

Treatment for Chemical Dependency in Minnesota 2000-2005

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Performance Measurement and Quality Improvement
Minnesota Department of Human Services
July 2006



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This report describes who received treatment for chemical dependency in Minnesota between 2000 and 2005 and how effective the treatment was. Data are drawn from the Drug and Alcohol Abuse Normative Evaluation System (DAANES), which results from a federal requirement that all providers of treatment for substance abuse who receive federal funding submit data on all clients that they treat. Since almost all providers in Minnesota receive some federal funding, DAANES contains data on the vast majority of clients who receive treatment in Minnesota.

EPISODES OF TREATMENT

Between January 1, 2000 and December 31, 2005, there were 274,953 episodes of treatment recorded in DAANES, with about 46,000 episodes in each year. The providers of treatment recorded the primary substance being abused for each episode; 54% of the episodes involve alcohol, 20% involve marijuana, 10% involve cocaine, and 10% involve amphetamines. Over time, the prevalence of amphetamines increased from 4% in 2000 to 16% in 2005, primarily at the expense of alcohol, which declined from 59% to 48%.

Several other characteristics of clients highlight who gets treatment in Minnesota. About two-thirds (69%) of admissions involve men, 89% involve adults, and 74% involve whites. The two most frequently admitted minorities are African Americans (12%) and American Indians (8%); both of these groups are overrepresented in treatment, given their share of the population. Between 2000 and 2005, these numbers changed very little, although admissions increased slightly for females (2%), adults (2%), and whites (2%).

Table 1. The Distribution of Admissions to Treatment and the Total Population by Region of Residence.

Region	Admissions	Population ^a	Difference
Northeast	6.9	6.3	0.7
East Central	10.0	11.0	-1.0
Metro	55.8	53.5	2.3
Southeast	7.1	9.4	-2.2
Southwest	8.2	9.9	-1.7
West Central	6.4	6.1	0.4
Northwest	5.5	3.9	1.6

^a Estimates for July 1, 2005, U.S. Census Bureau, American FactFinder.

The large number of counties in Minnesota, 87, makes geographical comparisons difficult, but the Chemical Health Division of DHS combines counties into seven regions. Table 1 shows these regions and the percentage of admissions for residents of each. The majority of admissions (56%) are for residents of the Twin Cities. This may result from disproportionate problems with substances in the Twin Cities, or it may result from the simple concentration

of people in the Twin Cities. The fourth column in the table shows the proportion of Minnesota's population that resides in each area. Comparing the distributions of admissions and population reveals that the two are very similar. The last column in the table shows the difference between the two, with a positive number indicating overutilization, relative to population. Since no number exceeds 3%, it appears that admissions are distributed approximately according to population. In fact, the index of dissimilarity, which is often used to compare distributions, is only 5%; this says that only 5% of admissions would need to be from a different region for the distributions to be identical. This is not to say that treatment is appropriately distributed across Minnesota, since we would want it to be distributed according to need for treatment (which we do not address in this report). Furthermore, the fact that the index of dissimilarity is low for regions does not guarantee that it is low for counties. This result does ensure, though, that treatment is not distributed terribly badly in the state. The regional distribution is quite stable over time.

Other relevant features of treatment episodes are the setting in which it occurs, how long it takes, and whether clients complete it. Treatment occurs in four settings, with 50% in outpatient, 34% in inpatient, 10% in halfway houses, and 6% in extended care. The percentage in outpatient increased by 4% between 2000 and 2005, with a corresponding decline in inpatient. Since stays in outpatient tend to be shorter, it is not surprising that the average length of stay declined from 47 to 42 days. The proportion of clients who completed the treatment prescribed for them remained fairly constant at about 65%.

LINKING EPISODES

Since providers submit data on each episode of treatment as it occurs, the data are organized by episode and not person. This makes studying the entire span of treatment for individuals difficult, so most previous analyses have simply compared the outcomes of different episodes of treatment as if they were independent, which, of course, they are not. In order to address this, we attempt to link episodes of treatment that occurred to the same individuals and combine them so that we can study what happens to people over the course of several years.

In order to link episodes, we need some way to identify unique individuals. While the data lack any one identifier that would apply equally well to all episodes, four variables do a reasonable job. These four are (1) the first and third letters of the first and last name, (2) the last four digits of the Social Security Number, (3) the date of birth, and (4) the Person Master Index (PMI), which is a unique identifier for publicly funded clients. We began by requiring that all four be identical and then relaxed the criteria until we arrived at a solution that identified the true matches without too many false positives. Our preferred requirement is that episodes must match on at least two of the variables to be linked. We also considered letting a match on PMI suffice to link publicly funded episodes, but this resulted in too many false positives. By linking episodes together in this process, we estimate that 151,766 people received treatment during this period. The number of episodes per person ranged from 1 to 25 with a mean of 1.8. More people had one episode (60%) than any other number. The distributions of sex, age, ethnicity, and region are very similar to those observed for admissions in the previous section.

We then defined "spans" of treatment episodes, where a span is a series of episodes for which the breaks between episodes are no more than 30 days. For example, a person who

was discharged on April 15, 2003 and admitted again on April 30, 2003, would still be in the same span of treatment. However, a discharge on May 15 and subsequent admission on July 1 would be defined as the end of one span and the beginning of another. In other words, a span of treatment is a period of more or less continuous treatment from one or more providers. A typical span might progress from inpatient to outpatient to halfway house, but many different orderings of these settings occur. The number of spans per person ranged from 1 to 14 with a mean of 1.4. About seven in ten clients had exactly one span.

Our main interest in studying spans of treatment is to learn what happens to clients when spans end. In particular, we want to learn whether treatment helps clients to abstain from using alcohol and drugs; to improve their relations with family, friends, and others; to maintain stable employment; to lead crime-free lives; and, in general, to be less dependent on substances and state services. We plan to investigate some of these issues by linking with other sources of data, such as data on incarceration and use of cash assistance, but those analyses will appear in future reports. The current data allow two measures of outcomes: does the client complete treatment and does the client remain out of treatment for the year following discharge at the end of the span. Neither of these measures is ideal, but together they provide a reasonable view of how well the client is doing. Previous research shows that completion is related to post-treatment abstinence, and returning to treatment almost always indicates a lack of abstinence. Nevertheless, both measures are imperfect proxies for abstinence: many who complete treatment use substances, and remaining out of treatment does not necessarily mean that clients remain abstinent. Furthermore, providers can “bend” the definition of completion in order to appear more successful. So while we speak of completion and remaining out of treatment as indicators of success, they are not perfect indicators.

When the client is discharged from treatment, providers must report why the client left. We omit those who died and contrast those who completed treatment with all others. To assess whether the client is readmitted to treatment, we examine a period of one year after the final discharge in the span. For each individual, we choose the most recent span that ended prior to December 31, 2003, in order to allow for a full year after discharge for the client to be readmitted. For fairly complicated methodological reasons, we restrict attention to spans that ended in 2003; not doing so includes too many spans in the early years that are not followed by readmissions and results in an artificially low rate of readmission. A fortunate consequence of this decision is that it tends to focus on more recent practices in treatment facilities.

OUTCOMES

Of the 32,523 spans that we examine in 2003, 69% of clients completed the last episode in the span, and 86% of clients remained out of treatment for the year following discharge. It appears, therefore, that treatment was fairly successful for most of these clients.

As might be expected, treatment was more successful for some than for other clients. Table 2 provides rates of completion and of remaining out of treatment for various categories of clients.

Table 2. Percent of Clients in 2003 Who Completed Treatment and Remained out of Treatment for at Least One Year by Sex, Age, Ethnicity, Region, and Primary Substance Abused.

Factor	Category	% Complete	% Out of Treatment
Sex	Male	69.6	86.4
	Female	65.9	84.6
Age	Adolescent	62.0	81.8
	Adult	69.2	86.3
Ethnicity	White	71.8	87.0
	Black	56.7	81.9
	American Indian	59.9	80.6
	Hispanic	62.6	87.0
	Asian	66.7	87.7
	Other	57.7	82.2
Region	Northeast	73.0	87.8
	East Central	70.2	86.1
	Metro	68.3	84.2
	Southeast	70.1	86.4
	Southwest	68.2	86.4
	West Central	56.6	83.5
	Northwest	67.2	82.7
Substance	Alcohol	75.1	87.2
	Cocaine	64.2	86.9
	Crack	55.1	79.2
	Marijuana	62.0	86.0
	Opiates	58.4	81.5
	Amphetamines	60.6	84.2
Previous Episodes	0	73.9	90.1
	1	66.4	85.8
	2	61.8	81.9
	3	58.4	77.0
	4	55.8	72.4
	5+	53.1	64.2
Complete	No	-	78.6
	Yes	-	89.2

Sex. Males are a bit more likely to complete treatment and to remain out of treatment for the year following discharge. Neither difference is very large, but both are statistically significant.

Age. Adults are more likely to complete treatment and to remain out of treatment for the year following discharge. The differences are substantial and significant.

Ethnicity. Although the rankings of ethnic groups by rates of completion and staying out of treatment differ a little, several generalizations hold. First, whites and Asians tend to enjoy the most success, with whites showing a slightly higher rate of completion and Asians showing a slightly higher rate of staying out of treatment. Second, blacks and American Indians tend to have the least success, with blacks showing the lowest rate of completions

and American Indians showing the lowest rate of remaining out of treatment. Hispanics tend to be intermediate, but their success at remaining out of treatment rivals that of whites. “Others,” who tend to be multi-ethnic, have relatively low rates of success.

Region. Treatment tends to be more successful in the eastern than the western half of the state, with the metro intermediate. The northeast exhibits the highest rates of completion and remaining out of treatment. At the other end of the continuum, the northwest and west central show the lowest rates of completion and remaining out of treatment. Contrary to the general tendency, the southwest has the second highest rate of remaining out of treatment.

Primary substance. As might be expected, rates of success vary by the substance being abused. Those whose primary problem is with alcohol are the most likely to complete treatment and to remain out of treatment, whereas those whose primary problem is with crack or opiates are the least likely to complete and to remain out of treatment. Two other features of the table merit attention. First, those whose primary substance is cocaine are more likely to face success than are those whose primary substance is crack. Despite the fact that the drugs are the same, the rates of success are quite different. Second, although methamphetamine is getting the most notice these days, crack and opiates appear to be considerably more difficult habits to kick.

Previous Episodes of Treatment. The likelihood of having a successful episode of treatment depends closely on how many previous episodes of treatment the client has had since 2000. About 74% of those in their first episode complete treatment and 90% remain out of treatment for the year following discharge. Among those with five or more previous episodes during this period, the percent completing is lower by 21%, and the percent remaining out of treatment is lower by 26%.

Association between completion and remaining out of treatment. Those who complete treatment are considerably more likely to remain out of treatment.

SUMMARY

Treatment admissions in Minnesota disproportionately involve residents of the Twin Cities metropolitan area and northern Minnesota, men, African Americans, and American Indians. Although more admissions are for alcohol than for any other substance, the prevalence of methamphetamine increased from 2000 to 2005.

We employ two measures to assess the success of outcomes: completion of treatment and remaining out of treatment for the year following discharge. We link consecutive episodes of treatment and focus on the last episode prior to 2004; 69% of clients complete the episode, and 86% remain out of treatment for the year following discharge. Success is not distributed uniformly across the state. Males, adults, whites and Asians, those in the eastern half of the state (but not the metro), those whose primary substance is alcohol, and those with fewer previous episodes of treatment tend to be more successful.

Future reports in this series will delve more deeply into the issues that have been examined briefly in this report. Of special interest is the relationship between the number of prior episodes of treatment and outcomes, since individuals with many episodes tend to be the costliest for the state and to suffer the most from addiction.