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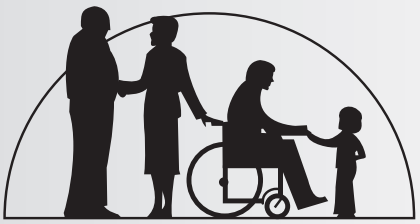
Treatment for Chemical Dependence and Abuse in Minnesota: 2008

June 2010



Minnesota Department of **Human Services**
Performance Measurement and Quality Improvement Division

Treatment for Chemical Dependence and Abuse in Minnesota: 2008

By

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ABSTRACT

This report examines characteristics of patients, characteristics of the treatment received, and outcomes for people admitted to treatment for chemical dependence or abuse in Minnesota in 2008. Providers of treatment in Minnesota are required to submit data at admission and discharge on virtually all people who receive treatment. Data on more than 48,000 admissions were submitted in 2008. The typical (modal) person admitted was a male, unemployed, unmarried, white, resident of the Twin Cities metropolitan area, between the ages of 25 and 44, with a high school degree, who abused alcohol, and was in treatment for the first time. Some categories of people were admitted to treatment more than would be expected on the basis of their representation in the population; these categories include people aged 18 to 24, African Americans, American Indians, residents of northern Minnesota, and users of illegal drugs.

The most common treatment setting was outpatient in a facility with a completion rate of 51 to 75%. The most common therapy was group counseling, followed by education about drugs and alcohol. The most common referrals at discharge were to support groups.

Measures required by the Substance Abuse and Mental Health Services Administration (NOMS) and suggested by the American Society of Addiction Medicine (ASAM) assess functioning in various dimensions and are administered at admission and discharge. Although this is a bit of a simplification, NOMS measures tend to assess functioning in various roles, and ASAM measures tend to assess dimensions of addiction. These, along with a measure of whether the patient completed treatment, assess outcomes of treatment. The improvement on NOMS is especially striking in that, on average, about half of those with a problem on a dimension at admission eliminate that problem by discharge. The improvement on the ASAM measures is less spectacular but still impressive with an average decline of a little under one-third. About 62% of patients completed treatment.

Although all groups show considerable improvement during treatment, this improvement is not spread evenly. African Americans, American Indians, women, adolescents, and residents of the West central region tend to have somewhat poorer outcomes than do others. But it is important to emphasize that even these groups show substantial improvement during treatment.

Treatment for Chemical Dependence and Abuse in Minnesota: 2008

The U.S. Department of Health and Human Services (2000) states that, "Substance abuse and its related problems are among society's most pervasive health and social concerns." The National Center on Addiction and Substance Abuse (2009) estimates that Minnesota spent almost $3 billion on substance abuse and its consequences in 2005. McAlpine et al. (2006) estimate that about 8% of adults in Minnesota met the criteria for substance abuse or dependence, but less than one in ten of them actually received treatment. Park (2006) reports that even higher percentages of high school students (17.6% of 12th graders) exhibited a need for treatment.

Treatment provides a useful antidote to abuse and dependence. In summarizing results from the DATOS project, which examined outcomes for more than 10,000 clients who entered treatment in eleven large cities between 1991 and 1993, Simpson et al. report substantial reductions in the use of drugs and alcohol and participation in illegal activity. For example, the percentage of patients who drank heavily one year after treatment declined by about 50% from pre-treatment levels. Carney and Donovan (2000) compare problems at admission and six months after discharge in the State of Washington and report substantial increases in abstinence from alcohol and other drugs, declines in criminal activity, increases in employment, improvements in physical and mental health, and improvements in familial functioning. McRae (2006) reports that 69% of patients completed their treatment in Minnesota in 2003 and only 14% of them were readmitted to treatment within the year following discharge. Rodgers (2009) notes that the readmission rate in Minnesota in 2005 was 12.2%. Not only is treatment effective at improving the quality of life of participants, but it also saves society money. Using data from California, Ettner et al. (2006) report that every $1 invested in treatment returns about $7 in benefits, largely through reduced criminal activity and increased employment.

This report utilizes the data of the Drug and Alcohol Abuse Normative Evaluation System (DAANES) to examine who got treatment in 2008, what happened to them in treatment, and whether treatment helped to improve functioning in various aspects of their lives. All providers of treatment are required to submit data at admission and discharge to the Minnesota Department of Human Services (DHS) for all episodes of treatment; a few providers, such as the U.S. Department of Veteran Affairs and the Minnesota Department of Corrections, are exempt from this requirement. Data for 48,019 admissions in 2008 of Minnesota residents to treatment were submitted to DHS by August 26, 2009, and are included in this report.

Pre-Treatment Characteristics

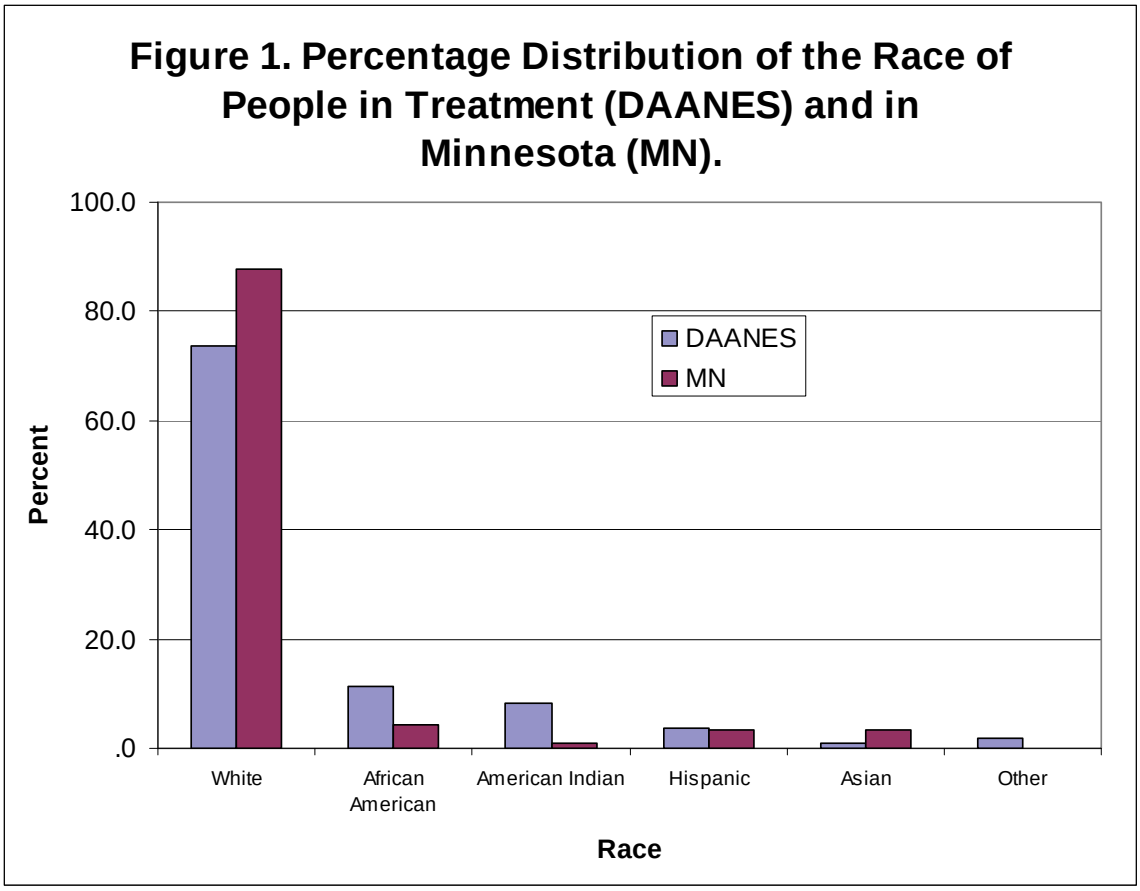
The first column of Table 1 shows the age distribution of people who were admitted to treatment during this period. Almost half of admissions were to people between 25 and 44, with about 20% of admissions to those in each of the 18 to 24 and 45 to 64 categories. Less than 10% of admissions were to youth and less than1% were to those over 64. While these numbers paint a useful picture of the composition of admissions to treatment, they do not tell us whether people in some age groups were disproportionately admitted. To address this issue, we rely on estimates of the number of people in Minnesota over the age of seven from the American Community Surveys (ACS) of 2004-2007 (Ruggles et al. 2008). These data, shown in the second column of Table 1, show considerably smaller proportions in the age groups from 18 through 44. The third column in Table 1 presents the ratio of the percentage in treatment from DAANES to the percentage in the state from the ACS. Ratios less than 1.0 indicate that the category was underrepresented in treatment, and ratios greater than 1.0 indicate that the category was overrepresented in treatment. Therefore, we see considerable overrepresentation of those 18-24, slightly less overrepresentation of those 25-44, and underrepresentation of all other ages. Seniors were especially underrepresented in treatment. We note that none of the comparisons of percentages in treatment with percentages of the state's population imply that a particular group was being over-treated; the data simply indicate that a group received more or less treatment than would be expected on the basis of its representation in the population.

Table 1. Percentage Distribution of the Ages of People in Treatment (DAANES) and in Minnesota (MN)

Age	DAANES[a]	MN[b]	DAANES: MN
8-17	8.4	15.5	0.543
18-24	20.4	10.8	1.891
25-44	47.5	31.1	1.527
45-64	22.7	28.9	0.787
65+	0.9	13.6	0.070

[a] Performance Measurement and Quality Improvement, MN Department of Human Services, St. Paul, MN.
[b] American Community Survey 2004-2007, Ruggles et al. (2008).

Figure 1 shows the racial/ethnic distributions of people admitted to treatment. People who report Hispanic ethnicity are coded Hispanic; therefore, all other categories are non-Hispanic. The "other" category is heterogeneous and includes those who do not report a race, those who report other races, and those who identify with multiple races. Because the other category is so heterogeneous, it is very difficult to interpret; we include it for the sake of completeness but do not comment on it much in the following discussion. We view race/ethnicity as a largely cultural concept and refer to it hereafter as race; our use of the term does not endorse the primacy of biology in the classification. About three-fourths of admissions were to whites, and about 10% were to African Americans and American Indians. Much smaller percentages were to Hispanics, Asians, and others.



Comparing these percentages to the percentages of Minnesotans over the age of 7 who were in the different racial/ethnic groups reveals that whites and Asians were underrepresented in treatment and African Americans and American Indians were overrepresented.

About two-thirds (66.8%) of admission to treatment were for males; since males comprised 49.6% of Minnesotans over the age of 7, it is apparent that males were overrepresented in treatment.

Table 2 provides information on the region of residence of those admitted to treatment. In order to help identify the regions, we list a principal city in each. A little over half of admissions were to residents of the 7-county Twin Cities metropolitan area. Data from the Population Estimates Program of the U.S. Census Bureau (CDC Wonder, 2009) on the percentage of residents over the age of 7 who live in the different regions show that the Twin Cities metro was approximately proportionately represented in treatment. The two northern regions were overrepresented in treatment and the two southern regions were underrepresented.

Table 2. Percentage Distribution of the Regions of Residence of People in Treatment (DAANES) and in Minnesota (MN)

Region	City	DAANES[a]	MN[b]	DAANES: MN
Northwest	Crookston	5.6	3.8	1.459
Northeast	Duluth	7.7	6.3	1.218
West Central	Moorhead	6.5	6.1	1.066
East Central	St. Cloud	10.8	11.1	0.975
Southwest	Mankato	8.8	9.8	0.896
Southeast	Rochester	8.6	9.3	0.917
Twin Cities Metro	Minneapolis	52.0	53.5	0.973

[a] Performance Measurement and Quality Improvement, MN Department of Human Services, St. Paul, MN.
[b] Population Estimates Program 2007, CDC Wonder (2009).

Table 3 presents data on the marital status of people admitted to treatment and of the population in Minnesota over the age of seven. Well over half of admissions were to single people. Comparing the percentages in treatment to the percentages in the state shows that separated, divorced, and single people were overrepresented, while widowed and married people were underrepresented. The distribution of marital status in treatment is very different than the distribution in the population.

Table 3. Percentage Distribution of the Marital Status of People in Treatment (DAANES) and in Minnesota (MN)

Marital Status	DAANES[a]	MN[b]	DAANES: MN
Single	59.7	37.3	1.601
Divorced	16.8	8.4	1.996
Separated	4.4	1.0	4.359
Widowed	1.4	5.0	0.277
Married	17.8	48.3	0.368

[a] Performance Measurement and Quality Improvement, MN Department of Human Services, St. Paul, MN.
[b] American Community Survey 2004-2007, Ruggles et al. (2008).

As shown in Table 4, the modal category of educational attainment of people admitted to treatment is high school graduate, with about one-fourth of admissions to those who did not graduate from high school and one-fourth of admissions to those with some college; fewer than 10% graduated from college. Comparison to data on the population at risk shows that those who did not graduate from high school and those with high school diplomas were overrepresented in treatment, while those with some college and those with at least a college degree were underrepresented.

Table 4. Percentage Distribution of the Educational Attainment of People in Treatment (DAANES) and in Minnesota (MN)

Education	DAANES[a]	MN[b]	DAANES: MN
<HS Grad	26.7	23.8	1.121
HS Grad	38.7	24.4	1.588
Some College	25.8	28.3	0.910
College Grad+	8.8	23.6	0.374

[a] Performance Measurement and Quality Improvement, MN Department of Human Services, St. Paul, MN.
[b] American Community Survey 2004-2007, Ruggles et al. (2008).

The labor force status of people admitted to treatment also differs substantially from the distribution of the population at risk. Table 5 shows that 42.2% of those admitted to treatment were not employed, whereas only 13.9% of the population fell into this category. The other category, which includes occasional workers, those in sheltered work, homemakers, retired people, disabled people, inmates, and unknown and other labor force statuses, was also overrepresented but is too heterogeneous to interpret. Full-time workers, part-time workers, and students were underrepresented in treatment.

Table 5. Percentage Distribution of the Labor Force Status of People in Treatment (DAANES) and in Minnesota (MN)

Labor Force	DAANES[a]	MN[b]	DAANES: MN
Full time	23.0	44.0	0.522
Part time	7.8	9.0	0.864
Student	8.9	21.3	0.420
Unemployed	42.2	13.9	3.046
Other	18.1	11.9	1.528

[a] Performance Measurement and Quality Improvement, MN Department of Human Services, St. Paul, MN.
[b] American Community Survey 2004-2007, Ruggles et al. (2008).

Table 6 presents the distribution of admissions to treatment by primary substance of abuse. The majority of admissions involved alcohol as the primary substance, followed in prevalence by marijuana, methamphetamine, opiates other than heroin, and crack cocaine. No other drug accounted for as much as 5% of admissions. The Census Bureau, of course, does not collect data on use of psychoactive substances, so we cannot rely on them to provide data for comparisons. Fortunately, DHS conducted a survey in 2004-5 of a representative sample of Minnesota adults and obtained information on substances used in the year prior to the survey, and we can use those data for comparative purposes. These data show that users of alcohol were underrepresented in treatment and users of illegal drugs were overrepresented, although some of this overrepresentation might be due to the fact that surveys tend to underestimate the use of more stigmatized drugs (Hickman et al. 2002).

Table 6. Percentage Distribution of the Primary Substance of People in Treatment (DAANES) and in Minnesota (MN)

Primary Substance	DAANES[a]	MN[b]	DAANES:MN
Alcohol	55.5	71.0	0.782
Marijuana	17.3	6.7	2.577
Methamphetamine	7.3	0.6	12.242
Cocaine	2.2	0.9	2.418
Crack	5.4	0.4	13.583
Heroin	4.1	0.1	40.505
Other opiates	5.9	--	--
Other	2.3	--	--

[a] Performance Measurement and Quality Improvement, MN Department of Human Services, St. Paul, MN.
[b] MN Survey of Adult Substance Use (McAlpine et al. 2006).

Figure 2 presents a graphical depiction of the percentages in treatment in Table 6 and shows the preponderance of alcohol as a primary substance.

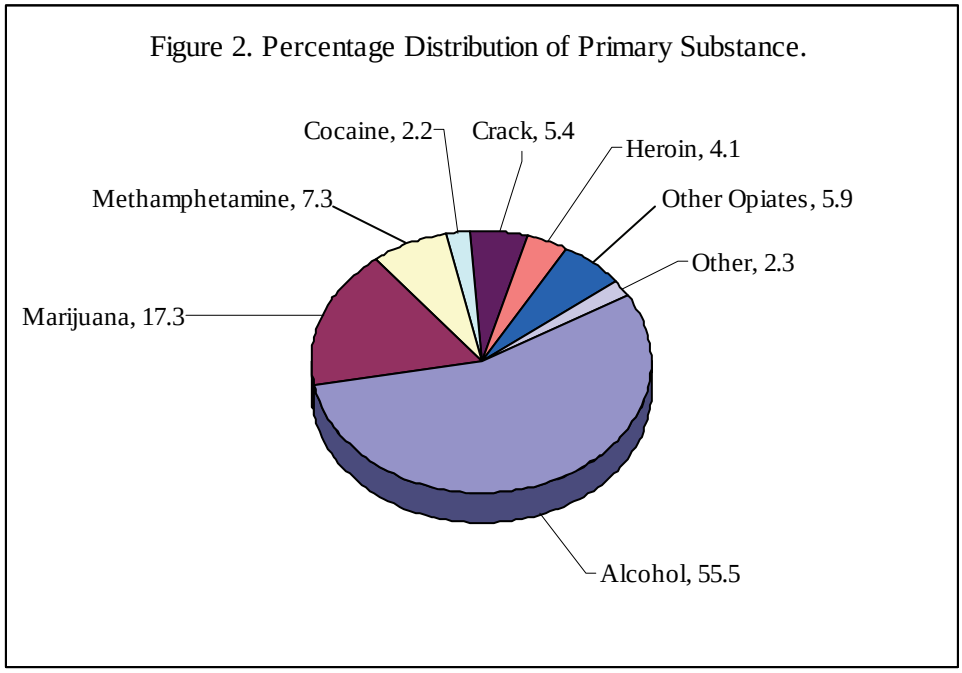


Figure 3 shows how the distribution of primary substance changed from 2000 to 2008. The most notable feature of the figure is that the percentage with alcohol as the primary substance declined through 2005 and then rebounded, while the percentage with methamphetamine increased through 2005 and then declined. The percentage with other opiates increased consistently since 2000. Changes in the categories offered to providers changed slightly in 2007, so small changes between 2006 and 2007 should be ignored.

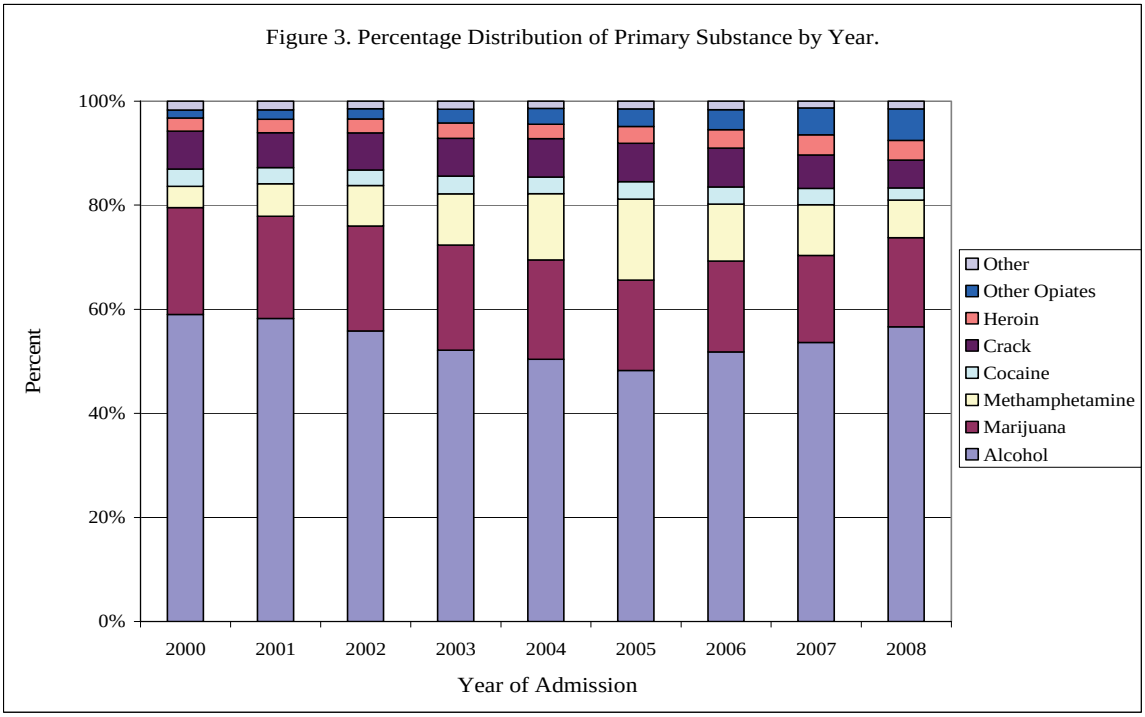


Table 7 presents the distribution of previous admissions to treatment. A few people had been admitted many times, but most were being admitted for the first or second time. About one-fourth were being admitted for the first time and another fourth were being admitted for the second time. About 10% had six or more previous admissions. The mean number of previous admissions is 2.3, the median is 1, and the mode is 0.

Table 7. Percentage Distribution of Number of Previous Admissions

Number of Previous Admissions	Percent
0	26.6
1	24.8
2-3	27.8
4-5	11.3
6+	9.4

Table 8 presents data on the sources of referral to treatment. Since up to two sources are coded for each admission, the percentages do not sum to 100. Personal referrals, which were the most common (47.9%), include those from self, family, friends, schools, and employers. Criminal justice referrals, which were the second most common (38.3%), include those from law enforcement, the courts, probation or parole, and those resulting from DWI or DUI. Referrals from county agencies were provided for 31.9% of admissions. Professional referrals, which include those from health care facilities and professionals, chemical dependency treatment programs, detoxification centers, and mental health centers, were provided for about one-fourth of admissions. Other sources referred 13.4% of admissions.

Table 8. Percentage Distribution of the Sources of Referral to Treatment

Source of Referral	Percent
Personal	47.9
Criminal justice system	38.3
County	31.9
Professional	24.4
Other	13.4

Characteristics of Treatment

Treatment providers in Minnesota are categorized as outpatient, short-term residential (inpatient), long-term residential (halfway house and extended care), and methadone clinics. Table 9 shows how admissions varied by setting. About half of admissions were to outpatient settings, about one-quarter were to short-term residential settings, and about one-fifth were to long-term residential settings; only about one in twenty-five were to methadone clinics.

Table 9. Percentage Distribution of Settings of Treatment Admissions

Setting	Percent
Outpatient	50.3
Short-term residential	26.5
Long-term residential	19.3
Methadone	3.9

Treatment facilities can also be categorized by the percentage of clients who successfully completed treatment in 2008. Table 10 shows the distribution of admissions by the completion rates achieved by the treatment facilities. Almost 60% of clients were admitted to facilities with completion rates between 51 and 75%. A little less than two in ten were admitted to facilities with completion rates between 26 and 50% and about the same proportion were admitted to facilities with rates between 76 and 100%. Fortunately, only about 5% were admitted to facilities with the lowest rates of completion.

Table 10. Percentage Distribution of Admissions to Facilities with Different rates of Completion

Completion Rate	Percent of Admissions
0-25%	5.4
26-50%	17.0
51-75%	59.7
76-100%	17.9

Although DAANES does not collect a lot of information about what happens in treatment, providers do provide information about broad categories of services received by patients. Table 11 provides information on the distribution of services received during treatment. Because this information is provided on the discharge form, only those patients for whom a discharge form was filed are included; about 4,580 of the admissions included in previous tables are not included in this and subsequent tables that require discharge data. Services are ordered in Table 11 by the mean number of sessions. The most common service was group counseling with an average of 24.1 sessions; only 10.2% did not participate in group counseling, while 55.2% participated in at least 16 sessions. Only education about alcohol and other drugs approaches the frequency with which group counseling was received. At the other extreme, only about 10% of patients received detoxification. The ranking of testing for alcohol and other drugs is somewhat anomalous: the average number of sessions is very low (2.1), but the percentage who are not tested at all (44.9%) is lower than the percentage for all but three other services (group and individual counseling and AOD education).

Table 11. Percentage Distribution and Mean Number of Sessions for Different Services Received During Treatment

	Percentage Distribution of Number of Sessions					
Service	0	1-5	6-10	11-15	16+	Mean
Group counseling	10.2	12.4	12.9	9.3	55.2	24.1
AOD education	20.8	18.8	12.2	7.8	40.5	18.9
Individual counseling	21.7	47.3	17.5	6.1	7.4	5.6
Spiritual support	52.4	30.1	9.5	2.9	5.1	3.9
Transportation	75.3	12.3	4.1	1.8	6.6	3.2
Psychiatric	65.1	23.5	4.6	1.7	5.0	2.9
Coordination	65.5	24.0	5.6	1.6	3.4	2.4
Medical care	70.8	21.5	3.9	0.9	2.9	2.3
AOD testing	44.9	46.2	5.7	1.6	1.5	2.1
Family counseling	69.0	20.7	5.7	1.4	3.2	2.0
Detoxification	90.1	8.1	0.8	0.2	0.9	0.6

We also collect information on referrals made at discharge from treatment. As shown in Table 12, the most common type of referral is to support groups; a little over two-thirds of patients received such referrals. About one-third of patients were referred to therapy, and about a third were referred to additional treatment. Referrals to housing, medical care, and vocational services were less common.

Table 12. Percentage Distribution of Referrals at Discharge from Treatment

Referrals	Percentage
Support groups	69.3
Therapy	36.4
Treatment	34.6
Housing	21.8
Medical	12.8
Vocational	3.5

Outcomes of Treatment

The first outcome that we consider is whether the patients completed treatment. Harrison and Asche (2000) report that completing treatment is closely associated with abstinence six months after treatment. 61.7% of patients completed treatment, 27.1% terminated treatment prior to completion, either because they left on their own volition or because staff requested that they leave, and 11.3% terminated early for other reasons.

The Substance Abuse and Mental Health Services Administration (SAMHSA) has developed six National Outcomes Measures (NOMS) to be administered at admission and discharge to determine functioning in six critical domains in the thirty days prior to admission and discharge. According to SAMHSA (2009), NOMS “are designed to embody meaningful, real life outcomes for people who are striving to attain and sustain

recovery; build resilience; and work, learn, live, and participate fully in their communities." Table 13 shows the percentage of patients who exhibited problems in each dimension at admission and discharge, as well as the percentage who improved on each dimension. The first three columns of the table show that the percentage of people with problems declined for all measures, although the declines were much larger for the last three than the first three dimensions. However, part of the apparent differential decline results from the fact that small percentages of patients experienced problems with homelessness and arrests at admission; for example, the maximum decrease in the percentage homeless is 7.1%, while the maximum decrease in the percentage who did not participate in a support group was 59.9%. To address this, we calculated the fourth column by dividing percentage point improvement by the initial percentage with the problem at admission (and multiplying by 100). The entries in this column can be interpreted as the percentage of the problem that was eliminated by treatment. By this reckoning, treatment successfully addressed almost half of the problem with homelessness and over 60% of the problems with arrests, use of alcohol, use of drugs, and lack of a support group. Treatment was less successful in improving participation in the labor force, but even this dimension showed some improvement.

Table 13. Percentage of Patients Who Exhibited Problems on NOMS at Admission and Discharge

NOMS	Admission	Discharge	Improvement	% Improve
Homeless[a]	7.1	3.9	3.2	45.1
Out of labor force[b]	56.9	53.5	3.4	6.0
Arrested[a]	12.4	4.8	7.6	61.3
Used alcohol[a]	47.3	14.6	32.7	69.1
Used other drugs[a]	36.8	13.7	23.1	62.8
No support group[a]	59.9	20.7	39.2	65.4

[a] In the 30 days prior to admission or discharge.
[b] Not working full or part time and not a student.

Providers also evaluate clients at admission and discharge on six dimensions of addiction similar to those proposed by the American Society of Addiction Medicine (ASAM 2009). Each of these items was initially coded no problem, minor problem, moderate problem, serious problem, or extreme problem. Table 14 presents the percentage of patients at admission and discharge who were coded as having a moderate, serious, or extreme problem, as well as the improvement and percentage of those with a problem who improved. The table shows substantial improvement over the course of treatment for all dimensions, although the absolute declines for intoxication/withdrawal and biomedical conditions were smaller than others. However, the last column, which shows the percentage of the maximum possible improvement that was achieved, shows a minimum improvement of about 25%.

Table 14. Percentage of Patients Who Exhibited Problems on ASAM Dimensions at Admission and Discharge

ASAM	Admission	Discharge	Improvement	% Improve
Intoxication/Withdrawal	8.8	4.8	3.9	44.8
Biomedical	14.6	10.1	4.4	30.4
Emotional/Behavioral/Cognitive	60.3	45.3	15.0	24.9
Readiness to change	63.0	44.9	18.2	28.8
Potential relapse	92.6	68.4	24.3	26.2
Recovery environment	80.6	59.5	21.1	26.2

The data on outcomes presented above show that treatment is quite successful: well over half of patients admitted completed their treatment, and both NOMS and ASAM measures show substantial improvements in the lives of patients.

Racial Differences

In this section, we cross-classify race by characteristics of patients and their treatment. Table 15 shows the distribution of the sociodemographic factors for each racial group.

There are substantial racial differences in the gender distribution. The modal gender for all groups is male, but males predominate by larger amounts among African Americans and Hispanics. The gender distribution is more evenly balanced among American Indians.

Age also varies by race. The modal category for all groups is 25 to 44, but there are several notable differences. First, whites and African Americans are less likely to be under 18. Second, African Americans, but not whites, are also underrepresented in the young adult category. Third, whites and especially African Americans are more likely to be 45 to 64. In short, African Americans and, to a lesser extent, whites are likely to be older than patients in the other racial groups.

There are also substantial variations in the regional distributions of the racial groups. The modal region for all groups but American Indians is the Twin Cities metropolitan area; for American Indians, the mode is the Northwest, and they are disproportionately represented in the Northeast and West Central. African Americans are especially concentrated in the Twin Cities, and Hispanics are especially likely to be in the Southwest. Whites are less likely than most other groups to reside in the Twin Cities.

Racial differences in educational attainment reflect differences in the wider society. Whites tend to have more education than others, with a larger percentage of college graduates and a smaller percentage of patients with less than a high school degree. The modal category for each group is instructive. For whites and African Americans, the mode is a high school degree, but for all other groups, the mode is less than a high school degree, although the distribution for “Other” is bimodal. In general, whites have the highest level of education, followed by African Americans, Asians, American Indians, and Hispanics.

Table 15. Percentage Distribution of Sociodemographic Factors by Race

	Race					
	White	African American	American Indian	Hispanic	Asian	Other
Gender						
Male	66.9	73.8	54.6	72.7	65.7	59.0
Female	33.1	26.2	45.4	27.3	34.3	41.0
Age						
8 – 17	8.0	3.9	13.4	16.2	12.5	14.5
18 – 24	21.1	12.7	22.1	23.4	26.5	26.0
25 – 44	46.2	53.3	50.5	47.5	48.5	49.0
45 – 64	23.6	29.9	13.8	12.6	10.9	10.3
65+	1.2	0.3	0.3	0.2	1.6	0.2
Region						
Northwest	3.9	0.4	28.1	6.1	2.1	3.9
Northeast	7.8	2.6	16.1	4.4	3.5	5.5
West Central	6.5	1.2	15.2	5.5	2.6	3.8
East Central	12.8	3.0	7.8	5.7	4.0	7.0
Southwest	10.1	2.1	4.9	15.4	5.1	5.6
Southeast	10.1	3.8	1.8	9.7	10.7	5.5
Metro	48.7	87.0	26.0	53.2	72.1	68.7
Education						
<HS	22.0	36.3	42.7	47.8	37.9	35.9
HS Grad	39.0	39.9	39.5	32.4	30.2	35.9
Some College	28.1	20.9	16.0	16.8	23.4	23.3
Col Grad+	10.9	2.9	1.8	3.0	8.5	4.9
Labor Force						
Full time	27.1	9.4	9.7	18.3	16.9	12.4
Part time	8.5	4.9	5.0	7.6	9.8	7.6
Student	8.4	4.7	14.6	15.6	16.5	14.6
Unemployed	39.2	55.9	49.5	42.0	38.4	47.0
Other	16.8	25.2	21.1	16.5	18.4	18.4
Marital Status						
Single	56.9	63.3	73.7	63.9	69.6	71.8
Divorced	18.5	13.7	10.1	10.8	9.1	11.0
Separated	4.1	6.8	3.7	5.2	2.3	3.7
Widowed	1.5	1.6	0.7	0.8	1.4	1.4
Married	19.0	14.6	11.8	19.3	17.6	12.0

The labor force status of patients also varies by race. The modal category for all groups is unemployed, although the percentage unemployed is considerably higher for African Americans than for the other groups. Full-time employment is more common among whites and, to a lesser extent, among Hispanics and Asians. Disproportionate numbers of Asians, Hispanics and American Indians are students.

Marital status shows less but still significant variation by race. The modal category for all races is single, although higher percentages of whites are divorced than is true for any other racial group.

Table 16 presents the distribution of primary substance by racial group. The most common primary substance for all groups is alcohol, although the percentages of whites and American Indians whose primary substance is alcohol are higher than the percentages for all other groups. For whites, Hispanics, and Asians, the second and third most prominent primary substances are marijuana and methamphetamine, respectively. For African Americans, crack is the second most prominent substance and marijuana is third; furthermore, a disproportionate number of African Americans were treated for heroin addiction. For American Indians, marijuana is second and other opiates are third.

Table 16. Percentage Distribution of Primary Substance by Race

	Race					
Primary Substance	White	African American	American Indian	Hispanic	Asian	Other
Alcohol	58.9	36.8	58.3	48.8	42.5	41.9
Marijuana	15.7	21.9	18.5	25.8	20.4	26.7
Methamphetamine	8.8	0.6	3.2	6.6	13.2	7.6
Cocaine	1.9	3.7	1.5	5.0	1.9	2.1
Crack	2.7	24.0	3.7	5.3	3.7	8.7
Heroin	3.4	9.9	1.7	3.7	3.2	5.6
Other opiates	6.1	1.5	11.8	3.1	9.3	4.6
Other	2.5	1.5	1.3	1.6	5.8	2.8

The number of previous admissions to treatment, shown in Table 17, varies considerably by race. In general, American Indians and African Americans have more previous admissions, and Hispanics and Asians have fewer, with whites having an intermediate number. The fact that only one in six American Indians but almost one in two Asians is in treatment for the first time is especially striking.

Table 17. Percentage Distribution, Mean, Median, and Mode of Number of Previous Treatment Admissions by Race

	Race					
Number of Previous Admissions	White	African American	American Indian	Hispanic	Asian	Other
0	27.5	23.5	16.7	33.8	46.7	31.0
1	25.0	24.0	22.6	28.7	24.9	24.0
2 – 3	27.9	27.1	31.9	23.4	18.7	25.4
4 – 5	10.9	13.2	14.4	8.1	5.3	10.1
6+	8.7	12.1	14.3	6.0	4.5	9.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
Mean	2.2	2.6	3.1	1.8	1.4	2.3
Median	1.0	2.0	2.0	1.0	1.0	1.0
Mode	0.0	1.0	1.0	0.0	0.0	0.0

Table 18 shows how various aspects of treatment vary by race. The most important difference in the sources of referrals is that whites, African Americans, and Asians are most likely to have personal referrals, whereas American Indians and Hispanics are more likely to be referred by the criminal justice system. American Indians are disproportionately likely to be referred from "other" sources; those sources are largely tribal agencies.

The modal setting for all racial groups is outpatient. A relatively large percentage of whites receive short-term residential treatment (inpatient), and a relatively large percentage of American Indians receive long-term residential (halfway house or extended care).

Table 18. Percentage Distributions of Aspects of Treatment by Race

		Race					
		White	African American	American Indian	Hispanic	Asian	Other
Referral From	Personal	50.2	45.2	36.6	37.5	45.9	44.6
	CJS	36.6	39.2	47.3	48.3	42.9	36.5
	Professional	26.0	19.6	18.5	21.9	22.0	25.5
	County	30.2	37.7	34.9	38.8	32.0	34.8
	Other	12.8	9.0	26.6	10.5	14.2	12.7
Setting	Outpatient	50.9	52.1	40.7	53.1	56.1	52.8
	STR	27.7	22.6	22.6	24.5	20.4	25.6
	LTR	17.8	20.0	32.2	19.6	13.0	18.4
	Methadone	3.6	5.3	4.5	2.8	10.4	3.2
% Complete	0-25	4.9	6.8	7.7	5.0	11.6	5.0
	26-50	14.6	25.0	24.8	19.4	18.1	22.6
	51-75	60.7	57.4	55.7	56.3	56.3	59.3
	76-100	19.8	10.8	11.9	19.3	14.0	13.2
Referral To	Treatment	33.6	38.3	36.1	38.0	32.9	36.8
	Support	71.5	60.1	63.2	69.8	68.8	64.2
	Housing	21.1	25.5	21.0	25.0	18.9	23.6
	Therapy	38.3	28.4	30.9	34.4	30.1	38.2
	Medical	13.4	10.7	11.4	10.0	9.9	12.6
	Vocational	3.3	4.2	3.5	5.3	3.8	3.7

Patients from all groups are most likely to be in moderately successful facilities with completion rates of 51-75%, but a disproportionate share of whites and Hispanics are in facilities with completion rates of 76-100%. Asians are especially likely to be in facilities with very low completion rates.

The most likely referrals at the end of treatment for all groups are to support groups, such as Alcoholics Anonymous. Such referrals are less common for African Americans and, to a lesser extent, American Indians. Whites are especially likely to be referred to therapy, while African Americans, American Indians, and Hispanics are especially likely to be referred to additional treatment.

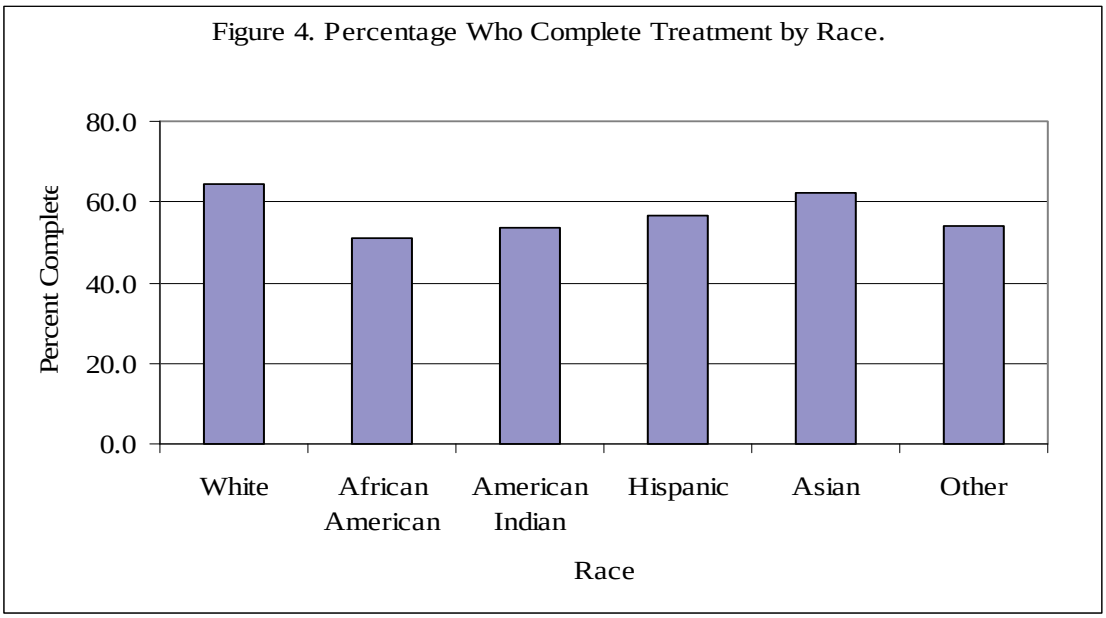
Table 19 portrays the mean numbers of services in different categories that were received by the different racial groups. The most frequently received service for all racial groups is group counseling, which was most common for American Indians and least common for African Americans. In fact, American Indians exhibit higher means for nine of the eleven services examined. African Americans and Asians tend to have the lowest means. African Americans received the least group, individual, spiritual and family counseling, and care coordination, while Asians received the least AOD education, transportation, and medical care.

Table 19. Mean Number of Sessions Received During Treatment by Race

	Race					
	White	African American	American Indian	Hispanic	Asian	Other
Group counseling	24.3	19.9	29.0	23.5	23.0	21.9
AOD education	19.1	17.0	21.5	17.2	14.9	17.4
Individual counseling	5.5	5.1	7.2	5.6	5.2	5.5
Spiritual	3.8	2.6	7.0	3.9	2.6	2.6
Transportation	3.1	2.6	5.4	3.1	1.8	3.0
Psychiatric	3.0	2.9	2.2	2.2	3.4	3.8
Coordination	2.4	1.8	3.6	2.9	2.0	2.3
Medical care	2.2	1.9	4.2	2.0	1.5	1.9
AOD testing	2.0	2.3	2.8	2.3	2.2	1.9
Family counseling	2.1	1.6	2.3	1.9	2.0	1.7
Detoxification	0.6	0.5	0.4	0.6	0.7	0.7

Outcomes also vary significantly by race. Figure 4 shows that over 60% of whites (64.6) and Asians (62.2) complete treatment, whereas smaller percentages of African Americans (50.9), American Indians (53.7) and Hispanics (56.7) do so.

Figure 4. Percentage Who Complete Treatment by Race.



Tale 20 shows the percentages of the different racial groups who experience problems on the various NOMS dimensions at admission and discharge. The third row shows the percentage point improvement from admission to discharge; every group shows improvement on every dimension. Higher percentages of African Americans and American Indians tend to show problems at admission and discharge, but they also tend to show the greatest improvement from admission to discharge. African Americans show the greatest improvement in homelessness, Asians show the greatest improvement in labor force participation and support, American Indians show the greatest reduction in arrests, whites show the greatest reduction in use of alcohol, and African Americans (and Others) show the greatest reduction in use of drugs.

Table 20. Percentage with Problems on NOMS at Admission and Discharge by Race

		Race					
NOMS Dimension	Time	White	African American	American Indian	Hispanic	Asian	Other
Homeless	Admission	5.2	18.3	9.3	7.8	6.8	10.4
	Discharge	2.8	11.6	3.6	4.7	3.7	5.8
	Improve	2.4	6.7	5.7	3.1	3.1	4.5
Labor force	Admission	53.1	76.7	67.4	53.5	49.8	59.3
	Discharge	49.7	73.0	64.6	50.0	45.0	55.3
	Improve	3.4	3.7	2.8	3.5	4.8	4.0
Arrested	Admission	11.4	12.4	20.5	13.0	13.3	14.4
	Discharge	4.6	5.4	6.1	5.4	4.6	5.1
	Improve	6.9	7.0	14.4	7.7	8.7	9.3
Alcohol	Admission	48.1	46.7	44.3	41.4	42.2	48.2
	Discharge	14.7	15.3	13.3	13.5	13.6	15.1
	Improve	33.4	31.3	31.0	27.9	28.6	33.1
Drugs	Admission	33.8	51.9	40.5	37.5	40.0	49.2
	Discharge	12.3	22.2	13.1	14.8	17.7	18.5
	Improve	21.5	29.7	27.4	22.7	22.3	30.6
Support	Admission	58.2	65.8	65.0	62.2	69.2	62.2
	Discharge	19.6	23.4	23.7	26.1	26.1	22.8
	Improve	38.6	42.5	41.3	36.1	43.1	39.4
Average	Admission	35.0	45.3	41.2	35.9	36.9	40.6
	Discharge	17.3	25.1	20.7	19.1	18.5	20.4
	Improve	17.7	20.2	20.4	16.8	18.4	20.1

The final three rows of the table show the average percentage experiencing problems or improving. We present these summary measures in Figure 5, which illustrates the greater prevalence of problems at admission and discharge among African Americans and American Indians but also their greater improvement. The fact that the bars for improvement are generally about the same height as the bars for problems at discharge demonstrates that about half of those with problems at admission do not show the problem at discharge.

Figure 5. Average Percentage with Problems on NOMS by Race.

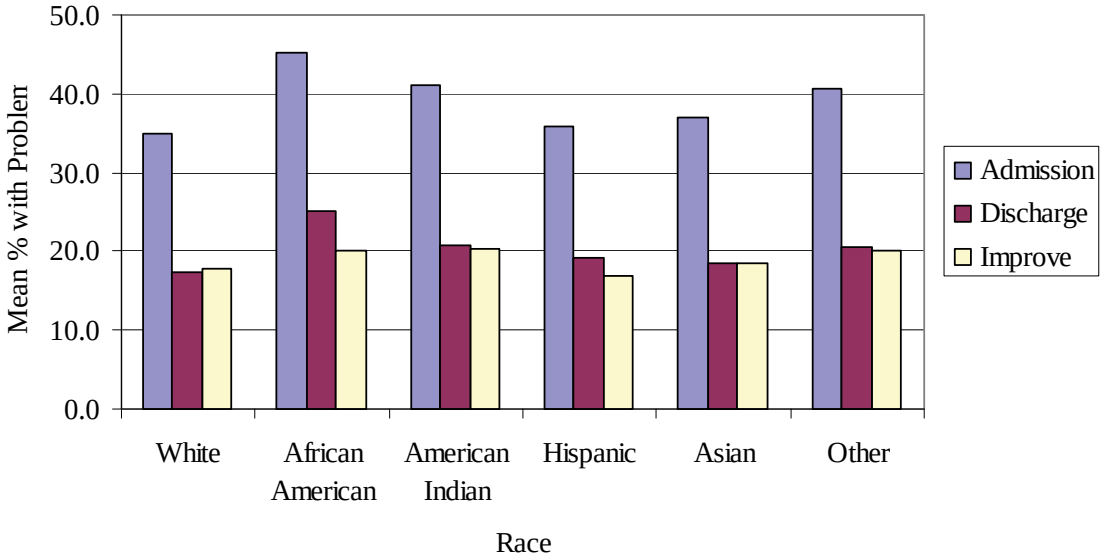
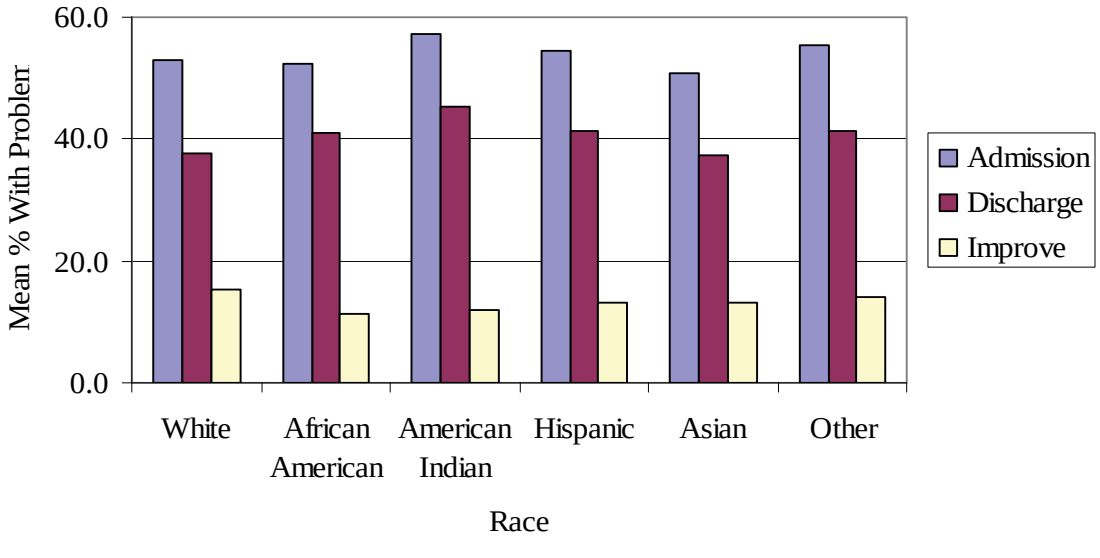


Table 21 and Figure 6 present similar information for the ASAM dimensions. Although many points could be made about these data, we concentrate on several main tendencies. First, scores at admission tend to be considerably higher than those at discharge; in fact, every group shows considerable improvement on every dimension. Second, scores at admission and discharge tend to be higher for American Indians. At least as measured by these indicators, greater percentages of American Indians enter and leave treatment with serious problems. Third, improvement, the difference between admission and discharge, tends to be highest for whites and, to a lesser extent, Asians and Hispanics, and lowest for African Americans and American Indians.

Table 21. Percentage with Problems on ASAM Dimensions at Admission and Discharge by Race

ASAM Dimension	Time	Race					
		White	African American	American Indian	Hispanic	Asian	Other
Intoxication/ Withdrawal	Admission	8.9	8.2	9.8	7.1	8.0	7.3
	Discharge	4.7	5.7	5.7	3.8	5.7	2.8
	Improve	4.2	2.6	4.0	3.3	2.3	4.5
Biomedical	Admission	14.3	15.6	18.2	11.4	10.5	12.8
	Discharge	9.8	10.6	14.3	8.4	6.5	8.8
	Improve	4.5	5.0	3.9	3.0	4.0	4.0
Emotional/ Behavioral/ Cognitive	Admission	60.5	56.2	64.6	59.6	55.1	65.5
	Discharge	44.5	45.2	51.0	48.3	42.4	50.2
	Improve	16.0	11.0	13.6	11.3	12.7	15.3
Readiness to change	Admission	61.8	61.4	71.8	71.1	61.0	68.1
	Discharge	42.2	50.1	57.7	52.9	44.6	47.6
	Improve	19.6	11.4	14.1	18.2	16.4	20.5
Relapse potential	Admission	92.7	91.2	92.6	94.1	92.7	95.4
	Discharge	67.1	70.8	74.0	71.8	68.1	74.0
	Improve	25.6	20.5	18.6	22.4	24.6	21.4
Recovery environment	Admission	79.7	81.5	86.0	83.5	76.8	83.5
	Discharge	57.6	63.6	69.0	63.0	57.0	65.0
	Improve	22.1	17.9	17.0	20.5	19.8	18.5
Average	Admission	53.0	52.4	57.2	54.5	50.7	55.4
	Discharge	37.6	41.0	45.3	41.4	37.4	41.4
	Improve	15.3	11.4	11.9	13.1	13.3	14.0

Figure 6. Average Percentage with Problems on ASAM by Race.



Gender Differences

In this section we cross-classify gender by other characteristics of patients and their treatment. Table 22 shows the distribution of the sociodemographic factors for men and women. As we saw in the previous section, women are less likely to be African American and more likely to be American Indian. Women are likely to be a bit older than men with a higher percentage in the 25-44 group, whereas men are disproportionately in the 18-24 group. Regional differences are quite minor, although they are statistically significant. Women in treatment tend to be better educated, with higher percentages having gone to and graduated from college. There are substantial differences in labor force status between women and men: men are more likely to be employed full time, whereas

Table 22. Percentage Distribution of Sociodemographic Factors by Gender

		Gender	
Variable	Category	Male	Female
Race	White	74.0	73.3
	African American	12.7	9.0
	American Indian	6.8	11.3
	Hispanic	4.0	3.0
	Asian	.9	.9
	Other	1.7	2.3
Age	8 - 17	8.3	8.5
	18-24	21.6	18.0
	25-44	45.9	50.7
	45-64	23.2	21.9
	65+	1.0	.9
Region	Northwest	5.5	5.8
	Northeast	7.4	8.3
	West Central	6.4	6.7
	East Central	11.0	10.5
	Southwest	9.3	7.8
	Southeast	8.7	8.3
	Metro	51.7	52.7
Education	<HS	27.2	25.6
	HS Grad	41.1	34.1
	Some College	23.9	29.5
	Col Grad+	7.8	10.8
Labor force	Full time	25.9	17.1
	Part time	6.9	9.5
	Student	8.8	9.2
	Unemployed	41.5	43.7
	Other	16.9	20.5
Marital status	Single	62.2	54.6
	Divorced	15.4	19.5
	Separated	3.9	5.3
	Widowed	1.0	2.1
	Married	17.5	18.4

women are more likely to be employed part time or be in the other category, which includes homemakers. Finally, men are more likely to be single, and women are more likely to be in each of the other marital statuses.

Table 23 shows gender differences in primary substances of abuse. Greater percentages of men abuse alcohol and marijuana, whereas greater percentages of women abuse methamphetamine, crack, and other opiates.

Table 23. Percentage Distribution of Primary Substance of Abuse by Gender

	Gender	
Primary Substance	Male	Female
Alcohol	57.1	52.2
Marijuana	19.2	13.3
Methamphetamine	6.3	9.4
Cocaine	2.3	2.0
Crack	4.7	7.0
Heroin	4.1	4.0
Other opiates	4.3	9.3
Other	2.0	2.8

Differences between women and men in previous treatment admissions are substantively trivial and statistically insignificant.

Table 24. Percentage Distributions of Aspects of Treatment by Gender

		Gender	
		Male	Female
Referral From	Personal	47.0	49.8
	CJS	43.1	28.6
	Professional	22.1	29.0
	County	30.9	34.0
	Other	12.6	14.9
Setting	Outpatient	51.9	47.1
	STR	25.9	27.7
	LTR	18.7	20.5
	Methadone	3.5	4.7
% Complete	0-25	4.6	6.9
	26-50	16.1	18.9
	51-75	60.4	58.3
	76-100	19.0	15.8
Referral To	Treatment	32.0	39.8
	Support	69.3	69.3
	Housing	21.4	22.5
	Therapy	29.5	50.4
	Medical	10.5	17.4
	Vocational	3.5	3.5

Table 24 shows how various aspects of treatment vary by gender. The largest difference in referrals to treatment is that men are much more likely to be referred by the criminal justice system. In contrast, women are more likely to receive all other types of referrals, but especially those from professional sources. Men are more likely to be in outpatient treatment, and women are more likely to be in each of the other settings. Men are also more likely to be in treatment facilities that have higher percentages of patients completing treatment. In terms of the referrals that patients receive at the end of the treatment episode, women are more likely to be referred to additional treatment, to therapy, and to medical care.

Table 25 portrays the mean numbers of services received during treatment by men and women. The most frequently received service is group counseling, with an average of about 24 sessions. In general, women receive more sessions of each service, although the difference for spiritual counseling is not significant.

Table 25. Mean Number of Sessions Received During Treatment by Gender

Service	Male	Female
Group counseling	23.61	25.06
AOD education	18.32	20.19
Individual counseling	5.44	5.87
Spiritual	3.90	3.94
Transportation	2.84	3.87
Psychiatric	2.59	3.52
Coordination	2.29	2.71
Medical care	2.19	2.66
AOD testing	2.00	2.28
Family counseling	1.90	2.22
Detoxification	.56	.70

Men and women differ in the likelihood of completing treatment. Whereas 63.3% of men successfully complete treatment, only 58.3% of women do so.

Table 26 presents the percentage of women and men who exhibit problems on the NOMS dimensions at admission and discharge and the percentage who improve during treatment. The last three rows of the table show the percentages averaged over the six dimensions. In general, slightly higher percentages of women exhibit problems at admission and discharge and show improvement during treatment. Overall, the percentages of women and men who have problems are very similar. It is worth noting that the largest differences occur in rates of labor force participation, and SAMHSA defines being a homemaker as a problematic status.

Table 26. Percentage with Problems on NOMS at Admission and Discharge by Gender

NOMS Dimension	Time	Gender	
		Male	Female
Homeless	Admission	7.1	7.2
	Discharge	4.5	2.9
	Improvement	2.6	4.3
Labor force	Admission	54.8	61.2
	Discharge	51.0	58.5
	Improvement	3.8	2.7
Arrested	Admission	12.8	11.5
	Discharge	5.2	4.1
	Improvement	7.6	7.5
Alcohol	Admission	46.3	49.4
	Discharge	14.1	15.6
	Improvement	32.2	33.9
Drugs	Admission	35.3	39.9
	Discharge	13.3	14.4
	Improvement	21.9	25.5
Support	Admission	60.5	58.5
	Discharge	21.1	19.9
	Improvement	39.4	38.7
Average	Admission	36.1	38.0
	Discharge	18.2	19.2
	Improvement	17.9	18.7

Table 27 presents similar information for the ASAM dimensions. As seen in the averages, women tend to exhibit higher percentages with problems at both admission and discharge, while men exhibit greater improvement. At admission, higher percentages of women show problems on all dimensions other than Readiness to Change. At discharge, higher percentages of women show problems on all dimensions. Larger percentages of women improve on Intoxication/Withdrawal and Biomedical, but men show greater improvement on all other dimensions.

In summary, men fare somewhat better in treatment. A higher percentage of men complete treatment, lower percentages of men exhibit problems on NOMS and ASAM at discharge, and higher percentages of men show improvement on ASAM.

Table 27. Percentage with Problems on ASAM at Admission and Discharge by Gender

ASAM Dimension	Time	Gender	
		Male	Female
Intoxication/ Withdrawal	Admission	8.1	10.1
	Discharge	4.5	5.5
	Improvement	3.6	4.6
Biomedical	Admission	12.4	19.0
	Discharge	8.4	13.7
	Improvement	4.0	5.3
Emotional/ Behavioral/ Cognitive	Admission	56.2	68.7
	Discharge	40.8	54.6
	Improvement	15.5	14.1
Readiness to change	Admission	63.6	61.9
	Discharge	43.8	47.1
	Improvement	19.8	14.8
Relapse potential	Admission	92.1	93.6
	Discharge	66.1	73.0
	Improvement	26.0	20.7
Recovery environment	Admission	80.0	81.9
	Discharge	57.5	63.7
	Improvement	22.5	18.2
Average	Admission	52.1	55.9
	Discharge	36.8	42.9
	Improvement	15.2	13.0

Age Differences

In this section, we cross-classify age by other characteristics of patients and their treatment. Table 28 shows the distribution of the sociodemographic factors for the different age groups. The younger age categories, especially those under 18, include disproportionate numbers of American Indians and Hispanics, whereas the older age categories include disproportionate numbers of whites and African Americans. Patients over 64 are especially likely to be white. Gender differences, although significant, are slight. Those aged 25-44 are disproportionately likely to be female, while those aged 18-24 and over 64 are disproportionately male. Regional differences in the age distributions are complex but a few points are noteworthy. Older patients are especially likely to live in the Twin Cities and younger patients are more likely to live in Greater Minnesota. Those who are under 18 are especially likely to live in the Southwest. There are large differences in educational attainment by the different age groups, but much of this results from the fact that those of younger ages may not have completed their schooling. In general, those who are older have higher levels of education; over one-fourth of seniors have at least a college degree, whereas only about one-sixth of those who are 45-64 have this much schooling. There are large age differences in labor force status, but most are very predictable. The young are especially likely to be students, and those over 64 are especially likely be “other,” which includes retired. Those between 18 and 44 are

disproportionately unemployed. Differences in marital status are also predictable, with the young especially likely to be single, and older patients especially likely to be widowed and married.

Table 28. Percentage Distribution of Sociodemographic Factors by Age

		Age				
Variable	Category	8 - 17	18-24	25-44	45-64	65+
Race	White	69.8	76.1	71.8	76.6	90.5
	African American	5.2	7.1	12.9	15.1	3.7
	American Indian	13.2	9.0	8.8	5.0	2.9
	Hispanic	7.1	4.2	3.7	2.0	0.9
	Asian	1.3	1.2	0.9	0.4	1.5
	Other	3.3	2.4	2.0	0.9	0.4
Gender	Male	66.2	70.7	64.5	68.0	70.0
	Female	33.8	29.3	35.5	32.0	30.0
Region	Northwest	8.8	6.3	5.2	4.5	4.3
	Northeast	9.5	8.0	7.5	7.3	6.9
	West Central	7.7	7.3	6.2	6.0	7.8
	East Central	11.9	12.3	10.6	9.6	8.5
	Southwest	13.0	10.5	8.2	7.1	8.3
	Southeast	9.3	10.9	8.2	7.2	5.1
	Metro	39.8	44.8	54.1	58.2	59.1
Education	<HS	97.2	31.8	18.2	14.0	11.4
	HS Grad	2.5	45.1	42.5	39.0	33.9
	Some College	0.3	21.7	29.6	30.9	26.7
	Col Grad+	0.0	1.4	9.7	16.1	28.0
Labor force	Full-time	0.8	19.3	26.7	27.4	6.9
	Part-time	5.7	12.8	7.0	5.9	3.1
	Student	83.2	6.3	1.2	0.2	0.2
	Unemployed	6.8	51.0	47.6	37.9	3.8
	Other	3.5	10.5	17.5	28.7	86.0
Marital status	Single	99.6	92.4	55.6	26.0	8.5
	Divorced	0.1	.9	17.5	35.5	25.5
	Separated	0.1	1.0	5.6	6.5	3.6
	Widowed	0.0	0.1	0.8	3.5	18.8
	Married	0.1	5.7	20.5	28.4	43.6

Table 29 shows age differences in primary substances of abuse. The most striking feature of the table is that as age increases, the prevalence of alcohol as the primary substance also increases. Marijuana shows the opposite tendency: as age increases, the prevalence of marijuana as the primary substance declines. Use of methamphetamine is most pronounced among those 18 to 44. Use of crack peaks between 25 and 64, while use of powder cocaine is more evenly spread across age. Use of heroin and other opiates are most common among those between 18 and 64.

Table 29. Percentage Distribution of Primary Substance of Abuse by Age

	Age				
Primary Substance	8 - 17	18-24	25-44	45-64	65+
Alcohol	23.0	44.1	57.2	72.8	90.7
Marijuana	67.5	30.1	10.0	3.0	0.4
Methamphetamine	1.8	9.2	9.8	3.0	0.0
Cocaine	1.9	1.9	2.5	1.8	0.2
Crack	0.2	2.0	6.9	7.6	1.5
Heroin	0.2	4.5	4.5	4.3	1.5
Other opiates	1.4	5.9	7.1	5.4	2.9
Other	4.0	2.3	2.1	2.1	2.6

Table 30 shows that as age increases, the number of previous treatment episodes also increases but then declines for seniors. Interestingly, about a third of those over 64 are in their first episode of treatment; it may be that as people retire, they are able to get the treatment that they avoided during their working years.

Table 30. Percentage Distribution of Number of Previous Admissions to Treatment by Age

	Age				
Number of Previous Admissions	8 – 17	18 – 24	25 – 44	45 – 64	65+
0	40.5	33.9	24.0	20.0	32.1
1	28.3	27.4	24.5	21.8	27.4
2 – 3	25.0	25.3	28.7	29.5	25.8
4 – 5	4.8	8.7	12.3	14.2	9.4
6+	1.5	4.7	10.6	14.4	5.2
Mean	1.2	1.7	2.5	3.0	1.9
Median	1.0	1.0	2.0	2.0	1.0
Mode	0.0	0.0	1.0	1.0	0.0

Table 31 shows how various aspects of treatment vary by age. How people get to treatment varies by age. In general, referrals from personal, professional and other sources increase with age but are more likely among the youngest patients than among those who are 18 to 24. Referrals from the criminal justice system and counties generally decrease with age, but those from counties are more common among those aged 18 to 24 than among those aged 8 to 17. Where people get treatment also varies by age. The likelihood of being in outpatient treatment declines with age, while the probability of being in short-term residential treatment increases with age. Being in a long-term residential setting is most common among adolescents and least common among seniors. Treatment at a methadone clinic is rare among adolescents. Although age differences in the completion rates of facilities at which patients are treated are significant, there is no clear pattern to the results. The likelihood of being at a facility with a completion rate above 75% is lower among the youngest and oldest patients. The referrals that patients get at the end of treatment also vary by age. Referrals to additional treatment, therapy, and vocational training generally decline with age, whereas referrals to support groups and medical services generally increase with age.

Table 31. Percentage Distributions of Aspects of Treatment by Age

		Age				
		8 - 17	18-24	25-44	45-64	65+
Referral From	Personal	47.4	39.4	47.9	55.1	58.4
	CJS	50.1	49.6	37.0	27.2	22.7
	Professional	28.1	19.6	23.4	29.0	35.9
	County	25.0	35.1	33.1	29.7	18.5
	Other	12.9	11.6	13.7	14.3	18.3
Setting	Outpatient	55.2	53.1	50.3	46.2	48.2
	STR	18.5	24.8	26.6	30.2	38.8
	LTR	26.2	19.1	18.5	19.0	9.5
	Methadone	.1	3.0	4.6	4.6	3.5
Complete	0-25	7.5	4.1	5.5	5.6	4.4
	26-50	18.0	15.7	17.0	18.0	14.1
	51-75	60.4	61.7	58.9	59.1	65.8
	76-100	14.2	18.4	18.7	17.4	15.7
Referral To	Treatment	44.1	36.8	33.5	31.5	28.9
	Support	67.6	66.0	69.5	72.4	74.5
	Housing	22.1	21.9	21.7	22.1	11.0
	Therapy	56.3	31.7	35.6	35.2	28.7
	Medical	7.2	10.0	12.5	17.7	24.8
	Personal	5.9	4.1	3.1	3.0	.0

Table 32 portrays the mean numbers of services received during treatment by patients of different ages. The most frequently received service is group counseling, which is most common among those under 18. Those under 18 are more likely than other age groups to receive the first five services and care coordination. They are also the most likely to receive testing for alcohol and other drugs and family counseling but the probability of receiving these services generally declines with age. Receipt of medical services and detoxification generally increase with age, although detoxification is less common among those over 64 than among those who are younger.

Table 32. Mean Number of Sessions Received During Treatment by Age

	Age				
Service	8 - 17	18-24	25-44	45-64	65+
Group counseling	28.04	23.65	23.18	24.93	22.77
AOD education	21.56	17.58	18.60	19.88	19.57
Individual counseling	8.07	5.39	5.23	5.57	4.83
Spiritual	5.23	3.66	3.74	4.02	3.54
Transportation	6.61	2.97	2.81	2.86	2.64
Psychiatric	2.91	2.77	2.77	3.31	2.72
Coordination	3.72	2.21	2.25	2.52	1.98
Medical care	1.81	2.05	2.17	3.11	4.11
AOD testing	3.42	2.11	1.98	1.83	1.05
Family counseling	2.74	2.03	1.91	1.92	1.43
Detoxification	.14	.51	.63	.81	.61

Figure 7 shows the percentage who complete treatment in the different age groups. Clearly, as age increases, the likelihood of completing treatment also increases. While 57.4% of those under 18 complete, 67.4% of those over 64 do so.

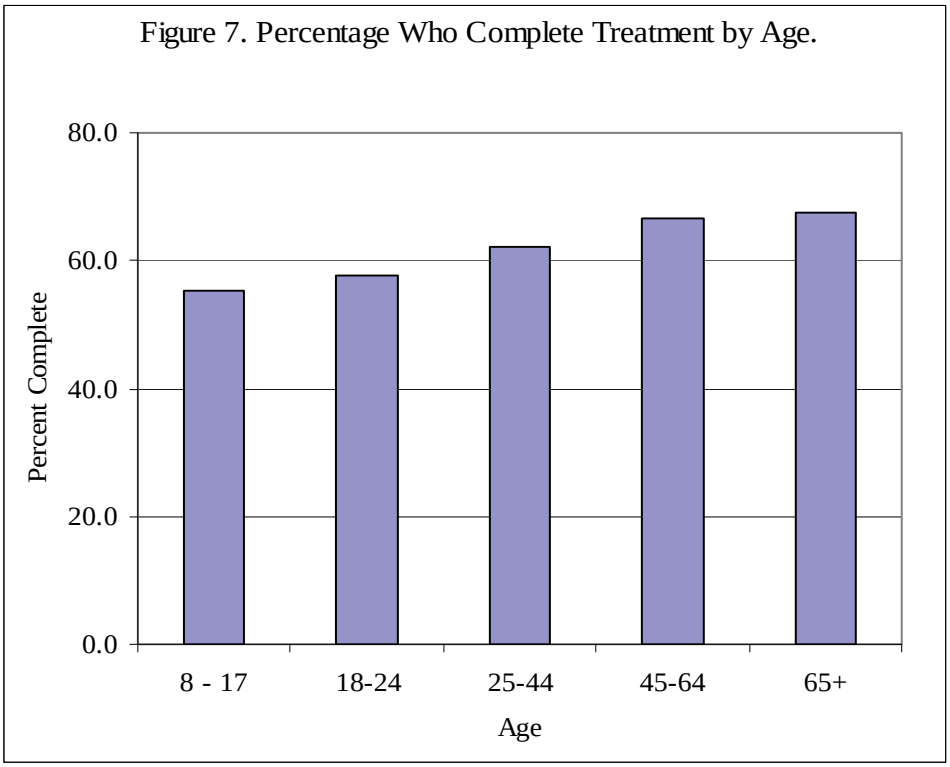


Table 33 presents information on the percentage within the different age groups who exhibit problems on the NOMS measures at admission and discharge. The last three rows of the table present the average percentage with problems over all dimensions. In general, higher percentages of youth experience problems at admission and discharge, although this is obscured in the averages by the very low percentages who are homeless or out of the labor force. Higher percentages of youth experience problems at admission and discharge with arrests, use of drugs, and lack of support. Similarly, the high average for seniors results largely from the very large percentage who are retired and, therefore, out of the labor force. At admission and discharge, seniors are the most likely to have consumed alcohol, but they also show the largest improvement on this measure. As seen previously with regard to race and gender, all age groups improve dramatically.

Table 33. Percentage with Problems on NOMS at Admission and Discharge by Age

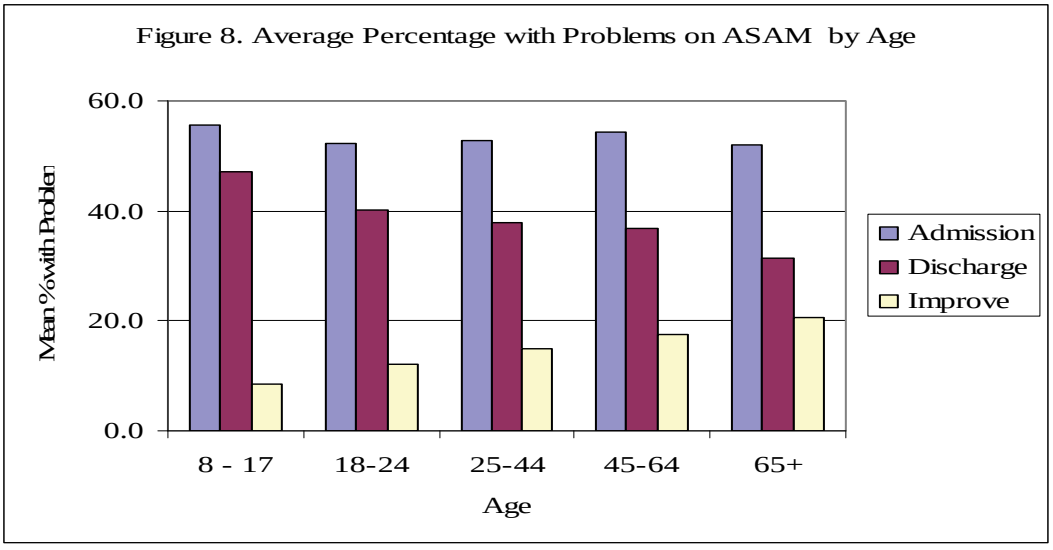
NOMS		Age				
Dimension	Time	8 - 17	18-24	25-44	45-64	65+
Homeless	Admission	0.7	5.7	8.5	8.3	2.5
	Discharge	0.5	3.0	4.7	4.7	1.2
	Improve	0.2	2.6	3.8	3.7	1.2
Labor force	Admission	4.2	57.4	62.6	64.5	88.6
	Discharge	3.9	53.5	58.3	61.8	86.8
	Improve	0.3	3.8	4.2	2.8	1.8
Arrested	Admission	18.3	15.4	11.7	9.0	6.6
	Discharge	7.1	6.2	4.4	3.7	1.8
	Improve	11.2	9.2	7.3	5.3	4.8
Alcohol	Admission	40.4	42.7	46.6	55.2	64.2
	Discharge	15.5	12.7	14.2	16.5	19.5
	Improve	24.9	30.0	32.4	38.6	44.7
Drugs	Admission	57.0	44.2	35.5	25.8	6.0
	Discharge	26.8	17.2	12.3	8.7	1.6
	Improve	30.2	27.1	23.2	17.2	4.4
Support	Admission	72.7	64.7	57.3	55.6	64.3
	Discharge	38.1	23.1	18.4	16.3	22.2
	Improve	34.7	41.6	38.9	39.3	42.1
Average	Admission	32.2	38.3	37.0	36.4	38.7
	Discharge	15.3	19.3	18.7	18.6	22.2
	Improve	16.9	19.1	18.3	17.8	16.5

Table 34 presents similar information for the ASAM dimensions. As with NOMS, youth tend to experience the most problems at both admission and discharge. Higher percentages of seniors show problems with Intoxication/Withdrawal and Biomedical Problems, and a higher percentage of seniors show improvement between admission and discharge.

Table 34. Percentage with Problems on ASAM at Admission and Discharge by Age

ASAM Dimension	Time	Age 8 - 17	18-24	25-44	45-64	65+
Intoxication/ Withdrawal	Admission	1.0	6.9	9.2	12.3	14.9
	Discharge	1.3	4.7	5.2	5.6	5.7
	Improve	-0.2	2.3	4.1	6.7	9.3
Biomedical	Admission	3.8	8.2	14.5	24.1	29.3
	Discharge	3.2	6.4	9.9	16.3	20.3
	Improve	0.6	1.8	4.6	7.8	9.0
Emotional/ Behavioral/ Cognitive	Admission	69.7	57.1	59.9	60.9	49.7
	Discharge	59.3	46.1	44.3	41.6	32.0
	Improve	10.3	11.0	15.6	19.3	17.8
Readiness to change	Admission	77.4	67.3	60.9	58.3	59.1
	Discharge	61.5	50.3	42.9	38.0	31.9
	Improve	15.9	17.0	17.9	20.3	27.2
Relapse potential	Admission	96.2	92.9	92.2	91.9	88.8
	Discharge	81.8	71.4	66.5	64.6	57.9
	Improve	14.4	21.5	25.7	27.3	30.9
Recovery environment	Admission	86.0	81.4	80.3	79.1	70.1
	Discharge	75.2	62.7	57.9	54.8	40.8
	Improve	10.7	18.8	22.4	24.3	29.4
Average	Admission	55.7	52.3	52.8	54.4	52.0
	Discharge	47.0	40.3	37.8	36.8	31.4
	Improve	8.6	12.1	15.0	17.6	20.6

Figure 8 plots the average percentages with problems at admission, discharge, and the improvement. At admission, there is no clear pattern in the percentages with problems. However, at discharge, the percentage with problems declines with age. This implies, of course, that the percentage who improve will increase with age, and this is exactly what Figure 8 shows. At least as measured by ASAM, the effectiveness of treatment increases dramatically with age.



Regional Differences

In this section, we cross-classify region of residence by other characteristics of patients and their treatment. Table 35 shows the distribution of the sociodemographic factors for the different regions. The modal racial group for all regions is white, but the Northwest has a disproportionate share of American Indians, and the Twin Cities metropolitan region has a disproportionate share of African Americans. Gender differences are quite minor, but a greater proportion of patients in the Southwest are male. The modal age group in all regions is 25 to 44. Larger proportions of patients in the Northwest and

Table 35. Percentage Distribution of Sociodemographic Factors by Region of Residence

	Region						
	Northwest	Northeast	West Central	East Central	Southwest	Southeast	Metro
Race							
White	51.5	74.9	73.8	87.3	84.5	86.6	69.0
African American	0.8	3.8	2.2	3.2	2.7	5.1	19.3
American Indian	42.0	17.5	19.5	6.1	4.6	1.8	4.2
Hispanic	4.0	2.1	3.1	1.9	6.5	4.2	3.8
Asian	0.3	0.4	0.4	0.3	0.5	1.1	1.3
Other	1.3	1.3	1.1	1.2	1.2	1.2	2.5
Gender							
Male	65.6	64.0	65.7	67.7	70.6	67.9	66.3
Female	34.4	36.0	34.3	32.3	29.4	32.1	33.7
Age							
8 – 17	13.4	10.4	10.0	9.3	12.5	9.1	6.5
18 – 24	22.8	21.1	22.7	23.1	24.2	25.8	17.5
25 – 44	44.6	45.9	45.2	46.5	44.0	45.4	49.4
45 – 64	18.5	21.7	21.0	20.3	18.4	19.1	25.5
65+	0.7	0.8	1.1	0.7	0.9	0.6	1.1
Education							
<HS	36.1	25.4	30.8	27.6	31.5	28.3	24.1
HS Grad	41.6	38.3	40.5	40.5	38.0	40.6	37.8
Some College	18.1	28.2	23.2	25.4	24.2	24.9	27.2
College Grad+	4.2	8.1	5.5	6.5	6.3	6.2	11.0
Marital Status							
Single	64.6	61.0	59.4	57.7	59.0	61.0	59.3
Divorced	16.0	17.8	16.4	17.9	17.2	17.9	16.3
Separated	3.0	3.8	4.4	4.5	4.2	3.8	4.7
Widowed	1.4	1.2	1.4	1.7	1.0	0.8	1.5
Married	14.9	16.3	18.3	18.2	18.5	16.5	18.2
Labor Force							
Full time	20.5	20.2	22.3	26.3	26.8	24.8	21.7
Part time	7.0	9.7	8.9	7.4	8.1	9.8	7.1
Student	14.1	11.4	10.5	9.7	11.2	8.4	7.5
Unemployed	41.9	31.7	40.1	41.7	39.9	42.0	44.8
Other	16.4	27.1	18.3	14.9	14.0	15.0	18.9

Southwest are minors. The primary regional difference in education is that patients in the metro region tend to have more education; those in the Northwest tend to have the least education. The modal marital status in all regions is single, and this preponderance is especially pronounced in the Northwest. The modal labor force status in all regions is unemployed. Patients in the East Central, Southwest, and, to a lesser extent, the Southeast are more likely than others to be employed full-time.

Table 36 shows the distribution of primary substance by region. Alcohol is the most frequently used substance in all regions. Use of marijuana is especially prevalent in the Southwest, while methamphetamine is especially prevalent in the East Central and Southeast. Residents of the Twin Cities are more likely than others to use crack and heroin, whereas other opiates are more prevalent in the Northwest, Northeast, and West Central regions.

Table 36. Percentage Distribution of Primary Substance by Region of Residence

	Region						
Primary Substance	Northwest	Northeast	West Central	East Central	Southwest	Southeast	Metro
Alcohol	64.3	61.4	61.1	58.2	59.8	53.8	52.0
Marijuana	19.7	18.9	17.6	18.5	23.3	18.0	15.4
Methamphetamine	3.9	6.1	8.1	11.5	7.6	10.4	6.4
Cocaine	1.2	1.0	1.4	1.2	1.6	3.4	2.6
Crack	1.3	1.6	.8	1.7	1.3	3.9	8.8
Heroin	.2	.5	1.0	1.3	.7	2.7	6.7
Other opiates	7.9	8.9	8.2	5.4	3.3	5.5	5.6
Other	1.5	1.6	1.8	2.3	2.4	2.3	2.4

As shown in Table 37, the number of previous treatment admissions also varies by region. Whereas the means are highest for those in the Northwest, West Central and Metro, the medians and modes are higher only in the Northwest and West Central. This difference results form the fact that the mean is most influenced by extreme values and a few patients in the Metro had many previous admissions.

Table 37. Percentage Distribution of Number of Previous Treatment Admissions by Region of Residence

Previous Treatment	Region						
Admissions	Northwest	Northeast	West Central	East Central	Southwest	Southeast	Metro
0	24.2	26.6	23.8	27.5	26.9	27.9	26.5
1	25.5	24.7	25.7	26.7	25.6	25.6	24.0
2 – 3	30.3	27.7	29.0	28.1	28.5	28.4	27.3
4 – 5	11.4	12.1	10.3	10.8	11.2	10.9	11.6
6+	8.7	8.9	11.2	6.9	7.8	7.2	10.6
Mean	2.4	2.3	2.5	2.1	2.1	2.1	2.4
Median	2.0	1.0	2.0	1.0	1.0	1.0	1.0
Mode	1.0	0.0	1.0	0.0	0.0	0.0	0.0

Table 38 shows how various aspects of treatment vary by region. How people get into treatment varies by region. Personal referrals are the most common source for those in the East Central and Metro regions. The most frequent source for those in the Northwest, Northeast and Southeast is the criminal justice system, while the most common source for those in the West Central and Southwest is the county. The modal setting for all regions is outpatient, and this setting is especially prevalent in the Northeast. Short-term residential is most prevalent in the Southwest and the Metro, while long-term residential is most prevalent in the West Central and Northwest regions. Methadone treatment is most common in the Metro. Most people in all regions get treatment in facilities in which between 51 and 75% of patients complete treatment. The Southeast is notable in that over one-third of patients get treatment in facilities with completion rates that are above 75%. The Northeast also stands out in that very few patients get treatment in facilities with the lowest completion rates. The most common referrals at the end of treatment in all regions are to support groups. Referrals to additional treatment, housing, and therapy are most common in the Metro, while referrals to support groups, medical care, and vocational training are most common in the Southeast.

Table 38. Percentage Distributions of Aspects of Treatment by Region of Residence

		Region of Residence						
Variable	Category	North-west	North-east	West Central	East Central	South-west	South-east	Metro
Referral From	Personal	39.3	37.0	40.4	48.6	37.0	42.7	53.7
	CJS	49.4	51.6	41.6	42.8	47.2	42.9	31.5
	Professional	14.4	18.6	22.3	22.9	23.4	28.3	26.7
	County	45.4	26.4	53.9	26.7	48.0	35.1	26.8
	Other	17.5	10.7	12.0	12.7	8.4	9.9	14.7
Setting	Outpatient	46.7	54.8	48.0	49.4	47.1	51.9	50.8
	STR	22.8	23.1	20.9	24.3	27.9	25.7	28.5
	LTR	27.8	20.6	28.5	24.4	24.5	19.2	15.2
	Methadone	2.6	1.5	2.5	1.9	.6	3.2	5.5
Complete	0-25	4.9	.3	5.8	2.8	2.2	6.6	6.9
	26-50	20.9	6.2	17.7	15.1	8.3	7.5	21.8
	51-75	53.1	82.0	70.3	63.2	64.0	48.7	55.9
	76-100	21.1	11.4	6.2	18.8	25.5	37.2	15.4
Referral To	Treatment	28.5	27.7	33.1	32.1	33.4	35.0	37.3
	Support	63.8	61.8	68.6	70.7	72.9	75.1	69.2
	Housing	16.5	14.0	17.8	20.3	19.7	21.2	24.9
	Therapy	25.4	28.4	36.0	38.4	31.2	38.9	39.1
	Medical	8.6	12.6	14.5	13.1	10.1	16.8	12.9
	Personal	2.5	3.3	2.8	3.7	3.6	4.3	3.5

Table 39 portrays the mean numbers of services received during treatment by patients of different regions. The most frequently received service in all regions is group counseling. In general, the rank ordering of the first four or five most frequently received services is similar in all regions, although the number of services received is typically higher in the Southwest and West Central regions. Fewer services were typically received in the Metro.

Table 39. Mean Number of Sessions Received During Treatment by Region of Residence

	Region						
Service	North-west	North-east	West Central	East Central	South-west	South-east	Metro
Group counseling	26.0	23.8	30.2	26.4	32.1	24.2	21.4
AOD education	18.7	15.2	22.3	18.7	26.6	19.7	17.7
Individual counseling	6.8	5.0	7.8	5.0	6.9	5.3	5.1
Spiritual	6.7	3.8	7.7	3.6	6.4	3.8	2.7
Transportation	5.1	3.5	6.5	5.1	3.2	3.1	2.1
Psychiatric	1.2	1.9	2.4	4.0	3.2	2.2	3.1
Coordination	2.6	2.8	3.0	2.3	5.9	2.7	1.6
Medical care	3.4	2.2	5.4	2.1	3.8	1.8	1.7
AOD testing	2.9	1.7	2.8	2.5	2.4	2.2	1.8
Family counseling	2.4	1.7	3.0	2.5	4.2	1.5	1.5
Detoxification	0.2	0.6	0.6	0.5	1.3	0.5	0.6

Table 40 shows the percentage who complete treatment by region. The percentages are slightly above two-thirds in the Northeast, the Southwest, and the Southeast and slightly below 60% in the Northwest, the West Central, and the Metro.

Table 40. Percentage Who Complete Treatment by Region of Residence

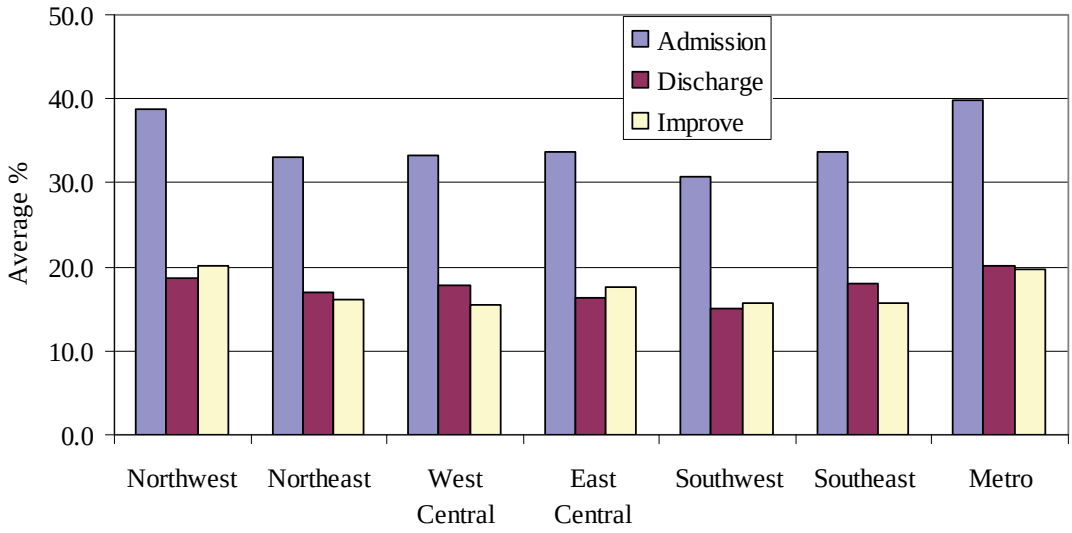
	Region of Residence						
	North-west	North-east	West Central	East Central	South-west	South-east	Metro
% complete	59.9	66.9	59.7	64.7	67.2	68.2	58.6

Table 41 presents information on the percentage within the different regions who exhibit problems on the NOMS measures at admission and discharge. The last three rows of the table, shown also in Figure 9, present the average percentage with problems over all dimensions. Clearly, a greater percentage of patients from the Northwest and the Metro enter and leave treatment with problems, but a greater percentage of patients from these regions also improve during treatment. At admission and discharge, greater percentages of patients from the Metro exhibit problems on all dimensions but arrests and social support, which are more prevalent in the Northwest. Improvement tends to be greater in these regions also, although the West Central shows slightly greater improvement in labor force participation, and the East Central shows greater improvement in social support.

Table 41. Percentage with Problems on NOMS at Admission and Discharge by Region of Residence

NOMS	Time	North-west	North-east	West Central	East Central	South-west	South-east	Metro
Homeless	Admission	3.9	3.4	5.1	4.6	3.3	3.7	10.1
	Discharge	1.5	1.9	2.5	2.0	1.1	3.3	5.8
	Improve	2.4	1.4	2.6	2.6	2.2	0.5	4.4
Labor force	Admission	55.4	53.7	57.2	54.1	50.7	55.2	59.7
	Discharge	50.1	52.1	51.6	49.7	47.5	49.8	57.0
	Improve	5.4	1.6	5.6	4.5	3.3	5.4	2.7
Arrested	Admission	20.1	13.3	12.9	11.5	12.3	13.5	11.4
	Discharge	6.5	5.5	5.7	4.8	4.7	5.7	4.3
	Improve	13.6	7.8	7.3	6.7	7.5	7.8	7.1
Alcohol	Admission	47.0	41.7	36.4	43.3	36.9	40.7	53.9
	Discharge	12.8	10.3	12.4	13.5	10.6	12.8	17.1
	Improve	34.2	31.4	24.0	29.8	26.2	28.0	36.8
Drugs	Admission	35.1	29.8	27.5	31.5	26.2	33.8	43.1
	Discharge	10.1	9.2	9.2	11.4	9.0	14.3	16.7
	Improve	25.0	20.6	18.3	20.1	17.2	19.5	26.4
Support	Admission	70.8	56.7	60.5	57.6	55.1	55.6	61.2
	Discharge	30.3	23.3	25.3	16.2	17.6	22.4	19.9
	Improve	40.5	33.4	35.2	41.5	37.5	33.2	41.3
Average	Admission	38.7	33.1	33.3	33.8	30.7	33.8	39.9
	Discharge	18.6	17.1	17.8	16.2	15.1	18.0	20.1
	Improve	20.2	16.0	15.5	17.5	15.7	15.7	19.8

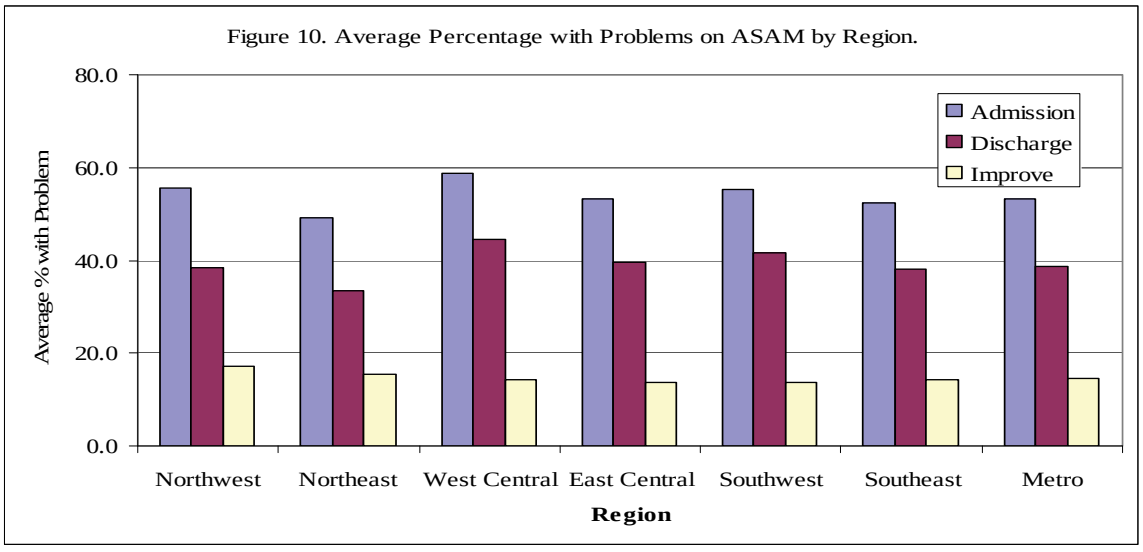
Figure 9. Average Percentage with Problems on NOMS by Region.



Similar data on the ASAM measures appear in Table 42 and Figure 10. Higher percentages of patients in the West Central have problems on four of the six dimensions at both admission and discharge. Unfortunately, the percentage who show improvement in the West Central is not similarly high. In fact, the highest improvement tends to occur in the Northwest. Unlike the NOMS measures, the Northwest and Metro regions do not show high levels of problems at either admission or discharge.

Table 42. Percentage with Problems on ASAM at Admission and Discharge by Region of Residence

ASAM Dimension		Region						
		North-west	North-east	West Central	East Central	South-west	South-east	Metro
Intoxication/ Withdrawal	Admission	7.6	7.1	8.0	6.6	6.4	6.9	10.5
	Discharge	5.0	4.2	5.9	3.3	3.7	4.2	5.4
	Improve	2.6	2.9	2.2	3.3	2.7	2.7	5.1
Biomedical	Admission	14.3	16.2	22.2	14.7	12.3	9.3	14.6
	Discharge	11.1	10.5	17.3	9.7	9.4	6.5	9.9
	Improve	3.2	5.6	5.0	5.0	2.9	2.8	4.8
Emotional/ Behavioral/ Cognitive	Admission	60.6	50.6	65.6	57.8	61.2	59.6	62.1
	Discharge	42.7	36.1	50.5	45.5	49.3	46.3	45.7
	Improve	17.9	14.5	15.1	12.3	11.9	13.2	16.4
Readiness to Change	Admission	75.3	57.7	76.0	64.2	71.7	65.7	59.1
	Discharge	49.3	37.2	55.8	46.1	51.1	43.5	43.3
	Improve	26.0	20.5	20.3	18.1	20.5	22.2	15.8
Relapse Potential	Admission	92.6	89.9	92.8	93.4	93.5	91.4	93.5
	Discharge	63.9	62.8	71.5	69.5	72.5	66.7	68.9
	Improve	28.7	27.0	21.4	23.9	21.0	24.6	24.5
Recovery Environment	Admission	82.8	73.2	88.0	82.7	86.8	81.1	79.5
	Discharge	58.0	50.7	66.9	63.2	64.3	61.0	58.5
	Improve	24.8	22.6	21.1	19.5	22.5	20.1	21.0
Average	Admission	55.5	49.1	58.8	53.2	55.3	52.3	53.2
	Discharge	38.3	33.6	44.6	39.6	41.7	38.0	38.6
	Improve	17.2	15.5	14.2	13.7	13.6	14.3	14.6



Primary Substance

In order to allow comparability with a report issued by Falkowski (2009), we replicate her Exhibit 4, which shows how gender, race, age, and route of administration are distributed within categories of primary substance, with statewide data. Following Falkowski, we omit those with "other" primary substances from the table. These data, shown in Table 43, show that males are the modal gender for all substances but other opiates. Whites are the modal racial group for all substances, but users of cocaine/crack, heroin, and, to a lesser degree, marijuana are disproportionately likely to be African American. The modal age group for alcohol, cocaine/crack, heroin, and other opiates is 35+, whereas the mode for marijuana is 18-25, with many users under 18. The mode for methamphetamine is intermediate at 26-34. Finally, most people drink alcohol; smoke marijuana, cocaine/crack, and methamphetamine; inject heroin; and take other opiates orally. The general patterns are similar to those observed by Falkowski (2009) in Minneapolis and St. Paul.

Table 43. Percentage Distribution of Gender, Race, Age, and Route of Administration by Primary Substance

Total Admissions (n=48,019)	Alcohol	Marijuana	Cocaine/ Crack	Metham-phetamine	Heroin	Other Opiates
	n=26,656	n=8292	n=3654	n=3527	n=1945	n=2842
	55.5%	17.3%	7.6%	7.3%	4.1%	5.9%
Gender						
Male	68.7	74.3	60.7	57.3	67.5	48.0
Female	31.3	25.7	39.3	42.7	32.5	52.0
Race						
White	78.3	67.1	44.3	88.5	61.9	75.6
African American	7.6	14.6	41.8	1.0	27.9	3.0
Hispanic	3.2	5.5	5.0	3.3	3.3	1.9
American Indian	8.7	8.9	5.6	3.6	3.5	16.6
Asian	.7	1.1	.7	1.6	.7	1.4
Other	1.4	2.9	2.7	2.0	2.6	1.5
Age						
17 and younger	3.5	32.9	2.4	2.0	.5	1.9
18-25	19.0	38.4	12.5	30.9	25.6	24.6
26-34	21.1	16.3	21.3	36.6	24.6	31.4
35+	56.4	12.5	63.9	30.5	49.3	42.0
Route of administration						
Smoking		97.3	70.5	65.2	5.0	2.7
Sniffing			24.6	9.4	28.3	16.6
Injecting			2.4	16.8	65.4	10.8
Oral	100.0	1.8		6.7		68.9
Other		.8	2.5	2.0	1.2	1.1

Conclusions

We began by noting that substance abuse and dependence are serious problems in Minnesota and the United States. We end by noting that treatment can be an effective antidote to abuse and dependence. About two-thirds of those who entered treatment successfully completed it. Treatment led to substantial declines in five of the six measures prescribed by SAMHSA as part of its system of monitoring outcomes: homelessness, arrests, use of alcohol, use of other drugs, and lack of social support. In fact, more than 60% of those who exhibited problems on the last four measures at admission did not exhibit such problems at discharge. Measures prescribed by ASAM exhibited substantial but less spectacular declines. In general, more than 25% of those who were judged to be problematic on an ASAM dimension at admission were judged to not be problematic at discharge.

But the benefits of treatment are not distributed evenly across all people who receive it. Table 44 summarizes differences in the outcomes of treatment. We categorize outcomes as positive (+), neutral ( ), or negative (-), with the caveat that these summary measures are relative to those achieved by the other groups. A negative indicator does not mean that outcomes were negative but simply that they were not as positive as those achieved by other groups. The outcomes that we consider are rates of completion, percentage with problems on NOMS and ASAM at discharge, and the percentage who improve in NOMS and ASAM. The final three columns tally the number of positive and negative entries and the difference between the numbers of positive and negative entries. The last entry is a global measure that summarizes the outcomes of treatment, with more positive numbers indicating more positive outcomes.

Racial differences in outcomes are clear. Treatment outcomes are most positive for whites and Asians, intermediate for Hispanics, and poorest for African Americans and American Indians. We want to emphasize, though, that members of all groups benefit substantially from treatment; in fact, African Americans and American Indians show more improvement on NOMS than do other groups.

Men have more positive outcomes than women do, but women show greater improvement on NOMS.

Those under 18 have less positive outcomes, while those over 64 have high completion rates and low levels of problems on the ASAM dimensions. The high percentage of seniors who show problems on NOMS is largely due to their lack of involvement in the labor force.

There are also substantial regional differences in outcomes. Patients from the West Central part of the state received the lowest rating with low completion rates and relatively poor showing on the ASAM measures, while those from the Northeast have high completion rates and a positive showing on the ASAM measures.

Table 44. Summary of Racial Differences in Outcomes of Treatment

		NOMS		ASAM				
	Com-plete	Dis-charge	Im-prove	Dis-charge	Im-prove	N of +	N of -	Differ-ence
Race								
White	+	+	-	+	+	4	1	3
African American	-	-	+		-	1	3	-2
American Indian	-		+	-	-	1	3	-2
Hispanic		+	-		+	2	1	1
Asian	+	+	-	+	+	4	1	3
Gender								
Male	+	+	-	+	+	4	1	3
Female	-	-	+	-	-	1	4	-3
Age								
8-17	-	+	-	-	-	1	4	-3
18-24	-		+			1	1	0
25-44			+			1	0	1
45-64	+					1	0	1
65+	+	-	-	+	+	3	2	1
Region								
Northwest	-	-	+		+	2	2	0
Northeast	+		-	+	+	3	1	2
West Central	-		-	-		0	3	-3
East Central		+			-	1	1	0
Southwest	+	+	-	-	-	2	3	-1
Southeast	+		-			1	1	0
Metro	-	-	+			1	2	-1

Despite these differences, it should be remembered that all of the groups that we examined have completion rates above 50% and show substantial improvement on both NOMS and ASAM.

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