Predicting Compliance of Dual Diagnosis Inpatients With Aftercare Treatment

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Objective: Patients with comorbid diagnoses of a substance use disorder and at least one other Axis I mental disorder have low rates of compliance with aftercare. The purpose of the study was to identify predictors of noncompliance among dual diagnosis inpatients. Methods: Characteristics of 48 dual diagnosis inpatients were examined. Compliance was defined as visiting the aftercare site at least three times. Results: Persons with a diagnosis of cocaine dependence were significantly more likely to be noncompliant with aftercare than those with a diagnosis of cocaine abuse. Patients with a discharge diagnosis of any type of depression were more likely to be noncompliant than those without such a diagnosis. During inpatient treatment, patients who were subsequently noncompliant with aftercare showed more erratic patterns of privilege loss and gain. Conclusions: Knowledge of factors related to noncompliance with aftercare may lead to better intervention with dual diagnosis patients.

Maximizing patients’ compliance with outpatient treatment has long been a significant problem for inpatient psychiatrists (1,2). Studies of general psychiatric inpatient populations (that is, populations with a variety of diagnoses) have reported rates of aftercare compliance ranging from 13 percent (3) to 76 percent (4), with rates clustering around 50 to 60 percent. Factors found to be associated with aftercare compliance in this population include race, gender, age, education, social supports, marital status, diagnoses, referral strategies, previous contact with aftercare, and waiting time at or distance from the outpatient clinic (1,5-8).

Studies comparing aftercare compliance rates of different diagnostic groups of inpatients usually find that patients with psychoactive substance use disorders have lower rates than other groups except schizophrenic patients. Reported compliance rates for patients diagnosed as having only psychoactive substance use disorders range from 2 percent (9) to 60 percent (10). Increased compliance among these patients has been found to be associated with many factors, including living alone; living near the treatment center; higher socioeconomic status; stronger social supports; involvement of a significant other in treatment; few or no arrests; marital stability; little or no family history of alcoholism; little or no time spent on a waiting list; follow-up telephone calls, letters, and home visits; the use of written contracts, group preintake procedures, and involuntary coercion; the use of medical treatments; providing a choice of treatments; matching patients to specific treatments; and being self-referred, older, older at the onset of heavy drinking, employed, socially stable, and motivated (7,9-14).

Many factors have been found to be unrelated to aftercare compliance of patients with psychoactive substance use disorders only, including socioeconomic status, race, age, gender, number of years as an alcoholic, number of previous rehabilitation programs attended, extent of dual addiction, the therapist’s perception of the patient’s motivation, social supports, history of drug use, and follow-up home visits (11-12,15). Conflicting findings are not unusual in the compliance literature and are characteristic of studies of aftercare compliance among general psychiatric patients with psychoactive substance use disorders.

Although many studies have focused on compliance rates among general psychiatric populations and among patients with psychoactive substance use disorders, relatively few have addressed comorbidity. Estimated rates of comorbidity of Axis I psychiatric disorders and substance abuse disorders vary, but the Epidemiologic Catchment Area study found that 28 percent of persons with a primary mental disorder also had a psychoactive substance use disorder, 45 percent of persons diagnosed as having a primary alcohol abuse disorder had a comorbid mental disorder, and 71 percent of those with a primary drug abuse diagnosis also had a mental disorder (16). The few studies of compliance among patients with both psychoactive substance use disorders and at least one other Axis I mental disorder (so-called dual diagnosis patients) suggest that these patients tend to comply less with aftercare than either general psychiatric patients or patients with substance use disorders (6,17,18).
Table 1
Demographic and diagnostic characteristics of dual diagnosis inpatients, by compliance with aftercare treatment

<table>
<thead>
<tr>
<th></th>
<th>Compliant (N=26)</th>
<th>Noncompliant (N=22)</th>
<th>Total (N=48)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
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</tr>
<tr>
<td>Male</td>
<td>18</td>
<td>69</td>
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</tr>
<tr>
<td>Female</td>
<td>8</td>
<td>31</td>
<td>12</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>13</td>
<td>50</td>
<td>12</td>
</tr>
<tr>
<td>Nonwhite</td>
<td>13</td>
<td>50</td>
<td>10</td>
</tr>
<tr>
<td>Income status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Welfare</td>
<td>13</td>
<td>60</td>
<td>10</td>
</tr>
<tr>
<td>Disability</td>
<td>4</td>
<td>18</td>
<td>3</td>
</tr>
<tr>
<td>No income</td>
<td>8</td>
<td>36</td>
<td>5</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>4</td>
<td>4</td>
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<tr>
<td>Discharge diagnosis</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Axis I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schizophrenia</td>
<td>5</td>
<td>19</td>
<td>3</td>
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<tr>
<td>Major depression or</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bipolar disorder</td>
<td>12</td>
<td>46</td>
<td>17</td>
</tr>
<tr>
<td>Anxiety disorders</td>
<td>4</td>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>Other affective</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>disorders</td>
<td>2</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Adjustment disorders</td>
<td>7</td>
<td>27</td>
<td>4</td>
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<tr>
<td>Axis II personality</td>
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<td></td>
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<tr>
<td>disorders</td>
<td>15</td>
<td>58</td>
<td>9</td>
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<tr>
<td>Psychoactive substance use disorders</td>
<td></td>
<td></td>
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<tr>
<td>Dependence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol or sedatives</td>
<td>12</td>
<td>46</td>
<td>9</td>
</tr>
<tr>
<td>Opiates</td>
<td>9</td>
<td>35</td>
<td>7</td>
</tr>
<tr>
<td>Cocaine</td>
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<td>39</td>
<td>11</td>
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<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
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<td>4</td>
<td>2</td>
</tr>
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<td>Abuse</td>
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<tr>
<td>Alcohol or sedatives</td>
<td>9</td>
<td>35</td>
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<td>6</td>
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<tr>
<td>Cannabis</td>
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</table>

In all psychiatric populations, compliance with outpatient treatment is strongly associated with improved outcome, including lower rates of recidivism (2, 3, 6, 19). Because dual diagnosis patients are difficult to treat and have high recidivism rates, it is important to identify factors associated with poor aftercare compliance in this population. Noncompliance may be minimized by identifying inpatients most at risk and taking remedial measures. This study attempted to identify markers of potential noncompliance among dual diagnosis inpatients by examining demographic and behavioral characteristics and aftercare compliance patterns.

Methods
The study was carried out on the dual diagnosis inpatient unit of a large teaching hospital in an urban setting. The unit is a 17-bed, unlocked, voluntary program for the diagnosis and treatment of adult patients with an acute axis I psychiatric diagnosis who need hospitalization and who have at least one concurrent psychoactive substance use disorder. Typical indicators for admission include a recent suicide attempt, ongoing suicidal ideation with a plan or intent, acute psychosis, significant decline in psychosocial functioning, homicidal ideation, or a combination of these indicators. Many patients are also in acute withdrawal from one or more substances. Although axis II diagnoses are common in this population, patients are not admitted with an axis II diagnosis as the sole psychiatric diagnosis.

The length of stay on the unit is variable, averaging 18 days. The unit uses a multimodal treatment approach, including individualized evaluation, psychological testing, individual and group psychotherapy, psychotropic medication, substance abuse education, family evaluation and education, self-help groups, and aftercare planning. Patients earn a series of privileges by demonstrating compliance with unit rules, actively participating in individual and group sessions, and cooperating with aftercare planning. Patients are invited to discuss aftercare alternatives within the first week after admission, and aftercare planning is discussed with the patient on a daily basis. Every effort is made to tailor a specific aftercare plan; routine nonspecific referrals are avoided.

Patients are encouraged to express doubts, concerns, and preferences about their aftercare plans, and they are never referred to a treatment site that they have rejected in aftercare planning sessions. When possible, patients are involved in on- or off-site screening interviews with aftercare staff to foster continuity of care. All patients are strongly encouraged to attend self-help groups, and meetings with outside volunteers from self-help groups are held on the unit four times per week.

The subjects in the study included all eligible, consenting patients hospitalized on the dual diagnosis inpatient unit over a period of four months in 1989. Patients who stayed on the unit less than one week or who left against medical advice were excluded from the study. Information on a variety of demographic, behavioral, psychosocial, diagnostic, and medical characteristics was obtained from patients' charts, discharge instruction sheets, the visitors' log book, and group attendance sheets. Diagnoses were based on daily clinical interviews by both resident and attending physicians using DSM-III-R criteria.

One to three months after dis-
charge, the subject's recommended outpatient treatment program was contacted by phone (with the subject's prior consent) to determine whether the subject had complied with treatment, and a follow-up questionnaire was mailed to the program. An attempt was also made to contact subjects by phone. Compliance was defined as the subject's appearing at the initial outpatient appointment and returning for at least two further visits.

Results
A total of 55 patients were approached to participate in the study, and 48 (87 percent) agreed. No information is available about the seven patients who refused to participate. Of the 48 subjects, 26 were compliant with aftercare treatment and 22 were noncompliant. Characteristics of the two groups are summarized in Table 1.

Two diagnostic measures and one behavioral measure were significantly associated with noncompliance. First, cocaine users with a diagnosis of cocaine dependence (N = 21) were significantly more likely to be noncompliant than cocaine users with a diagnosis of cocaine abuse (N = 6) (Fisher's exact test, p = .05). Interestingly, those who used only cocaine were less compliant than those who used cocaine in combination with at least one other drug, although the difference was not statistically significant (p = .055).

Second, subjects with a discharge diagnosis of any type of depression (N = 29) were more likely to be noncompliant than those who did not have such a discharge diagnosis (N = 19) (X^2 = 4.83, df = 1, p = .05). Among depressed subjects, those with major depression (N = 11) were more likely to be noncompliant than those with other depressive disorders (N = 18) (Fisher's exact test, p = .05). These findings were independent of the specific substance abused.

Finally, subjects who had lost privileges on the unit at any time during their stay were less likely to be compliant with aftercare than those who had not (X^2 = 9.85, df = 1, p < .01). This variable was more strongly associated with noncompliance than the other two variables.

However, the noncompliant group was also significantly more likely to have earned the highest level of privilege, which allows unescorted time off the unit (X^2 = 8.20, df = 2, p = .025). Table 2 shows the type of aftercare programs to which patients were referred. Patients referred to intensive types of treatment, such as day programs or methadone maintenance programs, were more compliant than those referred to weekly counseling, although the difference was not statistically significant.

Discussion
Given the intensely reinforcing properties of cocaine, it is not surprising that the increased severity of compulsive drug use in patients diagnosed as having cocaine dependence rather than cocaine abuse was associated with an inability to follow through with treatment-related activities, such as keeping an outpatient appointment. In fact, specialized intensive cocaine outpatient programs have been developed to address these problematic patients (20). It also appears that the presence of a psychoactive substance use disorder in addition to cocaine dependence may mitigate this effect. This finding suggests a possible compliance spectrum extending from patients with dependence on cocaine only through those with cocaine abuse only and those dependent on cocaine and other substances to patients with cocaine abuse along with other abuse disorders. This compliance spectrum merits further investigation.

The presence of a depressive disorder may predict noncompliance for a variety of reasons. Depression may correlate with the severity of the substance use disorder in general or with the degree of motivation to change. It is noteworthy that in a classic study of psychotherapy with opiate addicts (21), depression was predictive of good outcome, although compliance per se was not the issue. However, 27 percent of the initial subjects in that study dropped out, and it is not clear from the report whether those subjects differed in diagnosis or other traits from those who completed the study. Our study suggests that a subpopulation of more depressed patients may drop out before outpatient treatment really begins.

In another recent study, the presence of major depression or dysthymic disorder was predictive of worse treatment outcome and decreased retention among a group of cocaine-dependent patients maintained on methadone (22). However, the poorer outcomes were only for patients whose depression was not treated with medication (that is, those in the placebo group). This finding is consistent with that of Rounsaville and associates (23), who found that depression among clients in a methadone clinic predicted poorer treatment response.

Perhaps the confusion over depression as a predictor of compliance
is due to the failure to distinguish different definitions of compliance. Compliance with aftercare has been
defined as showing up for the initial appointment (4) or remaining in
attendance for at least two outpatient visits (7), at least five visits (24), a
year (25), or "long enough for therapeudic benefit" (26). However, char-
acteristics of patients who complete only the initial visit may differ from
those of patients who remain in treatment.

In our study significantly more subjects with depressive diagnoses
failed to return for at least two visits after their initial outpatient appoint-
ment, which was our definition of compliance. However, if we had
defined compliance as simply showing up for the initial appointment,
subjects with depressive diagnoses would not have been found to be
noncompliant. In other words, de-
pressed patients may be at least as likely to appear for an initial visit as
other patients, but they may be less likely to remain in treatment. Cer-
tainly the relationship between pri-
mary and secondary depression, psy-
choactive substance use disorders, and compliance merits a more de-
tailed study.

Factors specific to the aftercare program or interactions between
specific patient characteristics and specific aftercare sites may also prove
to be significant predictors of reten-
tion. Patients referred to intensive counseling of various types were
more compliant than those referred to weekly counseling, although the
difference was not statistically sig-
nificant. A larger study of aftercare compliance of dual diagnosis pa-

tients by type of aftercare program would be valuable.

Patients who were noncompliant had been more likely to reach a high
level of inpatient privileges than those who were compliant, but they
were also more likely to have lost privileges while on the unit. This
finding suggests that inpatient be-
behavior of potentially noncompliant
patients may be more volatile or er-

tatic than those likely to comply. Surprisingly, compliance was not

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Upstairs, downstairs: a tale of two
clinics: a comparison of cocaine and
methadone patients. Substance Abuse
Service Utilization Patterns as Determinants of Capitation Rates

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Patricia Loftus-Rueckheim, M.A.

Objective: In a capitation payment system, the ability to project service requirements and cost is critical. The types and levels of services needed by persons with serious mental illness vary. The purpose of this study was to identify different patterns of service utilization and patient characteristics and costs associated with them. Methods: Service use by 55 clients participating in a psychosocial-habilitation outpatient program at a hospital-based community mental health center was tracked for one year. Treatment cost for all services was calculated for each patient. Results: Cluster analysis indicated that for persons with serious mental illness who enter community treatment, there appear to be four distinct patterns of service use: low, moderate, moderately high, and high. The groups were differentiated only by the presence of a disability (among the moderately high users) and a history of frequent inpatient treatment (among the high users). The two highest-use groups represented about one-third of the total sample but consumed more than three-fourths of the total resources. Conclusions: The lack of significant group differences on most clinical variables may make it difficult to develop capitation rates for subgroups of persons with serious mental illness. Service use may be determined by factors other than clinical need.

The last decade has led to an increased focus on the mental health needs and treatment of persons with serious mental illness. Much has been written on both new and old or “revisited” treatment strategies. Inherent in these discussions is a review of various techniques for the financing of such services. Persons with serious mental illness generally use a large percentage of resources within the mental health system. Dickey and Goldman (1) estimated that more than $11 billion (1983 dollars) is expended annually on persons with chronic mental illness through programs such as Medicare, Medicaid, Supplemental Security Income (SSI), Social Security Disability Insurance (SSDI), block grants, Title 20 programs, and housing. Given these findings, it is evident that funding issues must play a large role in any discussion of treatment planning for this population. One funding strategy that has received an increasing amount of attention is capitated financing.

Lehman (2) defines capitation as “a method of payment for services in which an individual or institutional provider is paid a fixed amount for each person served per time period without regard to the number or nature of services provided to each person.” Given this definition, it is clear that the ability to project service cost is critical to the successful implementation of a capitation strategy. Demonstration projects have attempted to develop capitation rates predicated on projected estimates of service requirements (3,4), past and current service utilization (5), or the amount of funding available for capitation (6). These projects have been targeted for persons with serious mental illness who range from frequent users of inpatient psychiatric services to those using primarily outpatient services.

While the targeted groups have come from a variety of treatment set-