

Vishal S. Anand,¹ M.D.; J. Richard Ciccone,² M.D.; Igor Kashtan,³ M.D.; and Anca Seger,⁴ M.D.

Factors Predictive of Changes in the Legal Status of Psychiatric Inpatients

ABSTRACT: The objective of this study was to identify factors predictive of duration of involuntary hospitalization, i.e., factors that would predict early versus late conversion to voluntary status. Charts of 209 patients admitted involuntarily to an acute psychiatric inpatient unit were studied using a naturalistic, prospective design. Multivariate regression analysis was used to determine the effect of a number of variables in predicting duration of involuntary hospitalization. Of all variables studied, only smoking preference was found to be a statistically significant predictor of duration of involuntary hospitalization. Smokers were converted to voluntary status earlier than non-smokers. The authors concluded that clinicians may not be using commitment statutes as per recommended legal guidelines. Patients who smoke may be applying overt and covert pressure on clinicians with regard to conversion to voluntary status to gain smoking privileges.

KEYWORDS: forensic science, forensic psychiatry, forensic psychology, involuntary hospitalization, involuntary commitment, legal status changes

Most research involving civil commitment has centered around a comparison of voluntarily and involuntarily hospitalized psychiatric patients. Some studies have identified distinguishing characteristics between voluntarily and involuntarily hospitalized patients (1) while other studies have found no significant differences (2).

In recent years, research has begun to focus on the process of legal status change among hospitalized psychiatric patients; particularly the conversion of involuntarily admitted patients to voluntary status. Nicholson (3) found that conversion to voluntary status was associated with longer hospital stays, poorer short-term outcomes and worse prognoses. Cuffel (4) examined the role of several factors in the transition from involuntary to voluntary status at different stages of hospitalization. He found that when voluntary conversion occurred early in the course of hospitalization, the associated factors were clinical improvement, less severe diagnoses and non-minority ethnicity. When voluntary conversion occurred late in the course of hospitalization, availability of living arrangements was the only significant associated factor. Our literature search failed to reveal a study that specifically studied predictors of duration of involuntary hospitalization.

An examination of the process of conversion of involuntarily hospitalized patients to voluntary status is important for a number of reasons. Results of such research would help clinicians understand the dynamics of the civil commitment process, demonstrate how clinicians use commitment statutes, and identify patients at risk for prolonged commitment. This may help clinicians develop measures to shorten involuntary hospitalization and promote treatment in the least restrictive setting. Furthermore, duration of commitment is especially important in this era of managed care because it may directly influence the overall duration of hospitalization. In addition, results of this research may help inform policies and procedures regarding inpatient psychiatric care in general.

The purpose of this prospective, naturalistic study was to identify factors predictive of the duration of involuntary hospitalization, i.e., those factors that would predict early versus late conversion to voluntary status.

Method

Sample Size, Inclusion, and Exclusion Criteria

Two hundred and nine consecutive patients admitted involuntarily to the acute psychiatric units of a University hospital were entered into the study. Patients admitted on a voluntary status or under the age of 18 years were excluded from the study. The sample included women and minorities.

Study Design

The investigators compiled a data collection form which included entries for a number of variables initially hypothesized to be predictive of duration of commitment. Prior to the initiation of data collection, interrater reliability was tested among the three investigators responsible for data collection, and was found to exceed 95%.

¹ Clinical Assistant Professor of Psychiatric Medicine, University of Virginia, Roanoke-Salem Program; Staff Psychiatrist, Veterans Affairs Medical Center, 1970 Roanoke Boulevard, Salem, VA.

² Director, Psychiatry and Law Program, Professor of Psychiatry, University of Rochester School of Medicine and Dentistry, 300 Crittenden Boulevard, Rochester, NY.

³ Senior Clinical Instructor of Psychiatry, University of Rochester School of Medicine and Dentistry, Staff Psychiatrist, Rochester Psychiatric Center, 1111 Elmwood Avenue, Rochester, NY.

⁴ Attending Psychiatrist, Claxton-Hepburn Medical Center, 214 King Street, Ogdensburg, NY.

* This research was conducted at the Department of Psychiatry, University of Rochester School of Medicine and Dentistry, Rochester, NY.

* The data were presented at the Annual Meeting of the American Academy of Psychiatry and the Law in Baltimore, Maryland, in October 1999.

Received 16 April 2002; and in revised form 31 May 2002; accepted 9 June 2002; published 16 Oct. 2002.

All data required for the study were obtained from a review of the subject's emergency room admission evaluation and current psychiatric inpatient record. No clinical interviews were conducted. Furthermore, it was anticipated that participation in the study would not influence the clinical course of the subject's hospitalization or illness in any way. The Institutional Research Review Board agreed that it was not necessary to obtain informed consent from study subjects. All study documents were maintained by the investigators in a secure environment to ensure patient confidentiality.

Data collection was carried out in a prospective, naturalistic fashion, from March 1, 1999 through May 27, 1999. For each patient enrolled in the study, data collection consisted of a review of the patient's chart on the day following admission and recording of responses on the previously mentioned data collection form. No patient interviews were performed. No discussions were conducted with members of the patient's treatment team. None of the investigators were part of the treatment team for any of the study subjects.

Charts of all study subjects were then periodically reviewed to obtain the date of voluntary conversion for each subject in order to calculate the duration of involuntary hospitalization. For those patients discharged without a formal conversion to voluntary status, the date of discharge was recorded as the date of conversion to voluntary status.

The data collection form used included entries for seventeen variables initially hypothesized to be predictors of duration of commitment. Following an examination of preliminary data, and in order to obtain maximal statistical sensitivity, eight factors were included in the final data analysis. These included:

1. Gender—Male/Female
2. Race—Caucasian/African-American/Hispanic/Other
3. Admitting Diagnosis—Options in this category included Mood Disorders, Psychotic Disorders, and "Other Diagnoses." The latter category included personality disorders, anxiety disorders, dementia, mental retardation, eating disorders, primary substance use disorders and adjustment disorders. In case of patients with multiple diagnoses, we selected the primary diagnosis for the current presentation.
4. Indication for commitment—This variable referred to the most important reason that the subject was admitted on an involuntary status rather than voluntarily. Options included Suicide attempt, Stated lethal ideation (suicidal or homicidal), and Inability to care for self due to severe mental illness. In case of multiple indications, we selected one that appeared most significant.
5. Use of restraints—This referred to the use of any physical restraint (four point, show of force) or chemical restraint (emergency antipsychotic or benzodiazepine medication) during the course of the evaluation and admission process. We did not rate as positive those subjects who received routine scheduled medications during the process of evaluation.
6. Reimbursement system—Options included HMO, Medicaid/Medicare and "Other." The latter category included uninsured patients and patients with traditional indemnity insurance.
7. Substance use—This variable referred to whether or not substance use was a predominant feature of the current clinical presentation. Those rated as positive included individuals presenting in a state of intoxication, withdrawal, or with substance-induced syndromes. Individuals with psychiatric disorders and comorbid substance use disorders were not rated as positive unless they fell into the above categories.
8. Smoking preference—Smoker/Non-smoker

Statistical Analysis

Statistical analysis was carried out by the University of Rochester Department of Biostatistics. Analysis was carried out using a multivariate regression analysis. The dependant variable was the number of days from admission on an involuntary status until conversion to voluntary status. A number of independent variables were considered; the final regression model included the eight factors listed above. Because the dependant variable was discrete, with a standard distribution, Poisson (log linear) regression analysis was used. A correction for excess Poisson variation was included (5).

Results

The characteristics of the study sample are tabulated in Table 1. In total, 209 subjects were entered into the study and included in the final data analysis. One hundred and two subjects were female and 107 were male. One hundred forty five subjects were White, 55 Black, 7 Hispanic and 2 Asian. This racial distribution closely paralleled the racial make up of the population of the catchment area, with a slight overrepresentation of African Americans. Ninety-nine subjects had an admitting diagnosis of a mood disorder, 80 subjects had an admitting diagnosis of a psychotic illness, and 30 had other admitting diagnoses (personality disorders, anxiety disorders, primary substance use disorders, dementia, mental retardation, eating disorders and adjustment disorders.) With regard to primary indication for commitment, 90 subjects

TABLE 1—The characteristics of the study samples.

Variable	Description of Study Sample (n = 209)	
	N	%
Sex		
Male	107	52
Female	102	48
Race		
White	145	70
Black	55	26
Hispanic	7	3
Asian	2	1
Admitting diagnosis		
Psychotic disorders	80	38
Mood disorders	99	47
Others*	30	15
Indication for commitment		
Suicide attempt	26	12
Stated lethal ideation	90	43
Inability to care for self	75	36
Use of restraints		
Physical/chemical	60	29
None	149	71
Reimbursement		
HMO	78	37
Medicaid/medicare	99	47
Other*	32	16
Substance use		
Significant	64	30
Insignificant	145	70
Smoking preference		
Smokers	109	52
Nonsmokers	97	46

* Including anxiety disorders, personality disorders, dementias, mental retardation, eating disorders, primary substance use disorders and adjustment disorders.

had reported lethal ideation (suicidal or homicidal), 26 subjects had attempted suicide, and 75 subjects were committed due to an inability to attend to their daily needs. Twelve subjects had been committed due to assaultive behavior and six due to unclear diagnosis, warranting observation. The latter two subcategories were excluded from the analysis due to the small numbers involved. Of the total sample, 60 subjects had required physical and/or chemical restraints during the evaluation and admission process while 149 had required no such restraint. Substance use was a clinically significant factor in the current presentation of 64 subjects, insignificant in 145 subjects. With regard to reimbursement systems, 78 subjects were covered by HMO plans, 99 by Medicaid or Medicare, and 32 were uninsured. One hundred and nine subjects were smokers; 97 nonsmokers. Smoking preference data were not available for three subjects.

The mean duration of commitment (DOC), calculated from the day of admission to the day of voluntary conversion for the entire sample, was 9.89 days with a standard deviation of 10.28 days (Table 2).

Male subjects had a slightly longer duration of commitment (9.95) than female subjects (9.81) ($p=0.29$) $F(1,166) = 1.14$. Asian subjects had the longest DOC (15.00), followed by Black subjects (10.67), White subjects (9.64) and Hispanic subjects (7.29) ($p=0.96$) $F(3,116) = 0.10$. Patients admitted with psychotic disorders had the longest DOC (12.33) followed by those admitted with Other disorders (8.23) and those admitted with mood disorders (8.06) ($p=0.20$) $F(2,166) = 1.62$. Patients committed due to an inability to care for themselves had the longest DOC (11.64) followed by those committed for stated lethal ideation (8.98), while subjects committed for suicide attempts had the lowest DOC (6.92) ($p=0.88$) $F(2,166) = 0.13$. Subjects who

TABLE 3—Statistical significance of factors studied.

Variable	<i>p</i>
Gender	.29
Race	.96
Admitting diagnosis	.20
Indication for commitment	.88
Use of restraint	.47
Substance use	.42
Reimbursement system	.43
Smoking preference	.01

required physical or chemical restraint during the evaluation and admission process had a longer DOC (11.38) than those who did not (9.28) ($p=0.47$) $F(1,166) = 0.52$. Subjects presenting with substance-related illnesses had a longer DOC (10.09) than those without current substance related difficulties (9.79) ($p=0.42$) $F(1,166) = 0.66$. Subjects enrolled in the Medicaid/Medicare programs had the longest DOC (11.36), followed by those covered by HMO plans (9.35), while uninsured patients had the lowest DOC (6.94) ($p=0.43$) $F(2,166) = 0.84$. Nonsmokers had a longer DOC (11.69) than non-smokers (8.41) ($p=0.01$) $F(1,166) = 6.59$ (Table 3).

Of all factors studied, only smoking preference reached statistical significance ($p=0.01$) as a predictor of duration of commitment. Smokers were converted to voluntary status faster than nonsmokers.

Discussion

Since the Pennsylvania Hospital opened in Philadelphia in 1752, psychiatric patients have been hospitalized involuntarily. However, the concept of involuntary hospitalization and civil commitment has undergone transition over the past two and a half centuries. This evolution has involved the philosophical reasoning forming the basis of commitment, the motivation behind involuntary hospitalization, as well as the legal and clinical procedures involved in the commitment process. This study attempted to examine the reasoning behind legal status change in committed patients. This goal was achieved by first hypothesizing that a number of demographic and clinical variables would be significant predictors of duration of commitment, i.e., the time interval between involuntary admission and conversion to voluntary status, and subsequently measuring the effect of each of the hypothesized variables using appropriate statistical techniques.

With a few notable exceptions, our results tended to mirror our initial hypotheses with regard to each factor studied. Male patients tended to stay committed longer than female patients. Patients admitted for psychotic illnesses stayed committed longer than those admitted for mood disorders or other disorders. Patients requiring restraint while being evaluated and admitted had longer durations of commitment than those who did not. Patients covered by the least restrictive reimbursement system, i.e., Medicaid/Medicare, had the longest duration of commitment, followed by those covered by HMO's. Uninsured patients had the shortest duration of commitment. Smokers had shorter durations of commitment than nonsmokers. On the other hand, our results indicated that with regard to race, White patients stayed involuntarily hospitalized longer than Black or Hispanic patients. This contradicts Cuffel's results (4). He found that non-minority ethnicity was a factor asso-

TABLE 2—Mean duration of commitment.

Variable	Mean DOC (days)
Sex	
Male	9.95
Female	9.81
Race	
White	9.64
Black	10.67
Hispanic	7.29
Asian	15.00
Admitting diagnosis	
Psychotic disorders	12.33
Mood disorders	8.06
Others	8.23
Indication for commitment	
Suicide attempt	6.92
Stated lethal ideation	8.98
Inability to care for self	11.64
Use of restraints	
Physical/chemical	11.38
None	9.28
Substance use	
Significant	10.09
Insignificant	9.79
Reimbursement	
HMO	9.35
Medicaid/Medicare	11.36
Other	6.94
Smoking preference	
Smokers	8.41
Nonsmokers	11.69

ciated with early voluntary conversion. The larger sample size and difference in study design may explain this difference.

Results with regard to indication for commitment showed that patients admitted following suicide attempts stayed committed for the shortest period as compared with those admitted for stated lethal ideation or inability to care for self. The portion of the sample captured by the "stated lethal ideation" category may include a substantial percentage of patients with prominent Axis II disorders, who may have unconscious or conscious needs to prolong hospitalization by reporting ongoing lethal ideation. Individuals committed due to inability to care for self were more likely to be seriously, persistently mentally ill and hence less responsive to treatment. With regard to substance induced syndromes, one might expect that these would resolve faster, leading to a shorter duration of hospitalization. However, it is also possible that these individuals may suffer from more severe comorbid Axis I and Axis II pathology which may account for their longer duration of commitment.

Of all factors studied, only smoking preference emerged as a statistically significant predictor of duration of involuntary hospitalization. Smokers remained on an involuntary status for a shorter period than did non-smokers. In order to place this result in context, it is essential to understand the smoking policy of the hospital where the study was conducted. The hospital has a non-smoking policy. Involuntary patients are not permitted off the units under any circumstances. Patients on a voluntary status are permitted privileges to periodically leave the locked units, typically for smoke breaks in a designated smoking area outside the hospital building. In such a scenario, one could imagine that there would be intense pressure, both overt and covert, on treating clinicians, to convert involuntary patients who smoke, to voluntary status. This could possibly dilute the effect of other clinical considerations on the decision making process, thus explaining our results.

These results raise two important questions. First, how do we explain the fact that major intuitive considerations like admitting diagnosis, indication for commitment, and other factors studied, with the exception of smoking preference, had no bearing on the voluntary conversion process? Second, what is the significance of the finding that smoking preference did, in fact, predict duration of commitment; and in what other ways might smoking preference impact inpatient psychiatric treatment?

With regard to the first question, it is possible that clinicians may not be using commitment statutes in the manner in which they were intended to be used. In the state of New York, Mental Health Law allows for clinicians to make initial commitment decisions, extension of commitments for up to two months, and decisions with regard to conversion to voluntary status, without the involvement of the courts, unless the patient or patient's representative requests a hearing process. Each commitment statute includes detailed guidelines on its use, which mostly center on the presence of mental illness resulting in dangerousness to self or others and/or an inability to provide for one's daily needs. Were these guidelines being followed rigorously, many other factors would have been found to be statistically significant predictors of duration of involuntary hospitalization on account of their relationship to dangerousness and ability to care for one's self. It is possible that in this era of managed care marked by intense pressure on clinicians to discharge patients, legal status changes may simply have been reduced to matters of convenience.

Smoking preference stands out as the lone predictor of duration of commitment. This echoes the conclusion drawn at the end of the preceding paragraph, i.e., the issue of convenience. Several other

possible reasons for the earlier voluntary conversion of smokers also exist, however. It is possible that smokers have a greater incentive to be converted to voluntary status and hence follow avenues to facilitate this process, (i.e., medication compliance, better behavioral control) which may also influence the clinical decision making process resulting in earlier voluntary conversion. Further, smoking is known to affect blood levels of psychotropic medications and also possibly to reduce adverse effects such as antipsychotic-induced parkinsonism (6) which may further influence compliance with treatment and/or therapeutic effects. We were unable to examine these hypotheses from our data set. One may also speculate that among psychiatric patients, smokers may be slightly more functional on account of the stimulant-like properties of nicotine, which may also explain their earlier conversion to voluntary status. We are unaware of any prior research that has directly addressed this potential relationship between smoking and legal status change. However, some data suggest a potential short term therapeutic effect of nicotine in individuals with schizophrenia, possibly from a corrective effect on P50 auditory sensory gating deficits (7). In this scenario, the motivation of smokers to gain voluntary status and hence smoking privileges, may in fact be a therapeutic move.

From a broader viewpoint, the issue to consider would be how a non-smoking policy impacts inpatient psychiatric units in general. When psychiatric units first started to place smoking restrictions or bans, there was much concern that this would lead to increased adverse behavioral incidents on units. For the most part, empirical research has not confirmed this hypothesis. A number of studies have confirmed that despite the anticipation of negative consequences, there has been no increase in assaults or other behavioral management problems following the implementation of a smoking ban (8,9). Another study did find disruption in treatment of highly disturbed nicotine-dependant patients when admitted to a unit where smoking was prohibited (10). This study was limited to a report of four cases. On a different note, we found one study that evaluated the effect of a smoking ban on motivation to quit smoking among psychiatric inpatients (11). This study found no beneficial motivational effects. Yet another study evaluated the hypothesis that signs and symptoms of nicotine withdrawal would aggravate and confound psychiatric symptoms among smokers admitted to non-smoking psychiatric units (12). This study found no immediate benefits or adverse effects from the smoking ban. These data notwithstanding, it appears unlikely that there will be any reversal of the progressive banning of smoking in psychiatric inpatient units or even in designated smoking areas. Current data do not suggest that such a ban will have a significant impact on patient or staff safety, or on the inpatient treatment of psychiatric disorders.

This study has a number of limitations and our results must be interpreted with caution. First, we studied a relatively small number of subjects and our analysis examined a limited number of specific factors as predictors of duration of commitment. It is possible that other factors that we did not include in our analysis may be bona fide predictors. One such factor would be illness severity at time of admission, as measured by scores on appropriate rating scales. Other factors with potential impact include psychotropic medication blood levels and blood alcohol/urine drug screen results at time of admission. Further, a much larger study population may have yielded additional positive findings.

Second, our data were obtained from chart reviews and without structured clinical interviews and hence scoring of many variables such as admitting diagnosis, indication for commitment and substance abuse was based upon limited data.

Third, our study only examined variables notable at the time of admission. We did not take into account many phenomena occurring during the course of hospitalization that would possibly have a significant impact on the process of legal status change. These include compliance with treatment, clinical improvement, adverse behavioral incidents, the use of seclusion and/or restraints, and availability of safe dispositions.

Because we could not locate any previous studies addressing the same question we did, a broad comparison with past findings is not possible. Furthermore, results from studies dealing with legal status changes performed in the 1980's or earlier are of limited usefulness given the significant changes that have occurred in the practice of inpatient psychiatry over the past two decades. For example, Nicholson (3) found that patients converted to voluntary status had poorer long term outcomes, longer total duration of hospitalization and were more often released without a follow up referral. In his commentary he recommends periodic review to "safeguard (voluntary) patients from unnecessary confinement," possibly implying that this group consisted of patients who simply tolerated longer hospitalizations, as interpreted by Cuffel (4). Regardless of the accuracy of this conclusion at the time, it is unlikely that a similar argument would apply in 2002.

Given the limitations of our study, we suggest that future research attempt to replicate and refine our results. Using a larger study population as well as including illness severity as measured by an appropriate rating scale would significantly enhance the robustness of the findings. We recommend using structured clinical interviews to increase the reliability of admitting diagnoses. We also recommend modifying the study protocol to include an examination of events occurring in the course of hospitalization as potential predictors of duration of involuntary hospitalization. Most important among these would be compliance with treatment, measurable clinical improvement and use of seclusion or physical restraint. Finally, given that smoking preference stood out as the lone predictor of duration of commitment, it may be particularly informative for the modified study protocol to be conducted on units with different smoking policies. Factoring in the

use (or not) of nicotine replacement modalities such as gum or patches may further enhance the findings. Results of such research are likely to shed further light on the reasons why smokers are likely to be converted to voluntary status earlier than non-smokers.

References

1. Lindsey KP, Paul GL. Involuntary commitment to public mental institutions: issues involving the overrepresentation of Blacks and assessment of relevant functioning. *Psychol Bulletin* 1989;106:171-83.
2. Okin RL. The relationship between legal status and patient characteristics in state hospitals. *Am J Psychiatry* 1986;143:1233-7.
3. Nicholson RA. Characteristics associated with change in the legal status of involuntary psychiatric patients. *Hosp Comm Psychiatry* 1988;39:424-9.
4. Cuffel BJ. Characteristics associated with legal status change among psychiatric inpatients. *Comm Mntl Hlth J* 1992;28(6):471-82.
5. McCullagh P, Nelder JA. *Generalized linear models*, (2nd Edition). Chapman and Hall; London. 1989
6. Goff DC, Henderson DC, Amico E. Cigarette smoking in schizophrenia: relationship to psychopathology and medication side effects. *Am J Psych* 1992;149(9):1189-94.
7. Adler LE, Olincy A, et al. Schizophrenia, Sensory Gating, and Nicotinic Receptors. *Schiz Bulletin* 1998;24(2):189-202.
8. Rauter UK, deNesnera A, Grandfield S. Up in smoke? Linking patient assaults to a psychiatric hospital's ban on smoking. *J Psychosocial Nursing and Mntl Hlth Services* 1997;25(6):35-40.
9. Haller E, McNeil DE, Binder RL. Impact of a smoking ban on a locked psychiatric unit. *J Clin Psychiatry* 1996;57(8):329-32.
10. Greeman M, McClellan TA. Negative effects of a smoking ban on an inpatient psychiatry service. *Hosp Comm Psych* 1991;42(2):408-12.
11. Downey KK, Pomerleau CS, Huth AC, Silk KR. The effect of a restricted smoking policy on motivation to quit smoking in psychiatric patients. *J Add Diseases* 1998;17(2):1-7.
12. Smith CM, Pristach CA, Cartagena M. Obligatory cessation of smoking by psychiatric inpatients. *Psych Services* 1999;50(1):91-4.

Additional information

Vishal S. Anand, M.D.
Mental Health Service Line (116A)
Department of Veterans Affairs Medical Center
1970 Roanoke Boulevard
Salem, Virginia 24153