Effects of Patient and Health-System Characteristics on Community Tenure of Discharged Psychiatric Inpatients

Ronny Bruffaerts, M.A.
Marc Sabbe, M.D., Ph.D.
Koen Demyttenaere, M.D., Ph.D.

Objective: **The purpose of this study was to identify the differential effect of patient and health-system characteristics on length of stay in the community among recidivist psychiatric patients. *Methods:* Data on demographic and clinical characteristics and mental health service utilization were collected for patients with at least one previous psychiatric hospitalization (N=1,972) who visited a psychiatric emergency department at a university hospital in Leuven, Belgium, between March 2000 and March 2002. Logistic regression analysis was used to compare the characteristics of patients with a short (less than two months), intermediate (two to 12 months), or long (12 months or longer) stay in the community between their last hospital discharge and referral to the psychiatric emergency department. *Results:* One in three patients visited the psychiatric emergency department within 30 days of discharge from a psychiatric hospitalization, and 43 percent of the patients visited within 60 days of discharge. Patients with a short community stay were more likely to be unemployed and to have had a discharge against medical advice, a short previous hospitalization, no aftercare plan, and a history of two or more previous hospitalizations. Longer community stays were predicted by the presence of a personality disorder. *Conclusions:* For patients with a history of psychiatric hospitalization, early psychiatric recidivism may be more highly influenced by health-system characteristics than by the presence of severe mental illness.** (*Psychiatric Services* 55:685–690 2004)

Over the past two decades, the organization and provision of mental health care have changed dramatically. The deinstitutionalization of mental health services has resulted in shorter stays in psychiatric hospitals and in larger numbers of psychiatric patients living in the community (1). Many communities have too few resources to help these patients (2). The number of psychiatric referrals to hospital emergency departments has increased, partly because of the general lack of linkage between institutional and community services (3). This trend has been observed both in the United States and in Europe (4).

Previous research has provided consistent evidence that persons with previous use of psychiatric services are among the most frequent users of psychiatric emergency departments (5–10). Moreover, patients who are readmitted to inpatient psychiatric care are often found to have been recently discharged from a psychiatric hospitalization. In previous studies, 24 percent of 262 patients (11) and 38 percent of 128 patients (12) with a recent hospital discharge were readmitted within three to six months. In a study of state hospital patients in Massachusetts, Fisher and colleagues (13) found a 50 percent readmission rate within four years of discharge among 5,610 patients. Early hospital readmission has been related to the presence of mental illnesses with poor prognoses (13–15), to poor quality of patients' social networks, and to patients' difficulties with hygiene at discharge (16).

Early readmissions, however, may also reflect the quality of postdischarge treatment and care. Some unplanned psychiatric referrals could be explained by the unexpected and acute progression of the patient's mental illness, but the rest may result because the mentally ill person has been discharged from the hospital too soon or because follow-up in the community is ineffective.

Lower readmission rates have been associated with the existence of follow-up services. For example, McIntosh and Worley (17) implemented telephone follow-up and aftercare groups for patients who were discharged from a psychiatric hospitalization. Fifteen months after the implementation of these services, these authors found a readmission rate of

only 12 percent among the 127 patients who were enrolled in the study. After four years, only 18 to 20 percent of the patients who were offered aftercare had been readmitted.

Although several studies have emphasized the importance of aftercare and follow-up services, other studies have not found a relationship between readmission rates and the presence of aftercare (18,19), patients' attitudes toward follow-up (20), or continuity of therapists (21). Despite extensive study of the factors associated with community tenure, the factors that predict successful community living after inpatient care are still only partly understood. Particularly lacking is an understanding of the effect of previous inpatient care on community tenure. The aim of the study reported here was to develop prediction models to explain the community stay of discharged psychiatric patients. Besides reexamining earlier work on psychiatric recidivism, this study evaluated the differential effect of patient and health-system characteristics in relation to the community tenure of persons with previous use of psychiatric services.

Methods
Setting
The study was conducted at the University Hospital Gasthuisberg in Leuven, Belgium. The catchment area of Leuven includes about 100,000 inhabitants. University Hospital Gasthuisberg has a public health care function and is the only hospital in Leuven with a psychiatric emergency team. Belgium has universal health insurance, which covers mental health and substance abuse treatment. No limits are placed on the number of visits to mental health specialists (psychiatrists, psychologists, or counselors). However, coverage for psychotherapy is limited to consultations with a medical doctor. Belgium has a large number of inpatient and outpatient facilities (22), and specialized mental health care is readily accessible.

Patients who visit the hospital psychiatric emergency department are automatically enrolled in the psychiatric emergency program, which provides a full range of emergency evaluation, intervention, referral, and dis-

position services for adult patients in crisis. Services are provided 24 hours a day at the university hospital site. The psychiatric emergency team consists of a psychiatrist supervisor, two psychiatric residents, one psychologist, and four licensed mental health nurses. The program has a philosophy of referring patients to the least restrictive treatment setting and of maintaining patients in the community whenever possible. Patients in crisis are referred to outpatient care or other alternatives to inpatient treatment.

The psychiatric emergency program provides comprehensive assessment and a treatment and disposition plan for each patient. Patients may be scheduled for follow-up visits for further evaluation, short-term crisis intervention, medication assessment and management, or counseling or they may receive immediate referral and admission to the full continuum of both inpatient and outpatient mental health and addictions services (23).

Data collection
Institutional ethics committee approval was obtained for the study. Patients with a history of a psychiatric hospitalization who visited the psychiatric emergency department were consecutively recruited for the study over a two-year period (March 2000 to March 2002). They were evaluated by staff members of the psychiatric emergency program, who were trained in the use of structured assessment instruments. The constraints of an emergency setting did not allow the use of a full structured interview. A semistructured interview based on the Minimal Psychiatric Data form, a standardized and validated psychiatric patient registration form used by the Belgian Ministry of Social Affairs, Public Health, and Environment (5,23,24) was used to gather information about patients' demographic and clinical characteristics and mental health service use.

Psychiatric disorders were assessed according to DSM-IV criteria. Given the limited validity of DSM (25) classification in emergency settings (26, 27), diagnostic variables were recoded into more usable categories on the basis of previous research (5,23, 28,29). The categories were mental

disorders due to a medical condition, psychotic-spectrum disorders, mood disorders, adjustment disorders, neurotic disorders, psychoactive substance use disorders, other conditions that may be a focus of clinical attention, absent or deferred axis I diagnosis, and other diagnoses. Personality disorders were also assessed according to the DSM-IV criteria. Data on these diagnoses were recoded according to a dichotomous variable that indicated the presence of any personality disorder. We also gathered information about the patients' previous use of inpatient mental health services and discharge plans from previous hospitalizations.

Data analysis
The primary dependent variable was community stay, which was divided into three categories—short (less than two months from discharge), intermediate (between two and 12 months from discharge), and long (12 months from discharge or longer). Because the distribution of community stay in the study cohort was skewed, logistic regression was used to analyze the data. Backward stepwise analyses were used to compute the best-fit model of variables that predicted outcome group (short, intermediate, and long community stay). Demographic characteristics, patient characteristics, previous use of inpatient mental health services, and discharge plans were entered in the model as independent variables. The statistical significance of each independent variable in relation to the predictive model was assessed by using Wald chi square tests. The quality of the regression models was determined by the proportion of explained variance, the percentage of correctly classified cases, and results of goodness-of-fit tests (30). Goodness-of-fit index values with a p value less than .05 were considered to indicate a good fit. All statistical analyses were performed with SPSS 10.0 statistical software.

Results
The demographic and clinical characteristics of the study patients are summarized in Table 1. Of the 1,972 patients with a history of psychiatric

hospitalization seen in the psychiatric emergency department during the study period, about 44 percent were men and 56 percent were women. The majority were between the ages of 30 and 49 years (mean±SD= 38.8±13.6 years). Most patients lived with their family and were unemployed. Homeless persons represented only 2.7 percent (N=57) of the study group. Patients who met the criteria for mood disorders and substance use disorders constituted the largest groups of patient (about 14 percent and 30 percent of the study patients, respectively). Among those with an axis I disorder (N=1,734), 29 percent (N=502) met criteria for another axis I disorder, of which 203 patients had a substance use disorder. Forty-three percent of the patients received a diagnosis of a personality disorder.

Data on the length of community stay of the study patients are shown in Table 2. The mean±SD length of community stay was 74±97 days. One in three patients (N=647, or 32.8 percent) visited the psychiatric emergency department within 30 days of hospital discharge. The rate of readmission to an inpatient unit for patients who visited the psychiatric emergency department within 30 days of discharge was 55.5 percent (N=359). More than 43 percent visited the psychiatric emergency department within 60 days of hospital discharge, about one in three patients visited within two and 12 months of hospital discharge, and one in four visited 12 months or more after discharge. In the entire study group, the rate of inpatient readmission was 52.3 percent. Patients with a short or a long community stay were more likely to be readmitted than those with an intermediate community stay.

The predictors of community stay are shown in Table 3. Multivariate analyses showed that the prediction models overall had adequate goodness of fit and explained an acceptable proportion of the variance. Discharge against medical advice and, to a lesser degree, a history of short hospitalizations (less than two weeks) and the absence of an aftercare plan predicted a twofold odds of a short community stay. The odds of a short

community stay were also higher for unemployed patients and for patients with two or more past hospitalizations. An intermediate community stay was predicted by adjustment disorders, absent or deferred axis I diagnosis, and a history of short hospitalizations (less than two weeks). The significance of these factors may need further study. A long community stay

Table 1

Demographic and clinical characteristics of 1,972 patients with a history of psychiatric hospitalization who visited a psychiatric emergency department in Leuven, Belgium, between March 2000 and March 2002

Characteristic	N	%
Gender[a]		
Male	872	44.3
Female	1,096	55.7
Age group (years)[a]		
Less than 20	110	6.3
20 to 29	333	19
30 to 39	490	28
40 to 49	476	27.2
50 to 59	209	11.9
60 to 69	80	4.6
More than 69	54	3.2
Employment status[a]		
Employed	395	24.4
Unemployed	1,083	63.2
Unknown	201	12.4
Living arrangement[a]		
Alone	610	33.1
With family or partner	1,083	58.9
Other[b]	147	8
DSM-IV axis I diagnosis		
Mental disorders due to a medical condition	15	.8
Psychotic-spectrum disorders	103	5.2
Mood disorders	270	13.7
Adjustment disorders	97	4.9
Neurotic disorders	97	4.9
Psychoactive substance use disorder	576	29.2
Other conditions that may be a focus of clinical attention	142	7.2
Absent or deferred diagnosis	96	4.9
Other[c]	576	29.2

[a] Data were missing for some patients.
[b] Being homeless, living in an institution, and living in supported housing
[c] Eating disorders, somatoform disorders, factitious disorders, dissociative disorders, and sexual disorders

Table 2

Length of community stay and readmission rates for 1,972 patients with a history of psychiatric hospitalization who visited a psychiatric emergency department in Leuven, Belgium, between March 2000 and March 2002

Length of community stay	All patients		Patients who were readmitted		Patients who were not readmitted	
	N	%	N	%	N	%
Short (less than two months)[a]	862	43.7	474	55	388	45
Intermediate (two to 12 months)	627	31.8	295	47	332	53
Long (12 months or more)	483	24.5	262	54.3	221	45.7
Total	1,972	100	1,031	52.3	941	47.7

[a] Significant difference between patients who were readmitted and patients who were not readmitted (χ^2=10.16, df=2, p=.006, two-tailed).

Table 3

Significant predictors of short, intermediate, and long community stay among 1,972 patients with a history of psychiatric hospitalization who visited a psychiatric emergency department in Leuven, Belgium, between March 2000 and March 2002[a]

Predictor	Patients with short community stays (less than two months)		Patients with intermediate community stays (two to 12 months)		Patients with long community stays (12 months or more)	
	OR	95% CI	OR	95% CI	OR	95% CI
Employment status						
Unemployed	1.8	1.32–2.44	—	—	.68	.53–.88
Unknown	2.22	1.5–3.28	—	—	.63	.44–.89
Diagnosis						
Adjustment disorder	—	—	.06	0–.5	—	—
Absent or deferred axis I diagnosis	—	—	.29	.08–.97	—	—
Any personality disorder	.76	.61–.95	—	—	1.26	1.03–1.55
Two or more previous hospitalizations	1.4	1.1–1.76	—	—	.65	.53–.8
Previous hospitalization of less than two weeks	2.09	1.53–2.67	.54	.3–.95	.63	.48–.83
Discharge against medical advice	2.77	2.21–3.49	—	—	.47	.37–.6
Absence of aftercare plan	2.08	1.52–2.86	—			

[a] Predictive values of the regression models for the three groups ranged between 67 percent and 82 percent, had goodness of fit p values between .2 and .4, and explained between 14 percent and 28 percent of the total observed variance. Adjusted odds ratios were significant at the .05 probability level.

was predicted by the presence of a personality disorder. Patients who were discharged against medical advice and patients who had two or more previous hospitalizations had significantly lower odds of having a long community stay. The odds of having a long community stay were also lower for persons with a history of short hospitalizations (less than two weeks).

Discussion and conclusions

Although psychiatric emergency referrals occur for a variety of reasons, early referrals after hospitalization may suggest that the level of mental health support provided to patients in the community is inadequate. We examined the community tenure of patients with a history of psychiatric hospitalization and found that early referrals to the psychiatric emergency department were predicted by the patients' employment status and by characteristics of the health care system. Longer community stays were predicted by patient characteristics.

Most patients in the study were between the ages of 30 and 50 years, unemployed, and living with a partner or family member. We are somewhat hesitant to compare our findings with those of other studies because of the substantial differences between health care systems in various countries. Nevertheless, a few findings deserve attention. The patients in this study were more likely than those in general epidemiological samples of patients seen in psychiatric emergency departments to be unemployed and living alone (5,23,31,32). Diagnostic profiles of patients in this study also differed from the general diagnostic profile seen in psychiatric emergency services (33). The patients in our study were much more likely to have psychoactive substance use disorders and much less likely to have mood disorders and neurotic disorders. This finding could be attributable to the numerous resources for treatment of mood and anxiety disorders that were available to patients in the comparison study (33).

About a third of the patients in our study had a co-occurring psychiatric disorder. Substance use disorders were the most common; 40 percent of patients with comorbid disorders had a substance use disor-

der. The prevalence of comorbid disorders in our sample was relatively low, which reflects the low prevalence rate (28 percent) in the Belgian population (34).

That very few patients in the study were homeless (less than 3 percent) is quite remarkable. Although a high prevalence rate of mental disorders among homeless persons has been extensively reported (35–37), homeless persons were rarely seen in the psychiatric emergency department where the study took place (5,23). A possible explanation is that in Belgium, only the emergency departments in cities larger than Leuven have faced an increase of the number of homeless persons in the past few years (38).

Almost 44 percent of the patients in the study were referred to the psychiatric emergency department within 60 days of hospital discharge, a proportion similar to those reported in previous studies (6,15). We were, however, somewhat surprised to find that 55 percent of the patients with a short community stay were rehospitalized after visiting the psychiatric emergency department. This readmission rate was much higher than those reported in earlier studies (11–13). The higher rate may be attributable to the fact that our psychiatric emergency service does not provide a short-term admission unit that could serve as a holding area, which would help avert hospitalizations (39,40). Also, Belgium has the largest number of psychiatric beds per 100,000 inhabitants than any European country and the United States (22,41).

The finding that patients who visited the psychiatric emergency department within 60 days of hospital discharge were more likely to be readmitted conflicts with the idea that referrals to psychiatric emergency departments generally avert hospitalization (6). Indeed, previous research has suggested that treatment in psychiatric emergency departments reduces admissions (7–15). Our data provoke further thought about the appropriate role of psychiatric emergency departments, especially in light of an earlier suggestion that the psychiatric emergency department should be reconceptualized as a

"triage referral system" to reduce the number of patients with nonemergency illness episodes that are seen in these settings (42). From a viewpoint that favors cost-effectiveness and evidence-based policy, readmissions are indeed highly costly and should therefore be avoided. From a viewpoint that emphasizes secondary prevention, however, rehospitalization can be seen as an appropriate response to a patient's request for help and as a means of protecting the patient from further deterioration.

In our study, employment status contributed significantly to the length of community stay. Compared with employed patients, unemployed patients were almost two times as likely to have an early referral (less than 60 days after hospital discharge) to the psychiatric emergency department. This finding highlights the importance of supported employment for patients with chronic psychiatric illnesses. Previous research has shown that community-based supported employment initiatives increase patients' self-esteem, reduce their dependency, and alleviate their psychiatric symptoms (43,44).

The most interesting finding was the differential effect of patient and health-system characteristics on patients' length of community stay. Indeed, most of the factors that predicted a short community stay were health-system characteristics: discharge against medical advice, short previous hospitalizations, absence of an aftercare plan, and two or more previous hospitalizations. Moreover, the presence of an axis II disorder was a protective factor against a short community stay.

These findings are noteworthy because they are contrary to the common idea that short community stay is determined by severe mental illness (13–15). Indeed, short community stays have been previously associated with diagnoses of schizophrenia or substance use disorders (45). Despite the high prevalence of substance use disorders among the patients in our study, this factors did not predict community tenure. In contrast, patients who were discharged against medical advice or who did not receive an aftercare plan were two to

three times as likely to be referred to the psychiatric emergency department within 60 days of hospital discharge. These data support the suggestion that "continuity agents" could help address patients' problems in making the shift between the hospital and the community (45). These agents could include hospital-based discharge plans and aftercare arrangements for each patient. For example, in the study by McIntosh and Worley (17), follow-up telephone calls and postdischarge support groups were significantly related to symptom improvement after discharge, and such improvement could reduce readmissions (3).

Another important issue is the considerable effect of short hospitalizations on community tenure. Over the past 20 years, health policy has favored deinstitutionalization, with the aim of reducing the rate, length, and costs of psychiatric hospitalization (46). Effective discharge planning has also been seen as a factor in reducing length of stay and, in some cases, in reducing hospital readmissions. Our data, however, support the view that reduced lengths of stay may constitute less-than-optimal or even dysfunctional provision of mental health care for persons with serious mental illness (14,47).

Deinstitutionalization and the emphasis on community care have led to increased use of acute and specialized care by patients with mental illness. The rapid transition from hospital to community care has exposed deficiencies in service standards and gaps in treatment strategies and protocols, particularly for people with severe mental illness. Lack of knowledge and expertise among community care staff has led to service inefficiencies, including inappropriate admissions and repeated visits to emergency facilities, which adversely affect treatment outcomes. Given that an optimal mental health care policy has the aim of treating existing mental illness and increasing patients' community tenure, our findings highlight some areas of concern for public mental health policy. Contrary to the general assumption that psychiatric recidivism is a common condition among patients with serious

mental illness, our findings show that health system characteristics have a greater effect than patient characteristics on early referral to the psychiatric emergency department. Thus our findings show that early referrals to the psychiatric emergency department were determined by "modifiable factors," that is, by characteristics that can be modified through hospital-based and community-based interventions (48). Despite the overall presence of severe mental illness among the patients in our study, this feature was not predictive of short community stays.

This study had several methodologic weaknesses that should be considered in interpreting the findings. First, the *DSM* diagnostic categories that were used had limited reliability. Indeed, an acceptable level of diagnostic reliability in psychiatric emergency departments has been found only for broad diagnostic categories, such as psychosis, depression, and alcoholism (26,27). Given the importance of diagnostic classifications in emergency settings, further research is needed to develop a reliable and valid diagnostic tool for use in these settings. Second, our aim was not to test strategies for increasing community tenure. An optimal study would have a prospective design in which known predictors of early psychiatric referral would be used to examine the effectiveness of interventions to reduce the risk of early referrals. ♦

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