

Factors Associated With The Receipt Of Treatment Following Detoxification

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Introduction

More than 18 million people who use alcohol and almost 5 million who use illicit drugs need substance abuse treatment, while, overall, less than one fourth of those needing treatment actually get it (Schneider Institute for Health Policy, 2001). Substance abuse treatment usually proceeds in three stages (Institute of Medicine, 1990): acute intervention (including emergency treatment and detoxification), rehabilitation (outpatient, residential or inpatient primary and extended care), and maintenance (aftercare, relapse prevention, or domicile care).

Each year at least 300,000 patients obtain inpatient detoxification in general hospitals and additional numbers obtain detoxification in other settings. Detoxification is the medical management or monitoring of acute alcohol or illicit drug intoxication and withdrawal. While detoxification may offer a gateway for patients into a substance abuse treatment program, detoxification alone will not lead to lasting improvements (Institute of Medicine, 1990; Gerstein & Harwood, 1990; Wesson, 1995). The receipt of continuing treatment/rehabilitation services following substance abuse detoxification is considered to be essential for successful recovery. Research has shown that patients who receive such services after detoxification have better outcomes in terms of drug abstinence (McCusker, Bigelow, Luippold, Zorn, & Lewis, 1995) and re-admission rates (Daley, Argeriou, & McCarty, 1998) than those who do not enter treatment.

Because the need for detoxification identifies persons who are substance dependent, detoxification presents an opportunity to link such persons to continuing substance abuse treatment services so that they may be able to attain sobriety and recover. Yet little is known about the extent to which these linkages are occurring. Large databases that follow individuals across systems of care are needed to answer the question of whether persons who enter detoxification subsequently receive continuing substance abuse treatment/rehabilitation services.

Insurance claims are one type of data that allow tracking of services across large patient populations over time and thus, tracking of treatment utilization rates. In addition, such data may contain information about health plan type and benefits that relate to the receipt of health care services. For example, managed care plans offer the promise of greater integration and coordination of services than may occur under a fee-for-service system. Patients in health maintenance organization plans are typically assigned a primary care physician to coordinate their care. In contrast, under a carve-out arrangement for

behavioral health care, a separate company manages just that treatment provided by mental health and substance abuse providers. Typically under such a carve-out, enrollees wishing to use behavioral health care benefits must dial a toll-free number to receive a referral to a mental health or substance abuse specialist. Utilization review is often employed to determine treatment length and placement options. To our knowledge, there are no studies of the effect of plan type on the receipt of continuing treatment/rehabilitation services following detoxification.

Cost-sharing is another aspect of insurance benefit design that may influence the probability of receiving continuing treatment/rehabilitation services after detoxification. Stein, Orlando, & Sturm (2000) examined the effect of co-payments on the probability of receiving such services following alcohol detoxification. They used data from 14 employer groups whose behavioral health care benefits were managed by United Behavioral Health. Their analyses predicted that waiving all outpatient co-payments would have resulted in 24% more patients receiving continuing substance abuse treatment and rehabilitation services following detoxification.

Demographic and clinical factors may also play a role in determining whether someone receives additional treatment/ rehabilitation services. Analyses of inpatient data have found that being female, younger in age, having private insurance, having higher income, having a longer length of stay, and not being admitted through the emergency room were positively associated with receiving inpatient rehabilitation following inpatient detoxification (Mark, Dilonardo, Chalk, & Coffey, 2002a).

This paper starts with the premise that persons receiving inpatient detoxification, alone or with inpatient rehabilitation, should receive continuing rehabilitation treatment services after they are discharged. Data from both efficacy and effectiveness studies have shown that patients who participate in continuing specialized outpatient substance abuse treatment after being discharged from treatment for substance abuse tend to have better long-term outcomes (Miller, Ninoneuvo, Klamen, Hoffman, & Smith, 1997; Miller and Hoffman, 1995; Moos, Finney, Federman, & Suchinsky, 2000; Moos, Schaefer, Andrassy, & Moos, 2001; Patterson, Macpherson, & Brady, 1997; Ritsher, Moos, & Finney, 2002; Swindle, Phibbs, Paradise, Recine, & Moos, 1995). The paper examines the extent to which this follow-up care is being received and what factors are associated with receiving it after discharge from detoxification.

Materials and Methods

Data for this study come from Medstat's 1997, 1998, and 1999 MarketScan® database, which compiles claims information from private health insurance plans of large employers. The covered individuals include employees, their dependents, and retirees with employer-sponsored health insurance. Medstat collects the claims and standardizes them. These claims are collected from over 200 different insurance plans, including fee-for-service (FFS), preferred provider organization (PPO), health maintenance organization (HMO), and point of service (POS) plans. Both capitated and non-capitated plans are included. In 1999, about 40 large employers participated. Detailed information about the firms is unavailable for reasons of confidentiality. There were 4.1 million covered lives in 1999.

Hospitalizations for detoxification were identified using procedure codes of the International Classification of Diseases, Ninth Edition, Clinical Modification (ICD-9-CM), the system used uniformly for coding clinical diagnoses and procedures by the hospital industry. ICD-9-CM incorporates codes of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) for mental health and substance abuse conditions. A hospitalization with a detoxification procedure code was considered an “index discharge” in this study for determining whether or not continuing treatment/rehabilitation services were received. Persons were considered to have had detoxification and rehabilitation while inpatients if they had ICD-9-CM procedure codes 94.63 (alcohol rehabilitation and detoxification), 94.66 (drug rehabilitation and detoxification), or 94.69 (combined alcohol and drug rehabilitation and detoxification); otherwise patients were considered to have detoxification only if they had the following ICD-9-CM codes: 94.62 (alcohol detoxification), 94.65 (drug detoxification), 94.68 (combined alcohol and drug detoxification). Outpatient detoxifications made up a small portion of total detoxification (about 10%) and were excluded from the analyses to simplify interpretation.

A broad definition of continuing treatment or rehabilitation services post-discharge was used in this study. The operational definition of receiving continuing substance abuse treatment/rehabilitation services was a claim (outpatient or subsequent inpatient claim) with an ICD-9-CM diagnosis or procedure code related to mental illness or substance abuse, or a CPT psychiatric procedure code, or a claim indicating treatment in a mental health or chemical dependency specialty facility within 30 days after the index discharge. Those persons who had only additional detoxification procedure codes within 30 days after an index detoxification discharge were not considered to have received continuing treatment/rehabilitation services. Enrollment records indicated the length of time of persons in the claims database. Persons who were not enrolled for 30 days after the index discharge were excluded from the analyses.

A benefit simulation model was developed to determine the amount a patient would have to pay out-of-pocket for one outpatient substance abuse visit following detoxification. Approximately 60% of beneficiaries in the MarketScan® database had benefit information to permit this calculation. This information had been abstracted from the beneficiary plan description booklets using primary data collection for the MarketScan® database. For example, the plan booklet may indicate that a covered member would pay a \$20 co-payment for each substance abuse visit. Then the simulation model would assign a \$20 value to persons with that benefit package indicating the expected out-of-pocket cost to them of a substance abuse visit. Some benefit plans were more complicated than others. For example, a covered member might be required to pay 50% cost-sharing for the first 10 visits and 25% for the next 10 visits. The simulation model would then assign an out-of-pocket value to the person based on the number of visits they had prior to discharge for detoxification and the average cost of the visit. Because encounter records for capitated plans do not have dollar values, the benefit simulation model was estimated only for persons with claims for payment.

We used logistic regression analysis to assess factors associated with whether or not continuing treatment/rehabilitation services were received within thirty days of an index hospital discharge for detoxification. Two regression models were estimated. One model included measures of plan type and was estimated using discharges with encounter and

claims data. The other model included measures of out-of-pocket payments and was estimated only for persons with claims. Other variables in both models included: the presence of a behavioral carve-out arrangement, whether patients received detoxification plus rehabilitation while an inpatient or detoxification-only, age, age-squared, gender, type of diagnosis, and year in which the index inpatient detoxification occurred.

Results

A total of 1577 detoxification discharges from the 1997– 1999 MarketScan® data met the inclusion criteria. Of these, 1394 discharges and 1108 unique patients could be linked to benefit information and were enrolled in a plan in the MarketScan® database at least 30 days after the index discharge. Of these 1394 discharges, 966 had claims data as opposed to encounter data. The smaller subset with claims data were only used in the analyses of out-of-pocket payments. Demographic and clinical characteristics of the sample are shown in Table 1. Almost 70% of the sample was male, the average age was 42.4 years, 62.1% were employees, 30.7% were spouses, and 7.3% were dependents. The most common diagnosis was alcohol psychoses or alcohol dependence syndrome (58.4%), followed by drug psychoses or drug dependence (23.9%), other diagnoses (16.4%), and nondependent drug abuse (1.3%).

We calculated the total payments made for a visit for substance abuse treatment (defined as a visit where substance abuse was the diagnosis) in 1997 using the Market- Scan database of approximately 4 million covered lives. The average total payment for a substance-abuse-related visit was \$97 (SD = 129). The average out-of-pocket cost for an outpatient substance abuse visit was \$16.10 (about 17% of the average total payment of \$97). Of the subset of covered persons, 37.4% would pay nothing for an outpatient substance abuse visit and 6.7% would pay the full \$97 (not shown in tables). All of the individuals included in the study had benefits that were different for behavioral health than for general health treatment. Individuals were spread fairly evenly among FFS, HMO, and PPO plans, with the smallest group in POS plans.

About 57.2% of the sample received alcohol-only detoxification, 19.9% received drug-only detoxification, and 23.1% received combined alcohol-and-drug detoxification. Overall, 48.0% of the discharges received a detoxification only procedure, and the other 52.0% received detoxification plus rehabilitation procedures while inpatients. The average length of stay for an index detoxification index was 6.3 days (SD = 6.6 days). Ninety percent of the index discharges had less than 14 days of inpatient care.

Only 49.4% of the discharges had continuing treatment/rehabilitation services within 30 days after being discharged from the index detoxification. Of those with continuing treatment, 57% had outpatient-only treatment within 30 days, 22% had inpatient-only treatment, and 21% had both inpatient and outpatient treatment (not shown in tables). The average number of visits among persons who did receive continuing rehabilitation treatment was 3.5 visits after discharge, which included all of their remaining observed time in the database (i.e., a maximum of 3 years).

Table1. Characteristics of inpatient detoxification episodes (N = 1394)

	Mean (SD)
Male gender	68.8%
Average age	42.4 (11.1)
Employee relationship	
Employee	62.1%
Spouse	30.7%
Dependent	7.3%
Price for a substance abuse treatment visit	\$97 (\$129)
Out-of-pocket costs under benefit package	\$16.10 (\$19.89)
Plan Type	
FFS	30.9%
HMO	26.1%
POS	7.8%
PPO	35.2%
Percent in behavioral carve-out plan	30.5%
Percent with detoxification procedure	
94.62 Alcohol detoxification	30.9%
94.63 Alcohol rehab and detoxification	26.3%
94.65 Drug detoxification	8.0%
94.66 Drug rehab and detoxification	11.9%
94.68 Combined alcohol and drug detoxification	9.2%
94.69 Combined alcohol and drug rehab and detoxification	13.9%
Percent with detoxification only procedure	48.0%
Primary ICD-9-CM diagnosis	
Alcohol psychoses or alcohol dependence syndrome	58.4%
Drug psychoses or drug dependence	23.9%
Nondependent drug abuse	1.3%
Other diagnosis	16.4%
Average length of stay	6.3 (6.6)
Percent with treatment within 30 days of inpatient detoxification	49.4%
Average number of visits post discharge	3.5 (3.8)

Source: Analysis of MarketScan database, 1997 -1999

To determine what type of treatment patients were receiving following discharge from the index detoxification event, the primary procedure codes on inpatient and outpatient claims were examined (not shown in tables). For outpatient treatment, the majority of the procedures on the claims were for various types of psychotherapy (about 55% of the claims) or for other psychiatric services such as pharmacological management (18% of the claims). About 12% of the outpatient claims were missing a procedure code, 7% were

for “evaluation and management” or “office consultation.” Four percent of the claims were for alcohol or drug rehabilitation with or without detoxification. The remaining claims (making up less than 5% of the total) were for a wide variety of procedures including “team conference”, “routine venipuncture”, and “hematology.” For inpatient treatment within the index stay or within 30 days of the index discharge, the most common primary procedure code was “evaluation and management” (about 25% of the claims). Alcohol or drug rehabilitation made up about 10% of the primary procedure codes. A variety of other codes including “consultation”, “drug addiction counseling”, and “other psychiatric drug therapy” made up the remainder of the primary procedure codes. Ten inpatient claims had a detoxification and rehabilitation code within 30 days of the index discharge. Although these claims may indicate the start of a new episode of treatment, half of them occurred within 5 days of discharge suggesting that the patient may have merely been transferred or discharged for a short period prior to continuing to receive detoxification and rehabilitation treatment.

The distribution of each explanatory variable was examined as a function of whether they received continuing treatment/rehabilitation services within 30 days after the index inpatient detoxification episode (Table 2). Age, plan type, and length of stay were the only variables not statistically related to the probability of receiving continuing treatment/rehabilitation services. Males were less likely than females to receive continuing treatment/rehabilitation after discharge. Spouses and dependents were less likely than employees to receive continuing treatment/rehabilitation services. The average out-of-pocket payments for persons without continuing treatment was \$25 (SD = \$24) and the average out-of-pocket payment for persons with additional treatment was about \$13 (SD = \$21). Clients in a behavioral health carve-out were more likely than those in other plans to receive continuing treatment/rehabilitation services. Patients admitted with drug psychoses or drug dependence diagnoses were less likely than those with other diagnoses to receive continuing treatment after detoxification. Those with “other diagnoses” (other than alcohol or drug-related diagnoses) were the most likely of the diagnostic categories to receive continuing treatment/rehabilitation.

Clients with an index detoxification plus rehabilitation treatment in the hospital (as opposed to an index detoxification- only inpatient episode) were more likely to have continuing treatment (usually outpatient) following discharge. The average length of stay in the index inpatient detoxification episode (6.3 days) was the same for persons who did and did not receive continuing treatment within 30 days after discharge. However, persons whose index detoxification episode included rehabilitation stayed an average of 7.8 days while persons with detoxification-only episodes stayed for only 4.6 days (not shown in tables).

Table2. Receiving continuing treatment – as a function of patient and index discharge characteristics (N = 1394)

	No treatment (N=706)	Treatment (N=688)
Gender**		
Female	44.6%	55.4%
Male	53.4%	46.6%
Average age	42.3 (11.6)	42.6 (10.7)
Employee relationship***		
Employee	47.1%	53.0%
Spouse	56.5%	43.5%
Dependent	56.4%	43.6%
Out-of-pocket costs for one substance abuse visit***	\$25.4 (23.8)	\$12.9 (20.7)
Plan Type		
FFS	46.4%	53.6%
HMO	54.7%	45.3%
POS	47.7%	52.3%
PPO	52.0%	48.0%
Presence of behavioral carve-out***		
No carve-out	55.4%	44.6%
Carve-out	39.8%	60.2%
Type of inpatient detoxification***		
94.62 Alcohol detoxification	56.3%	43.7%
94.63 Alcohol rehab and detoxification	42.4%	57.7%
94.65 Drug detoxification	55.9%	44.1%
94.66 Drug rehab and detoxification	51.2%	48.8%
94.68 Combined alcohol and drug detoxification	58.6%	41.4%
94.69 Combined alcohol and drug rehab and detoxification	45.1%	54.9%
Inpatient detoxification only procedure***		
Detoxification only procedure	56.7%	43.4%
Detoxification plus rehabilitation	45.1%	54.9%
Primary ICD-9-CM diagnosis at index detoxification***		
Alcohol psychoses or alcohol dependence syndrome	48.9%	51.1%
Drug psychoses or drug dependence	60.4%	39.6%
Nondependent drug abuse	44.4%	55.6%
Other diagnosis	43.2%	56.8%
Average length of stay in index detoxification	6.3 (6.8)	6.3 (6.4)

Source: Analysis of MarketScan® database, 1997 -1999

* $p < .1$.

** $p < .05$.

*** $p < .01$.

In a predictive analysis, two separate logistic regression models were estimated to determine the factors associated with receipt of continuing treatment/rehabilitation services in the 30 days following the index detoxification. One model had plan type measures and the other model had cost-sharing measures. The variables that were statistically significant at $p < .05$ levels in both models and that were positively related to receiving continuing substance abuse treatment/rehabilitation were: (1) being in a carve-out plan; (2) receiving rehabilitation during an inpatient detoxification stay as opposed to detoxification-only; (3) having a diagnosis of alcohol abuse or other diagnosis as opposed to drug psychosis or dependence; and (4) being discharged for detoxification in 1997 as opposed to year 1999. Age was also positively associated with receiving additional treatment in the model with out-of-pocket spending but not in the model with the plan variables. Factors that were negatively associated with additional treatment were being male and higher out-of-pocket spending.

In terms of magnitudes, the probability of receiving continuing treatment/rehabilitation for persons in a carve-out plan was between 13% and 21% higher than for those in a non carve-out. Persons receiving rehabilitation and detoxification while inpatients as opposed to detoxification-only during an index admission had a 13% higher probability of receiving continuing treatment/rehabilitation after discharge. A \$1 increase in out-of-pocket spending would lead to a decrease of 0.004% in the probability of receiving additional treatment/rehabilitation. The mean value of out-of-pocket spending was \$16.10. Eliminating cost-sharing would lead to a 0.06% increase in the probability of having additional treatment/rehabilitation.

Discussion

This paper starts from the premise that persons who receive inpatient detoxification should receive continuing treatment/rehabilitation once discharged. In this observational study we found that most patients discharged from inpatient detoxification did not receive any continuing substance abuse treatment/rehabilitation services and thus were missing opportunities for sustaining treatment gains and sobriety. In this study, only 49.4% of index episodes of inpatient detoxification received additional substance abuse treatment/rehabilitation services within 30 days after discharge.

The receipt of additional substance abuse treatment/ rehabilitation services was broadly defined to include any encounter that resulted in a mental illness or substance abuse diagnosis and most often comprised some form of outpatient psychotherapy or rehabilitation. However, it also included inpatient rehabilitation treatment received following the index detoxification, but excluded detoxification only procedures. This measurement of continuing treatment is perhaps too simple in that it does not take into account the quality or intensity of continuing treatment. It included some forms of mental health and substance abuse treatment, such as “consultation,” that may not significantly affect substance abuse usage. Thus, it is quite likely that an even larger proportion of patients than the reported 49.4% did not receive optimal treatment following detoxification. The fact that patients who received continuing treatment of some type received, on average, only 3 to 4 outpatient visits, also supports this view. On the other hand, the study does not account for services that are not reimbursed by private insurance such as Alcoholics Anonymous, Narcotics Anonymous, and similar support groups.

The rate of receiving continuing post-detoxification treatment/rehabilitation services found in this study of persons with private insurance falls in between those found in prior research. Stein and colleagues (2000) used data from a behavioral carve-out and found that 79% of patients received continuing treatment within 30 days of hospital discharge. A study of Medicaid claims and data from public mental health and substance abuse agencies found a rate of 30.3% (Mark et al., 2002b). McCusker and colleagues (1995) found that only 26% of substance abuse clients who received detoxification in a 29-bed, free-standing substance abuse treatment center also received continuing treatment/rehabilitation services after discharge. The higher rate in the Stein study may reflect the fact that the data were limited to behavioral carve-out claims.

This study presumed that patients who received detoxification and rehabilitation during their index admission could still benefit from additional treatment/rehabilitation following discharge. One reason for this presumption was that the average length of the index stay was only 7.8 days. Such inpatient detoxification and rehabilitation stays were actually more likely to be detoxification and stabilization as described by the Institute of Medicine (1990), rather than rehabilitation treatment per se. Detoxification and stabilization aims to remove the physiologic and emotional instability that impedes direct entry into rehabilitative treatment, but should not be considered a substitute for rehabilitation. Another reason to assume that patients who received treatment/rehabilitation following their detoxification event would have a better chance of recovery was that studies have consistently found that treatment length was a positive predictor of successful outcomes (Etheridge, Craddock, Dunteman, & Hubbard, 1995; McLellan, Lewis, O'Brien, & Kleber, 2000; Simpson, 1979; Stark, 1992).

This study suggests that financial incentives may be helpful for encouraging treatment following detoxification since those with a lower cost-sharing benefit were more likely to receive treatment following detoxification. Pervious studies have also found that cost-sharing reduces the probability of follow-up. Stein et al. (2000) studying alcoholism treatment within carve-out plans drew such an inference. Another study of financial incentives confirms this suggestion. (Chutuape, Katz, & Stitzer, 2001) looked at three methods for promoting outpatient aftercare following inpatient detoxification. Patients were randomly assigned to (1) standard referral, (2) standard referral plus a \$13 incentive payment, and (3) staff escort from detoxification to aftercare with an incentive payment. They found that more escort incentive participants (76%) than incentive-only (44%) or standard-referral (24%) participants completed transition to aftercare. Thus, programs to encourage transfers between inpatient detoxification and subsequent outpatient treatment may be a more powerful way to encourage treatment than financial incentives.

Enrollment in behavioral carve-outs also was associated with receipt of continuing treatment following detoxification. One might speculate that this is because behavioral carve-outs and some plan types work to coordinate care among the inpatient and outpatient providers although further study is needed to confirm this hypothesis.

When individuals enter detoxification the health care system has a unique opportunity to provide linkages to treatment which will offer lasting benefits in terms of reducing substance use. This study indicated that for many patients this opportunity is being squandered. More research and efforts are required in order ensure that detoxification is followed by treatment. Financial incentives may offer one way to increase successful

linkage to additional substance abuse treatment/rehabilitation services. Coordination among providers that provide detoxification and treatment may offer another promising alternative and is an approach that needs more study.

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References

- Chutuape, M. A., Katz, E. C., & Stitzer, M. L. (2001). "Methods for Enhancing Transition Of Substance Dependent Patients From Inpatient To Outpatient Treatment". *Drug Alcohol Depend*, 61, 137– 143.
- Daley, M., Argeriou, M., & McCarty, D. (1998). "Substance Abuse Treatment For Pregnant Women: A Window Of Opportunity". *Addictive Behaviors*, 23, 239– 249.
- Etheridge, R. M., Craddock, S. G., Duntzman, G. H., & Hubbard, R. L. (1995). "Treatment Services in Two National Studies Of Community Based Drug Abuse Treatment Programs". *Journal of Substance Abuse*, 7, 9 –26.
- Gerstein, D. R., & Harwood H. J. (Eds.) (1990). *Treating Drug Problems, Vol. 1: A Study Of The Evolution, Effectiveness, And Financing Of Public And Private Drug Treatment Systems*. Washington, DC: National Academy Press.
- Institute of Medicine. (1990). *Broadening The Base Of Treatment For Alcohol Problems*. Washington, DC: National Academy Press.
- Mark, T. L., Dilonardo, J. D., Chalk, M., & Coffey, R. M. (2002a). "Trends in Inpatient Detoxification Services, 1992– 1997". *Journal of Substance Abuse Treatment*, 23 (4), 253– 260.
- Mark, T. L., Dilonardo, J. D., Chalk, M., & Coffey, R. M. (2002b). *Substance Abuse Detoxification: Improvements Needed in Linkage to Treatment*. Rockville, MD: Substance Abuse and Mental Health Services Administration (DHHS Publication No. SMA 02-3728).
- McLellan, A. T., Lewis, D. C., O'Brien, C. P., & Kleber, H. D. (2000). "Drug Dependence, A Chronic Medical Illness, Implications For Treatment, Insurance, And Outcome Evaluation". *Journal of the American Medical Association*, 284, 1689–1695.
- McCusker, J., Bigelow, C., Luippold, R., Zorn, M., & Lewis, B. F. (1995). "Outcomes Of A 21-Day Drug Detoxification Program: Retention, Transfer To Further Treatment, And HIV Risk Reduction". *American Journal on Drug Alcohol Abuse*, 21, 1– 16.
- Miller, N. S., & Hoffman, N. G. (1995). "Addictions Treatment Outcomes". *Alcoholism Treatment Quarterly*, 12, 41–55.

- Miller, N. S., Ninonuevo, F. G., Klamen, D. L., Hoffman, N. G., & Smith, D. E. (1997). "Integration Of Treatment And Post Treatment Variables In Predicting Results Of Abstinence-Based Outpatient Treatment After One Year". *Journal of Psychoactive Drugs*, 20, 239–248.
- Moos, R. H., Finney, J. H., Federman, E. B., & Suchinsky, R. (2000). "Specialty Mental Health Care Improves Patients' Outcomes: Findings From The Nationwide Program To Monitor The Quality Of Care For Patients With Substance Use Disorders". *Journal of Studies on Alcohol*, 61, 704– 713.
- Moos, R., Schaefer, J., Andrassy, J., & Moos, B. (2001). "Outpatient Mental Health Care, Self-Help Groups, And Patients' 1-Year Treatment Outcomes". *Journal of Clinical Psychology*, 57, 273– 287.
- Patterson, D. G., Macpherson, J., & Brady, N. M. (1997). "Community Psychiatric Nurse Aftercare For Alcoholics: A Five Year Follow-Up Study". *Addiction*, 92, 459– 468.
- Ritsher, J. B., Moos, R. H., & Finney, J. W. (2002). "Relationship Of Treatment Orientation And Continuing Care To Remission Among Substance Abuse Patients". *Psychiatric Services*, 53, 595–601.
- Schneider Institute for Health Policy. Brandeis University. (2001). *Substance Abuse: The Nation's Number One Health Problem*. New Jersey: Robert Wood Johnson Foundation.
- Simpson, D. D. (1979). "The Relation Of Time Spent In Drug Abuse Treatment To Post Treatment Outcome". *American Journal of Psychiatry*, 136, 1449– 1453.
- Stark, M. J. (1992). "Dropping Out Of Substance Abuse Treatment: A Clinically Oriented Review". *Clinical Psychology Review*, 12, 93– 116.
- Stein, B., Orlando, M., & Sturm, R. (2000). "The Effect Of Copayment On Drug And Alcohol Treatment Following Inpatient Detoxification Under Managed Care". *Psychiatric Services*, 41 (2), 195– 198.
- Swindle, R. W., Phibbs, C. S., Paradise, M. J., Recine, B. P., & Moos, R. H. (1995). "Inpatient Treatment For Substance Abuse Patients With Psychiatric Disorders: A National Study Of Determinants Of Readmission". *Journal of Substance Abuse*, 7, 79– 97.
- Wesson, D. R. (1995). *Detoxification from alcohol and other drugs. Treatment Improvement Protocols Series 19*. Rockville, MD: Substance Abuse and Mental Health Services Administration (DHHS Publication No. SMA 95-3046).