish what referral means and when to use it. ▪ In order to adequately measure treatment episode data (and cross check data with Unique ID data), transfer measurement should be considered for addition to the discharge status codes. TEDs transfer status is clearly captured during discharge data collection. The first event in this episode is an admission and the last event is a discharge. Any change in service and/or provider during a treatment episode should be reported as a discharge, with "transfer" given as the reason for termination. This should be linked or checked with the measure that indicates the extent to which the client followed through with the transfer to be able to appropriately measure the "continuity of care." ▪ Establish transfer criteria for moving clients between different levels of care based on treatment type/modality priorities (1 through 8) as designated by TEDS, with 1 representing the highest priority and 8 the lowest. 1. Detoxification, 24-hour service, hospital inpatient 2. Detoxification, 24-hour service, free-standing residential 3. Ambulatory - detoxification 4. Rehabilitation/residential - hospital 5. Rehabilitation/residential - long term (more than 30 days) 6. Rehabilitation/residential - short term (30 days or fewer) 7. Ambulatory - Intensive-outpatient 8. Ambulatory - Non-intensive outpatient

Table 5: Possible Performance Domains/Measures for inclusion in CalOMS

Domain	Measurement	Source
Treatment Initiation[122]	The percentage of individuals who either (1) initiate treatment through an inpatient AOD admission or (2) have an initial outpatient service for AOD abuse or dependence and receive any additional AOD services within 14 days after identification or diagnosis with alcohol or drug use disorder.	Information is collected through encounter data[123]
Treatment Engagement[7]	The percentage of individuals diagnosed with alcohol or drug use disorder who receive two additional AOD treatments within 30 days after initiating treatment.	Encounter data
Client Perceptions of Care[124]	Client perceptions about a) the quality of services and/or service provision at the treatment center and b) outcomes of treatment (such as coping skills, social connectivity, etc.) for the client.	Information is collected through client satisfaction surveys.
Use of Evidence Based Practices[125]	There are currently no consensus standards adopted at the national level (NOMs) regarding the optimal procedures to identify and measure evidence based practices/programs.[126]	Administrative & Survey Data
Cost Effectiveness	SAMSHA has identified 'cost bands' for different treatment modalities.[127]	Administrative, treatment and billing data.
Organizational Cultural Competency	A set of congruent behaviors, attitudes, and policies that come together in a system, agency, or among professionals and enable that system, agency, or those professionals to work effectively in cross-cultural situations.	Utilize the Health Resources and Service Administration (HRSA) organizational Assessment Profile.
Program Provider Licensing/Certification	Assures that quality services are provided to program clients in a safe and healthful environment and that proficient staff in accepted practices are providing services to clients.	Currently instituted by ADP.

[122] Definitions obtained from the Washington Circle Group.
[123] Encounter data provides a programmatic assessment of the number of treatment units (sessions, visits) provided to a client.
[124] SAMHSA has recently developed a Modular Survey to assess perception of care among clients in substance abuse and mental health treatment. The survey contains a parsimonious set of items that address common concerns across populations (adult, adolescent, and children) and fields (mental health or substance abuse.)
[125] The adoption and implementation of empirically supported clinical and administrative practices and programs. The phrase evidence-based practice has been defined and referred (IOM, 2001) to as an intervention that a) has a high quality evaluation design and methodology; b) has been replicated by other researchers; c) has a manual available; d) has been validated by some form of documented scientific evidence; e) integrates best practice evidence with clinical expertise and patient values, and f) has consistent scientific evidence showing that they improve client outcomes.
[126] A proposal to carry out this type of work in the area of defining and measuring evidence based practices and programs for the California is under consideration for next year's work by ADP.
[127] SAMHSA has a set of identified cost bands; however there may be limitations as recently noted in a treatment efficiency measures technical consultation group report dated May 9, 2008.

Program Facility Licensing/Certification	Assures that contemporary standards of care are provided by the treatment program.	Currently instituted by ADP.

Table 6. Examples of Performance Domains/Measures for Specific Treatment Modalities

Example 1	
Treatment Type/Modality	Narcotic Treatment Program - Detoxification
Sample Domains	Access, retention, and continuity of care
Sample Measurement Criteria	For access, the number of days between first call for treatment to admission or first dose of medication is critical for engaging opiate addicts in treatment. For retention, it is suggested that an effective performance measure consist of the extent to which NTP detoxification programs retain clients during the first two weeks (10 days) of treatment. For continuity of care, it is suggested that a critical performance measure include the percent of clients who transfer from detoxification to another (higher) level of care, such as maintenance treatments or other treatment modalities.
Example 2	
Treatment Type/Modality	Non-NTP Detoxification and Residential Programs (Short-term & Long-term)
Sample Domains	Access, Retention, and Continuity of Care
Sample Measurement Criteria	<u>Non-NTP Detoxification</u> ▪ Access can be measured by the number of days between first call for treatment to admission or first dose of medication. ▪ Retention is typically short-term ▪ Continuity of Care is the goal and should be measured by the % of clients transferred to other "appropriate" levels of care. <u>Short term Residential (30 days or less)</u> ▪ Access can be measured by counting the days between first call and admission. ▪ Retention is short term and a performance indicator of good retention can be potentially captured as % of clients retained for 10 days or more. ▪ Continuality of Care is the goal and should include the % of clients that transfer to other appropriate levels of care. <u>Long term Residential (31 days or more)</u> ▪ Access can be measured by counting the days between first call and admission. ▪ Retention can measure the % of clients retained for at least 90 days as a successful indicator of adequate retention. ▪ Continuality of Care should include the percent of clients that transfer other appropriate levels of care.
Example 3	
Treatment Type/Modality	Narcotic Treatment Programs – Maintenance
Sample Domains	Access, Retention, HIV Reduction
Sample Measurement Criteria	▪ Retention, depending on typical length of program can use 60 or 90 day benchmark measures. Long term retention of at least 365 days should be considered an important performance measure. ▪ HIV risk reduction behavior (injection) is important to consider for clients in NTP programs.
Example 4	
Treatment Type/Modality	Intensive Outpatient, Outpatient, and Outpatient Day Treatment
Sample Domains	Access, Treatment Dose, Retention, Drug Reduction/Abstinence
Sample Measurement	▪ Access – NIATx measures can be applied

Criteria	▪ Treatment dose can be assessed using encounter measures with minimum of 3 in first month and future benchmarks established over time. ▪ Retention can be measured using NIATX measures. ▪ Drug use measurement criteria can include urine tests and urine test results.

Table 7: Performance and Outcome Measures for Adolescent Treatment

Performance Measures	
Domain	**Measure**
Treatment Service Utilization	Service treatment type Use of Placement Criteria
Screening	Readiness to change Abuse/Dependence Mental Diagnosis
Engagement	Initiation of Treatment (w/in 14 days) Motivation for treatment Attendance (30+ days , 3+ sessions)
Early Treatment Satisfaction	After 2 sessions
Treatment Satisfaction	After 3 months
Retention	Time in treatment
Program Compliance	Treatment Completion
Continuing Care	Rates of Transfer to other levels of care (90 + days later)
Linkages to community treatment	Aftercare recovery services
Social Services	Out-of-home placement Foster care stays Likelihood of family reunification Time to reunification
Perception of Care	Staff characteristics
Evidence Based Treatment/Practices	Use for Adolescents *Use of Medications (NQF Standards)
Outcome Measures	
Domain	**Measure**
Post-Treatment Alcohol and Drug use	Frequency of Use (daily/weekly) Abstinent or 50% Reduction in Freq at 3 months
In-Treatment Alcohol and Drug Use	No Use Frequency of Use (daily/weekly) Frequency of getting drunk
Tobacco Use	Frequency of Use
Poly-drug use	Frequency of Use
Education	School Performance Linkages into School (support to re-enter school or providing special programs like recovery schools) Dropping out of school
Social Support Involvement	Recovery services
Vocation	Vocationally engaged
System Involvement	Mental Health Social/Child Welfare

	Juvenile Justice Health Care
Environment Risk: Recovery environment Peer/Social & Family Relations	Involvement with Substance-Using Peers Parental Substance Use Family Problems/Support Single Parent Family Family Income
Legal	Involvement with juvenile/criminal justice Crime (drug-related crime, property crime) Interpersonal Violence (physical fights) Any illegal activity Any arrests 1-90 days in controlled environment (detention/jail)
Housing stability	Homeless Runaway
Resiliency Factors	Self-efficacy Coping skills Self esteem
Cognitive Development	Neurocognitive maturation
Physical Health	Complaints Self treatments
Mental Health	Internalizing Disorders: Depression Anxiety Traumatic distress Suicidal/Homicidal Self-Mutilation Externalizing Disorders: Conduct disorder Impulse control Attention Deficit Hyperactivity
Victimization	Trauma (physical, sexual or emotional)
Child neglect/maltreatment	History of child neglect/maltreatment
HIV Risk Behaviors	Sexually Active Sex under the influence Unprotected sex Multiple sex partners Injection drug use
Readiness/Motivation for Change	Treatment expectancies Abstinence expectancies

Table 8. Limitations with CalOMS Outcome Reports and Suggested Improvements

Limitation 1	
Area	Comparison reports (general)
Issue	Current outcome reports display outcome comparisons in aggregate alongside each provider in the report.
Suggested Improvements	For effective comparisons, comparison outputs should be displayed alongside the comparison group.
Limitation 2	
Area	Comparison of treatment programs
Issue	User cannot obtain comparisons between similar types of treatment programs.
Significance	Treatment programs deal with different types of populations and there are significant differences between different types of treatment modality.
Suggested Improvements	Allow for control on selecting dimensions of treatment program characteristics (i.e. modality, type of drug specialization, etc.)[128]
Limitation 3	
Area	Comparison of Treatment Episode Data Over Time
Issue	CalOMS reports are designed to look at aggregate data about clients and do not allow for assessment of treatment episode data.
Significance	a) Inhibits understanding of performance and outcomes across a continuum of care model and b) counting all admissions versus unique clients within treatment episodes may result in duplicate counts.
Suggested Improvements	▪ Create reports that capture treatment episode data. ▪ Allow users to track data by unique client identifiers using treatment episode data. ▪ Examine change between admissions to discharge over time using episode data which is very different from the current cross-sectional snapshot of change for one service set. ▪ Create plans for developing reports that track who is receiving services from multiple sources; the costs of those services; and outcomes.
Limitation 4	
Area	Comparison across counties
Issue	CalOMS reports request screens do not allow for selection of comparison between similar like size counties.
Significance	Comparison reports should enable counties to gage their performance against similar counties; comparison between non-similar counties provides information that may not be relevant.
Suggested Improvements	Allow users to pick a like-size county (and treatment modality) when looking at comparisons within a report rather than only being able to pick another county or statewide aggregated counties. Change CalOMS reports request screens to include as part of their 'comparison groups' field the following options: "MBA", "small", "medium" and "large"
Limitation 5	
Area	Reporting of all cases, regardless of change in substance use
Issue	Need to have the same primary substance (alcohol or drug) at admission and discharge to make it on to report.
Significance	Clients who may have changed primary substances during treatment or within a treatment episode are not included.
Suggested Improvements	Re-design report formats to include pre- to post- treatment data for all cases, including cases with changed primary substance of choice.
Limitation 6	
Area	Filters

[128] Data about treatment modality and other types of services need to be included as part of CalOMS overall data measurement set.

Issue	Filters not provided for gender, ethnicity or age categories.
Significance	Gender and age are two important confounding factors to treatment outcomes.
Suggested Improvements	Add appropriate filters.
Limitation 7	
Area	Narcotic Treatment Programs (NTPs) as a confounding element.
Issue	Given the uniqueness of NTPs compared to other treatment types, should not include NTPs in reports that show discharge data as it biases outcome results, such as retention (i.e., they are supposed to keep them in the program).
Significance	Inclusion of NTP in reports will skew the outcome results for certain data measures.
Suggested Improvements	Remove NTP sites from admission-discharge tracking and create separate reports or filters for treatment type/modality.
Limitation 8	
Area	Assessing pre- to post-treatment data
Issue	Pre- to post- treatment information is not available for cases without discharge data.
Significance	Not including information on clients who simply drop out of treatment could potentially produce selection bias
Suggested Improvements	Where no discharge data exists, use annual updates as a “discharge” end-point where there is no discharge data and compare this data to admission data. Create outcome report on administrative discharge profiles to show clients who are likely to drop out of treatment.