

# Substance Abuse Treatment Processes and Outcomes in Day/Outpatient Health Maintenance Organization Setting



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## Abstract

Previous research has determined that substance abuse treatment (SAT) is effective under managed care within residential treatment and outpatient treatment, but we have not followed patients after treatment completion. This study examined SAT in both an intensive day treatment and an outpatient treatment program in a large health maintenance organization, with mandatory 12-step participation. We conducted interviews ( $N = 72$ ) at the beginning, upon completion, and 6 months after completion of treatment. Variables measured were substance use, quality of life, symptoms, functionality, and patient satisfaction as well as Drug Abuse Treatment and Assessment Resources (DATAR) score and treatment completion. Before treatment, DATAR scores were high: 7.68 on a scale of 1–9, indicating serious addictions. Patients showed significant improvement in all variables measured, upon completion of SAT, and additional improvement again 6 months later. Eighty-three percent of subjects completed treatment. Unique advantages of treatment in this setting were discussed, as well as the importance of referral and support from nurses and other healthcare professionals.

**Keywords:** addiction treatment, chemical dependency treatment, substance abuse treatment

has primarily been shown to be related to duration of treatment. Under managed care (MC), treatment covered by private insurance tends to be relatively brief: less than 25 days for intensive inpatient treatment or residential treatment (RT) and 60–120 days for outpatient treatment or day treatment (DT; McNeese-Smith et al., 2007; Weisner, 2000).

Most outpatient (OP) programs have longer duration but little intensity (hours of treatment/week), whereas inpatient and RT have brief duration but greater intensity. Previous research by this investigator (McNeese-Smith; National Institute of Health, Drug Abuse 13403) did, in fact, compare outcomes from different settings and found that OP treatment and RT were both effective (McNeese-Smith et al., 2007). However, this previous research revealed that 90% of RT clients completed treatment whereas only 70% of OP treatment clients completed treatment. However, we had not evaluated DT, which has a higher intensity than OP, and whether treatment of varying intensities has different outcomes in the months after completion of treatment.

This research studied a population in a large health maintenance organization (HMO) chemical dependency treatment program for (a) describing and analyzing processes of treatment of this sample who participated in OP, DT, or a combination of the two and (b) determining the relationship of these processes to outcomes (substance use, completion of treatment, and quality of life) at the end of treatment and 6 months after treatment.

This study uses a longitudinal, repeated measures design to examine SA treatment (SAT) in a day and/or OP setting, which provides treatment to clients insured through a large HMO Foundation under MC. Data were collected at the beginning of treatment, upon program completion, and 6 months after treatment. Permission to conduct the study was received from the University of California, Los Angeles, Research Office for Protection of Human Subjects and from the internal review board of the HMO organization. Anonymity and confidentiality of subjects, staff, and the organization were assured.

## SETTING AND TREATMENT

The HMO MC organization combines insurance and medical management and provides day and/or OP treatment to clientele in a building separate from the hospital. Thus, the referring physicians, administration, and treatment program are all under the same organization and have similar goals. Clients must be HMO members and be self-referred or physician referred for

Substance abuse (SA) is one of the most serious public health problems in America, but treatment has been found to be effective. However, treatment effectiveness

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treatment. They are assessed by the SAT physician and the treatment team and referred to the appropriate treatment method, which may be RT in a different setting, DT, or OP treatment (RT is not included in this study). Those in day or OP treatment may be moved between these two programs, based on their treatment needs. DT involves 6.5 hours of treatment, Monday through Friday, and 3.5 hours on Saturday. Mandatory 12-step program attendance is required every evening and on Saturday and Sunday. OP treatment involves 2 hours of treatment, 2–3 days per week, as prescribed by the individual therapist. It may occur in conjunction with employment, and 12-step program attendance is required as prescribed by the therapist. Treatment in either program involves medical assessment and individual and group therapy. Treatment is not affected by levels of co-pay or different contracts. Upon treatment completion, all clients are referred back to their primary care physician and 12-step programs for follow-up.

## Sample

A convenience sample of adults 18 years and older ( $N = 72$ ), stratified to increase women, and those of ethnic minority status were selected to provide sufficient numbers for data analysis. Subjects had to be English speaking, able to respond to interview questions, and willing to participate in the study.

## Procedure

Data were collected from SAT clients at the beginning of treatment, within 30 days of completion of treatment, and then 6 months after completion of treatment. Consent included permission to examine the medical record and to follow up 6 months after treatment. Each participating client received \$15.00 at the end of the first meeting, \$20.00 upon completion of treatment, and \$30 at the session 6 months after treatment. The interview and researcher-completed questionnaire took approximately 40–60 minutes.

The design allowed an evaluation of the outcomes of treatment of MC clients. This study used analysis of the client record and a semistructured interview guide/questionnaire with researcher completion to determine client demographics, quality of life, and alcohol and/or drug use before treatment. Regular urine samples are collected by the treatment program during treatment, and the result assists the treatment staff to determine treatment needs. Upon discharge, completion of treatment was determined through the medical record, and quality of life and drug and/or alcohol use were determined at the end of treatment by researcher interview and completion of the semistructured interview guide/questionnaire. Six months after completion of treatment, quality of life and drug and/or alcohol use after treatment were again determined by researcher interview and completion of the semistructured interview guide/questionnaire.

## Instruments and Measurements

All instruments (except the Texas Christian University [TCU] Drug Dependence Screen) were examined for an earlier pilot study by a judge panel of seven and found to be valid in relation to content and purpose and cultural sensitivity. Instruments were

also evaluated by a community advisory board of SAT clients. Feedback was used to make minor revisions in wording. We have found all instruments easy to administer by the researcher, and subjects had no difficulty understanding and answering the questions. All of these instruments were also used in previous studies (McNeese-Smith et al., 2007) and found to be valid and reliable.

*Client characteristics.* Demographic information was collected on an instrument titled “Characteristics of the Client.” Questions address gender, age, marital status, residence, highest level of education, employment status, and ethnicity. On test–retest (1 week apart) examination in the pilot study, 76% of items were identical in the first and second tests. Demographic variables will be used to identify possible covariates.

*Severity of addiction.* The TCU Drug History Form was used to collect detailed descriptive information on the client’s alcohol and/or drug use before treatment (Simpson & Chatham, 1998). The form assesses use of alcohol, inhalants, marijuana, hallucinogens, crack, cocaine, heroin and cocaine mixed, heroin, methadone, other opiates, methamphetamine, other amphetamines, minor tranquilizers, barbiturates, other sedatives, and others (specify). Items cover lifetime use, age of first use, frequency of use in the past 6 months, and use during the past month/year. This score ranges from 0 to 8, with higher scores indicating greater use (Simpson & Joe, 1993). Good results regarding the reliability and validity of data collected in this self-report format have been reported (McNeese-Smith et al., 2007; Simpson, Joe, Dansereau, & Chatham, 1997). This instrument was also used, with minor revisions of periods, to measure and quantify self-reported alcohol and/or drug use upon completion of treatment and 6 months after treatment.

The TCU Drug Dependence Screen (TCU, 1998) was used in the RO3 study to provide a second measure of alcohol and/or drug use. This instrument has eight questions about the effect of alcohol and drugs on the client, two questions about the client’s drug use history, and three questions about previous treatment and the client’s perception of his or her drug use problem. Scores on this Drug Dependence Screen, also known as the Drug Abuse Treatment and Assessment Resources (DATAR) score, range from 1 to 9. The Drug Dependence Screen is discussed in detail in the DATAR Forms Manual (Simpson & Chatham, 1998) and has been used successfully by Dr. Longshore (Anglin et al., 1996) and by the present author (McNeese-Smith et al., 2007).

*Outcome variables.* Substance use after treatment was measured in all three interviews using the drug history form from the TCU Forms Manual (Joe, Simpson, & Broome, 1998; see discussion above). Quality of life was evaluated in all three interviews, using the Treatment Outcomes Profile (TOP) instrument. TOP was selected to measure quality of life, because it provides a global measure as well as a specific measure of components of four aspects of quality of life: quality of life, symptoms, level of functioning, and client satisfaction with services. It is psychiatric/SA client specific, is subjective, and measures the clients’ feelings (Fries et al., 1993). The first three portions were administered to compare client status before and after treatment. This enables identification of outliers among the clients, particularly in relation to psychiatric problems. Client satisfaction was

measured upon completion of treatment. The TOP instrument, developed by Holcomb, Parker, and Leong, 1997, has 39 statements to which the respondent indicates level of agreement by checking strongly disagree, disagree, neutral, agree, or strongly agree. The first 10 statements measure quality of life, including self-esteem, social support, health, and activity. Example is "I feel good about myself." The second section contains nine statements that measure symptoms including depression, anxiety, and paranoia/hostility. Example is "I feel that I am being watched or talked about by others." Section 3 contains eight statements that measure level of functioning including disruptive behavior and living skills. Example of statements is "I have recently broken things or destroyed property." Section 4 measures satisfaction with services, including satisfaction with treatment, staff, and the environment. Example of statements is "I am satisfied with the services I received." Each section can be scored for each content area, such as health, as well as for the overall area such as self-esteem or symptoms.

Overall reliability was reported at .93 for quality of life. Subscales are reported elsewhere (Holcomb et al., 1997). In the R03-funded study, analysis shows reliability of .80 for interview 1 and .86 for interview 2 of the subscales, with the scale as a whole (McNeese-Smith et al., 2007). In this study, Cronbach's alpha was used to measure reliability of each of the instruments: quality of life, .84; symptoms, .81; functioning, .71; and the overall TOP alpha, .91.

## DATA ANALYSIS

Data analysis was performed using SAS version 9.3. Significance was set at  $p = .05$ . Baseline differences between treatment completers and noncompleters were compared using Chi-squared test for categorical and  $t$  test for continuous client characteristics, including demographic and severity of addiction variables. Gender and ethnicity differences for these variables were also explored using appropriate tests, including Chi-squared,  $t$  test, and analysis of variance methods. All outcomes were tested for baseline differences by the demographic and smoking status variables. Only gender and ethnicity were found to have significant differences for most of these outcomes. All the statistical models were then adjusted for gender and ethnicity. Differences in the drug use severity score, measured over four time points (6 months and 1 month before treatment, at the end of treatment, and 6 months after treatment), was modeled using generalized estimating equation method. In the absence of a comparison group, the model measured any differences in the drug use score of the respondents before, during, and after treatment completion. Generalized estimating equation model analysis was also used to ascertain change over time for the total TOP and its subscales, controlling for gender and ethnicity differences.

## RESULTS

Initial evaluation of these subjects indicated an overall DATAR (drug use severity score) of 7.68 on a scale of 1–9. Men averaged 7.53 with women higher at 7.93, but the differences were not

significant ( $p = .30$ ). The DATAR score also varied by ethnicity; particularly, the Hispanic score was higher at 8.09, but this was not significant. Demographic characteristics of the subjects are presented in Table 1. The only thing approaching significance by gender is that 85% of women smoked at the time of the study or in the past, compared with 67% of men ( $p = .08$ ).

Alcohol presented the greatest problem to 40 (55.6%) of the subjects in this study; methamphetamines were listed next as the greatest problem to 14 (19.4%); crack presented the greatest problem to 5 (6.9%); and heroin presented the greatest problem to 4 (5.56%). The second greatest problem was again alcohol to 20 (28%), with marijuana identified by 13 (18%), and methamphetamine followed closely for 12 (16.7%); cocaine was identified by 6 (8.33%); and other opiates were identified by 4 (5.6%). Thirty-four (47%) clients did not list a third problem drug, 11 (15%) listed marijuana as their third most serious problem, cocaine was listed by 6 (8.3%), and alcohol was listed by 6 (8.3%). This indicated that 66 of the 72 (92%) identified alcohol as their first, second, or third greatest problem.

Sixty (83.3%) of the 72 subjects completed treatment. There were no significant differences among those who completed treatment, by gender, ethnicity, education, marital status, or residence. However, older subjects were significantly more likely to complete treatment ( $p = .03$ ), and those who had never smoked were also significantly more likely to complete treatment ( $p = .03$ ). In fact, 100% of those who did not complete treatment were smokers, either now or in the past.

Substance use before treatment, upon completion of treatment, and 6 months after treatment is indicated in Table 2. Results are shown by gender and ethnicity. Men reported lower substance use both before and after treatment. Ethnicity differences indicated that Caucasians had higher substance use, followed by Hispanics, with African Americans indicating the lowest scores. However, only 12 African Americans were included in the study. None of these differences were significant.

Quality of life, symptoms, functioning, and the total TOP score (see Table 3) were evaluated at the beginning of treatment, upon treatment completion, and approximately 6 months after treatment completion. Quality of life increased significantly from 2.74 before treatment to 3.15 at treatment completion and then to 3.65 6 months after treatment. Likewise, symptoms improved significantly from Time 1 at 2.98 to 3.36 and again 6 months after treatment to 3.72. Functioning also improved significantly from before treatment at 3.52 to Time 2 at 4.05 and then to 4.40. The overall TOP score indicating overall quality of life also increased significantly from Interview 1 at 3.08 to Interview 2 at 3.52 and again at Interview 3 to 3.92. There were significant differences between men and women: women had lower scores before treatment for quality of life, functioning, and the overall TOP score, but treatment eliminated these differences. There were also differences by ethnicity, but these were not significant.

The mean scores for patient satisfaction with the treatment services were rated 3.75 at the end of treatment and 4.44 six months after treatment. In fact, all of the patient satisfaction scores were rated 3.75 or higher at the end of treatment and 4.31 or higher 6 months after treatment. To the question, "would you

<b>TABLE 1 Demographic and Baseline Characteristics of HMO Substance Abusing Patients (N = 72)</b>				
<b>Characteristics</b>	<b>Overall (N = 72)</b>	<b>Men (n = 45)</b>	<b>Women (n = 27)</b>	<b>p</b>
<b>Demographic Characteristics</b>	<b>%</b>	<b>%</b>	<b>%</b>	
Ethnicity				.41
Caucasian	31.94	26.67	40.74	
African American	16.67	15.56	18.52	
Hispanic	45.83	53.33	33.33	
Other	5.56	4.44	7.41	
Education				.50
≤High school degree	45.83	48.89	40.74	
≥High school degree	54.17	51.11	59.26	
Marital status				.42
Married/live together	43.06	46.67	37.04	
Divorced/separated/widowed/single	56.94	53.33	62.96	
Employed				.95
Yes	59.72	60.00	59.26	
No	40.28	40.00	40.74	
Residence				.58
Alone	18.06	20.00	14.81	
Spouse/significant other	81.94	80.00	85.19	
Ever been a cigarette smoker?				.08
Yes	73.61	66.67	85.19	
No	26.39	33.33	14.81	
	<b>Mean (SD)</b>	<b>Mean (SD)</b>	<b>Mean (SD)</b>	
Age (years)	39 (11.47)	39.78 (11.65)	37.70 (11.27)	.46

<b>TABLE 2 Drug Use Composite Scores 6 Months and 1 Month Before and 1 Month and 6 Months After Treatment by Overall Gender and Ethnicity</b>					
<b>Characteristics</b>	<b>Drug Use Score 6 Months Before Tx</b>	<b>Drug Use Score 1 Month Before Tx</b>	<b>Drug Use Score at the End of Tx</b>	<b>Drug Use Score 6 Months After Tx</b>	<b>p</b>
	<b>Mean (SD)</b>	<b>Mean (SD)</b>	<b>Mean (SD)</b>	<b>Mean (SD)</b>	
	<b>N = 72</b>	<b>N = 72</b>	<b>N = 61</b>	<b>N = 55</b>	
Overall	6.57 (1.83)	6.28 (2.43)	1.52 (1.68)	1.02 (1.37)	.0001
Gender					.51
Male	6.38 (1.85)	6.24 (2.31)	1.72 (1.76)	0.97 (1.19)	
Female	6.89 (1.78)	6.33 (2.66)	1.18 (1.50)	1.10 (1.64)	
Ethnicity					.46
Caucasian	7.13 (1.32)	7.61 (0.94)	1.79 (1.58)	1.71 (1.76)	
African American	5.42 (1.98)	4.42 (3.29)	0.50 (0.97)	0.50 (0.97)	
Hispanic	6.45 (1.99)	6.18 (2.27)	1.75 (1.76)	0.84 (1.11)	
Other	7.75 (0.50)	5.00 (2.94)	1.25 (2.50)	0.33 (0.58)	

Note. Tx = treatment.

**TABLE 3** TOP Scales and Subscales for Three Time Points of HMO Substance Abusing Patients ( $n = 72$ ): Time 1, Beginning of Treatment; Time 2, Treatment Completion; and Time 3, Approximately 6 Months After Treatment Completion

Characteristics	Time 1	Time 2	Time 3	<i>p</i>
	Mean ( <i>SD</i> )	Mean ( <i>SD</i> )	Mean ( <i>SD</i> )	
<b>Quality of life</b>				
Overall	2.74 (0.80)	3.15 (0.69)	3.65 (0.58)	.0004
Gender				.03
Male	2.88 (0.75)	3.17 (0.72)	3.70 (0.54)	
Female	2.50 (0.82)	3.20 (0.64)	3.56 (0.65)	
Ethnicity				.61
Caucasian	2.54 (0.78)	3.00 (0.80)	3.46 (0.84)	
African American	3.22 (0.66)	3.57 (0.61)	3.96 (0.41)	
Hispanic	2.64 (0.77)	3.04 (0.57)	3.62 (0.35)	
Other				
<b>Symptoms</b>				
Overall	2.98 (0.78)	3.36 (0.60)	3.72 (0.57)	.0008
Gender				.19
Male	3.06 (0.78)	3.40 (0.63)	3.75 (0.54)	
Female	2.85 (0.78)	3.29 (0.57)	3.66 (0.61)	
				.52
		3.25 (0.51)	3.49 (0.63)	
		3.66 (0.48)	3.94 (0.43)	
		3.32 (0.65)	3.75 (0.53)	
<b>Functioning</b>				
Overall	3.52 (0.72)	4.05 (0.38)	4.40 (0.69)	.0003
Gender				.006
Male	3.69 (0.70)	4.05 (0.41)	4.40 (0.36)	
Female	3.23 (0.69)	4.03 (0.33)	4.40 (0.51)	
Ethnicity				.43
Caucasian	3.40 (0.65)	3.95 (0.46)	4.27 (0.49)	
African American	3.72 (0.65)	4.18 (0.21)	4.56 (0.33)	
Hispanic	3.48 (0.74)	4.04 (0.38)	4.43 (0.37)	
Other				
<b>TOP</b>				
Overall	3.08 (0.69)	3.52 (0.47)	3.92 (0.44)	.0003
Gender				.01
Male	3.21 (0.67)	3.54 (0.50)	3.95 (0.39)	
Female	2.86 (0.68)	3.48 (0.44)	3.88 (0.53)	
Ethnicity				.38
Caucasian	2.91 (0.63)	3.40 (0.49)	3.74 (0.59)	
African American	3.44 (0.60)	3.80 (0.37)	4.16 (0.35)	
Hispanic	3.03 (0.71)	3.47 (0.45)	3.93 (0.30)	

return for help?”, patients rated this 4.13 at the end of treatment and 4.64 six months after treatment completion.

## DISCUSSION

This research studied a population in a large HMO chemical dependency treatment program for evaluating the processes of treatment in relation to the outcomes of substance use, completion of treatment, quality of life, and patient satisfaction at the end of treatment and 6 months after treatment in this MC setting. All patients were either physician referred or self-referred for treatment. All treatment in this setting was done through day and OP treatment, depending on severity of the addiction, the patient's personal commitment to the treatment, and the patient's ability to attend treatment during the day because of work requirements. Decisions were made by the treatment staff for each patient, and patients could move back and forth between DT and OP, depending on his or her progress and needs. Administrative statistics indicated that subjects averaged 6 weeks of DT (24 hours per week) and an additional 3 months of OP treatment (4.4 hours per week). This would total 200 hours of treatment plus the hours of 12-step programs that were required. This is slightly more than patients received in RT, and about four times as many hours as those who attended OP treatment received in previous research (McNeese-Smith et al., 2007). However, some patients would stay a short time and some 6 months or more. The researcher was told by the administrative team that the whole treatment premise was based on patient need and not dictated by an external model or insurance company.

The initial interview ( $N = 72$ ), completed as soon as possible after admission, involved an assessment of the patient's severity of addiction and the drugs causing the most serious problem. It is important to note that alcohol was the most serious drug for over 55% of these patients; alcohol was also the drug listed second as the greatest problem to 28% more and was listed as third by an additional 8%. This means that alcohol was a serious problem to almost 92% of these subjects. In addition, marijuana, which is becoming progressively more available, is identified as a significant problem to 36% of these subjects.

The severity of the individual's addiction was indicated by the DATAR score, which ranges from 1 to 9, and indicates the degree of lack of control when using drugs (including alcohol), a preoccupation with getting and using drugs and recovering from use; problems caused by drug use such as missing work and responsibilities; having accidents; emotional problems; problems with family, friends, work, or police; and physical and medical problems. These subjects had a mean score of 7.68, with men averaging 7.53 and women averaging 7.93, although the differences were not significant ( $p = .30$ ). Hispanics also had higher DATAR scores (8.09), but these also were not significant and were not consistent with the information they gave on substance use. However, in the previous study that had an  $N$  of 160, higher scores for gender and ethnicity were significant. Substance use 6 months before treatment averaged 6.38, on a scale of 1–8, for men and 6.89 for women as well as 6.24 for men 30 days before treatment and 6.33 for women. Quality of life was relatively low: 2.74 on a scale of 1–5, with men averaging 2.88 and

women averaging 2.50; symptoms indicated emotional difficulties. Functioning scores measured ability to function in their daily lives, and their scores indicated that they had difficulties but were still “making it.” Their average overall TOP mean score was 3.08, slightly lower for women (see Table 3). These scores indicate that these subjects were very affected by their drug use and their lives had become close to unmanageable, as described in the Big Book (Wilson, 2002). The DATAR scores are even higher than the previous population studied from residential and OP treatment (McNeese-Smith et al., 2007), and their substance use scores were also higher. Their various TOP scores of quality of life, symptoms, functioning, and the overall TOP scores were very comparable with the previous research. The SA scores in this study indicate that they were using drugs between 1 and 3 times daily, in an “out-of-control” manner. Data indicate that subjects had tried to cut down on drug use before coming into treatment, and women appear to have been more severely affected than men. There were also differences with ethnicity, but the differences for gender and ethnicity were not significant. This is consistent with earlier findings (McNeese-Smith et al., 2007, 2009), in which women had higher DATAR scores of 7.2 compared with men with 6.5, higher substance use scores, less days of sobriety, and lower quality-of-life scores before treatment.

After treatment completion, substance use was again measured, and use had decreased from a score of 6.28 just before treatment began to 1.52 ( $p = .0001$ ). The female mean score was even lower at 1.18. Because this is a mean score, it is apparent that some individuals were still using, but the average was down significantly. The substance use score, on a scale of 1–8, had decreased over 400%.

Subject's quality-of-life scores also increased significantly. On a scale of 1–5, the quality-of-life score went up from an average of 2.74 to 3.15, with women even higher at 3.20. Symptoms had improved to 3.36, functioning was up to 4.05, and the overall TOP score was 3.52.

Previous research had examined treatment under MC and had shown that this treatment was successful. Moreover, this study measured the results again 6 months after treatment completion. Substance use had decreased further, with a mean score of 1.02. Quality of life had improved further with scores going up for quality of life from 3.15 to 3.65, symptoms from 3.36 to 3.72, functioning from 4.05 to 4.40, and the overall TOP score from 3.52 to 3.92. This is particularly exciting because it indicates that these subjects had really benefitted from their treatment and were continuing to progress. This may be because this program emphasized a 12-step program and required it throughout the entire treatment time. Most of these subjects probably continued with AA or other 12-step programs and continued to benefit from this. However, this was not measured in this study. It is also possible that other positive influences were present, such as continued support from the subject's physician or other clinic staff. In addition, those who did not participate in the third interview may have been subjects with higher substance use and lower quality of life, and thus, their absence improved the mean scores.

Another very positive report is that over 83% of these subjects completed treatment, regardless of gender and ethnicity.

These scores are close to those we measured in RT (90%), where the length of stay averaged 22 days and higher than those in OP (70%). Women were likely to complete treatment despite their more serious effects from drug use. These results were similar to those from previous research (McNeese-Smith et al., 2007). Demographic variables that had an effect on treatment completion were age and smoking: Older subjects were more likely to complete treatment, and those who had smoked were less likely to complete treatment. In fact, 100% of those who did not complete treatment were smokers in the present or in the past. Future research needs to further examine the relationship of smoking to addiction and SAT outcomes.

This particular treatment program also had some unique advantages. Because physicians, administration, and the overall healthcare program are all under one umbrella with the healthcare insurance, they did not seem to be in conflict with one another as is usually seen with treatment organizations that receive payment from an outside insurance company. The physician and other healthcare providers are involved with the patient and may be the point of referral, and the patient returns to the primary provider who can support her or his treatment goals. In addition, the addiction specialist physician and treatment team communicate with the patient's own physician to support the physician's involvement.

In every setting, nurses see patients who show signs of SA and should insist that organizations offer support and information to those who are affected. Educational programs should be provided to staff on a regular basis. We can have a tremendous effect on lives and families by encouraging those who show signs of SA to seek treatment. Our research has shown that treatment is usually effective in a variety of settings and was certainly successful in this HMO where treatment is available within the organization.

There are limitations to this research: This design uses a convenience sample in one MC setting in Southern California; thus, we are unable to identify causality, and this limits generalizability. The research process, including the interviews, may affect SAT processes, and there may be differences among those who are willing to be involved. The chosen setting is quite unique and thus may prevent comparisons with all of the variables. In addition, attrition is always a limitation in SAT research, and this is especially true when interviews are done at the end of treatment and 6 months later.

In conclusion, SAT was very successful in this MC setting. Outcomes showed that 83% of these subjects completed treat-

ment. Mean scores for substance use were significantly reduced, and quality-of-life scores were significantly improved. Furthermore, in the follow-up interviews, results actually had improved 6 months after treatment.

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