

ORIGINAL PAPER

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Patterns of care in patients discharged from acute psychiatric inpatient facilities

A national survey in Italy

Received: 29 July 2008 / Revised: 13 January 2009 / Published online: 11 February 2009

Abstract *Objective* To analyze the characteristics of patients scheduled for discharge from acute psychiatric inpatient facilities in Italy, and their pattern of care. *Methods* Socio-demographic and clinical characteristics, and patterns of care of 1,330 patients discharged from public and private inpatient facilities in Italy were assessed with a standardized methodology during an index period in the year 2004. *Results* About one half of the sample had schizophrenia or bipolar disorder. However, the case-mix

differed between public and private facilities, where in-patients had more frequently mood and anxiety disorders. The use of two or more drugs was very common, involving more than 90% of patients and including typically benzodiazepines and antipsychotics. Structured psychosocial treatments were rarely initiated during the hospital stay. Increasing age, male gender, long stay in the facility (>60 days), personality disorder and type of facility were associated with a higher likelihood of being discharged to a community residential facility. Predictors of discharge to another psychiatric facility were increasing age, being single, schizophrenia, personality disorder and organic mental disorder. Families were not involved in decisions about patients' discharge in a significant proportion of cases. University psychiatric clinics and private facilities were less coordinated with the

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community system of care than General Hospital Psychiatric Units. Referral of patients with substance use disorder to drug addiction services occurred in just 30% of subjects. *Conclusions* This study provides information on the characteristics and the pattern of care of patients discharged from inpatient facilities in a country that has closed down all its mental hospitals. This information may be relevant for those countries that are affording now the downsizing of MHs, and the expansion of community-based models of care.

■ **Key words** General Hospital Psychiatric Units – health services research – mental disorders/epidemiology – patterns of care

Introduction

The last two decades have seen a substantial challenge in the overall architecture of mental health in most developed countries, with a marked reduction of mental hospitals and the gradual setting up of a network of diversified community-based services, including General Hospital Psychiatric Units (GHPUs); in Europe these changes have occurred almost everywhere, although at a different pace, as shown by recent reviews of the state of mental health care in the four largest European countries [2, 18, 23, 44, 51].

Italy has been the first country ever to completely phase down all former mental hospitals ($N = 76$), through a law passed in 1978 and called ‘Law 180’, which radically changed the architecture of psychiatric care. This law had a far-reaching international impact, as shown by the large number of related papers and monographs published in international journals [10, 14, 38].

The treatment of acutely ill patients, according to a recent survey, is guaranteed by a network of 262 GHPUs, 23 University Psychiatric Clinics (UPCs), 16 Community Mental Health Centers operating 24 h a day (24-h CMHCs), and 14 crisis-centers with few beds available for patients with mental disorders [17]. Overall, in Italy these public facilities have a total of 4,108 beds available, with 0.78 beds per 10,000 inhabitants. Fifty-four private inpatient facilities (with a total of 4,862 inpatient beds, mean size: 90 ± 48.2 beds) are also in operation, with 0.94 beds per 10,000 inhabitants. In the year 2001, public and private psychiatric admission rates were 26.7 and 17.8 per 10,000 inhabitants, respectively. Yet, no data are available on qualitative and quantitative pattern of care in patients discharged from public and private psychiatric acute inpatient care facilities. Data on characteristics and functioning of acute inpatient facilities are limited also at an European level (de Girolamo and Tansella [16]; Lelliott [28]; Ruud et al.

[43]), and this highlights the need of accurate observational studies to be carried out in these settings.

The ‘PROGRES-Acute’ (PROGetto RESidenze on Acuti, i.e.: Residential Care for Acute Patients Project) is the first study carried out in Italy aimed at obtaining comprehensive, nationwide data on public and private facilities, and on their functioning in Italy. Results of the first phase of this large-scale project, which focused on the physical characteristics, staff arrangements, and organization of public and private inpatient facilities, have already been reported [17, 22]. To date, it is the largest international project conducted in the area of acute psychiatric inpatient care.

The aim of the present paper is to describe the socio-demographic, clinical, and treatment-related characteristics of a representative sample of patients scheduled for discharge from Italian acute, public and private, psychiatric inpatient facilities in an index period of the year 2004. It was expected that these characteristics would differ by the type of psychiatric facility examined (i.e., GHPUs, UPCs and private facilities), since private facilities are not allowed to admit compulsory patients, and, by tradition, they are likely to host patients generally more cooperative, and in need of longer-term treatment.

A secondary aim of the study is to evaluate the relationship of pharmacological and psychosocial interventions, as well as of patients’ socio-demographic and clinical characteristics with their post-discharge destination (i.e., to home, to a RF, or to another inpatient facility for longer hospital stay). Patients not discharged to their homes and in need of long-term care represent an additional cost for health budgets, and this cost has to be considered in both the planning and the delivery of services. The clarification of factors associated with and possibly affecting the various discharge options is therefore mandatory for improved service planning and delivery, and also to evaluate the outcomes of any mental health reform.

Methods

■ Data collection

All 21 Italian regions were asked to participate in the study and all agreed, with the exception of the Sicily region. Each region appointed a coordinator, who organized and supervised data collection. The project began in 2001 and was completed in 2005. In phase 1, all public and private inpatient facilities admitting acute patients with a primary diagnosis of mental disorders were surveyed; residential facilities and forensic Mental Hospitals were not included. Due to budget constraints, the study design for phase 2 initially included a 20% random sample of GHPUs (stratified by Region) and all remaining public facilities. More severe financial constraints in the Lazio region required that participation in that region be restricted to facilities willing to provide data on a voluntary basis. Eight non-selected GHPUs, distributed throughout the country, also wished to participate—a decision that resulted in

a higher percentage of GHPUs actually participating in phase 2 (38.5%) than originally foreseen. Six 24-h CMHCs located in the Campania Region, three UPCs (located in Bari, Parma, and Genoa), and 18 (out of 54) private facilities were unable to participate in phase 2 due to organizational problems.

During a 12-day index period in each participating public facility, all patients scheduled for discharge within a week were enrolled and assessed by research assistants before leaving the facility. A shorter index period of 3 days was used for private facilities, because the National Association of Private Hospitals allowed patients' recruitment and evaluation only for a limited number of days, due to time and work constraints in these facilities.

Socio-demographic and clinical data of patients were obtained from the treating physician or retrieved from patients' records.

Two standardized instruments were used to assess patient psychopathology and functioning at discharge: the Italian version of the 24-item Brief Psychiatric Rating Scale (BPRS) [15] and a version of the Global Assessment of Functioning Scale with detailed instructions—the Personal and Social Performance scale (PSP)—which has been shown to have high reliability [37]. The BPRS item scores ranged from 0 (symptom absent) to 6 (severe symptoms), and the total score ranged from 0 to 144. The PSP scores ranged from 1 to 100, with a score of 100 indicating excellent functioning.

A centralized training session for administering the instruments was organized for all regional coordinators, who then trained research assistants (in the regions employing additional raters). The quality control of data was conducted locally and then centrally.

The primary diagnosis was assigned by the treating psychiatrist, according to ICD-10 criteria [54]. Treatment information was obtained from the treating physician and also retrieved from patients' records, and then classified as follows: "Pharmacological treatment" was any medication prescribed by the treating psychiatrist and administered during the hospital stay. For the purpose of the analyses conducted in the present study, we defined "polypharmacy" as the simultaneous prescription of at least two compounds during the care episode. "Psychosocial treatments" were defined as: (1) "structured treatment" when they were delivered by following a specific model and required that the therapist had a specific training in that treatment mode, and (2) "unstructured treatment", when special training was not required. "Network treatment" referred to treatments aimed at improving a patient's ability to maintain emotional bonds with family and friends. "Structured treatment" included individual psychotherapy, group psychotherapy, and personally tailored rehabilitation programmes. "Unstructured treatment" included informal supportive psychological interventions, recreational and art therapy group work, and any informal educational intervention (including sports activities, groups, etc...). "Network treatment" included self-help groups, informal social activities (i.e., parties, volunteer-assisted outings, etc...), and money incentives for social interaction.

The present paper is focused on patients to be discharged from GHPUs, UPCs, and private inpatient facilities. Sixty patients discharged from 24-h CMHCs and crisis-centers, were not included in the analyses because their small numbers prevents meaningful comparisons with the other facilities.

Statistical analysis

Categorical data were compared between groups by using either χ^2 or the Fisher exact test when appropriate. Adjusted standardized residuals were calculated in contingency tables with $n \times 2$ cells, to identify cells with discrepancies between observed and expected frequencies exceeding 1.96 and therefore significant at $P < 0.05$. A one-way ANOVA was conducted to compare the mean BPRS and PSP scores among facility types and place of discharge. Levene's test was used to examine the homogeneity of variance assumption. Following a significant F test, post hoc tests were conducted using Games–Howell test, which allows for unequal variance between groups and is accurate for unequal sample sizes. For these post hoc pairwise tests, the P -level was corrected to

0.016 (0.05/3) to control for the Type-I error associated with three comparisons.

Logistic regression analysis was used to compare the pattern of use of psychotropic drugs and psychosocial treatments across the three types of psychiatric facilities, after adjusting for the diagnostic case mix. This was done by including the variable 'type of diagnosis' in the model.

Multinomial logistic regression analysis was used to examine the demographic and clinical correlates of place of discharge (home, community RF, other psychiatric facility). In this analysis, discharge to home was used as the reference category.

All analyses were conducted using SPSS, version 14.0.

Results

Socio-demographic characteristics by type of facility

Patients in private facilities were significantly older than patients in GHPUs and UPCs (Table 1). The gender distribution did not differ by type of facility. Patients in GHPUs were more likely to be single than patients discharged from private facilities. Students were more likely to be discharged from UPCs, while patients living on social security were more likely to be discharged from private facilities: unemployed patients were less frequently discharged from private facilities. Lastly, patients discharged from private facilities were more likely to live with a partner or in institutions than GHPU-discharged patients were. No other statistically significant differences were found across facility types.

Clinical characteristics by type of facility

The diagnostic distribution differed significantly by facility type (Table 2). Patients with schizophrenia were significantly more frequently discharged from GHPUs than from private facilities. Patients with mood or anxiety disorders were more frequently discharged from UPCs, which were less likely to admit patients with personality disorders (Table 2). Patients discharged from GHPUs were more likely to have been uncooperative or oppositional at admission, while patients discharged from private facilities had more frequently agreed to admission.

Patterns of care

There were 164 (15.7%) compulsory admissions in GHPUs and only one (1.6%) in UPCs; as already mentioned, compulsory admissions to private inpatient facilities are not allowed. Approximately 1/5 of compulsory admissions were extended beyond the duration customarily set for the first compulsory treatment, that is one week ($N = 38$, 19.6%).

Approximately one-third of patients discharged were at their first-ever admission: 334 (37.2%) in

Table 1 Sociodemographic characteristics of the sample

	GHPUs (N = 1,043)			UPCs (N = 111)			Private facilities (N = 176)			Total			Test, significance
	Mean	SD	Median	Mean	SD	Median	Mean	SD	Median	Mean	SD	Median	
Age (years)	43.4	14.2	41.0	42.7	15.6	40.0	51.7	16.0	50.0	44.4	14.9	42.0	$F = 25.1, P < 0.001$
	GHPUs (N = 1,043)		UPCs (N = 111)		Private facilities (N = 176)		Total		Test, significance				
	N	%	N	%	N	%	N	%					
Gender													
Men	548	52.5	50	45.0	81	46.0	679	51	$\chi^2 = 4.7, P = 0.12$				
Women	495	47.5	61	55.0	95	54.0	651	49					
Total	1,042	100	111	100	176	100	1,330	100					
Marital status													
Single	564	54.9	54	48.7	60	34.1	678	51.6	$\chi^2 = 32.7, P < 0.001$				
Separated/divorced	115	11.2	15	13.5	31	17.6	161	12.2					
Widowed	56	5.4	11	9.9	19	10.8	86	6.5					
Married/cohabiting	293	28.5	31	27.9	66	37.5	390	29.7					
Total	1,028	100	111	100	176	100	1,315	100					
Education													
Illiterate	38	4.1	5	4.5	11	6.4	54	4.4	$\chi^2 = 15.5, P = 0.22$				
Primary school	633	67.5	66	60	119	69.2	818	67.1					
High school	127	13.5	20	18.2	18	10.5	165	13.5					
Technical degree	103	11	12	10.9	15	8.7	130	10.7					
University	37	3.9	7	6.4	9	5.2	53	4.3					
Total	938	100	110	100	172	100	1,220	100					
Nationality													
Italian	995	95.5	111	100.0	174	98.9	1,280	96.3	$\chi^2 = 10.1, P = 0.12$				
European union/other	47	4.5	0	0.0	2	1.1	49	3.7					
Total	1,042	100	111	100	176	100	1,329	100					
Living situation													
At home													
Alone	171	16.8	15	13.6	36	20.7	222	17.1	$\chi^2 = 45.8, P < 0.001$				
With parents/siblings	378	37.2	52	47.3	42	24.1	472	36.3					
With a partner	321	31.6	34	30.9	75	43.1	430	33.1					
With friends	24	2.4	1	0.9	4	2.3	29	2.2					
Institution	80	7.9	7	6.4	8	4.6	95	7.3					
Other	42	4.1	1	0.9	9	5.2	52	4					
Total	1,016	100	110	100	174	100	1,300	100					
Occupational status													
Currently unemployed	284	28.7	33	29.7	32	18.7	349	27.4	$\chi^2 = 46.3, P < 0.001$				
Full or part-time ordinary work	248	25.1	27	24.3	46	26.9	321	25.2					
Supported employment	11	1.1	0	0	0	0	11	0.9					
Other (i.e., housewife, student, etc.)	447	45.1	51	46	93	54.4	591	46.5					
Total	990	100	111	100	171	100	1,272	100					

GHPUs, 41 (39.8%) in UPCs, and 64 (36.8%) in private facilities.

With regard to type of treatment, nearly all patients (98.1%) were receiving one or more medications; in fact polypharmacy represented the predominant treatment modality for the entire sample, involving more than 90% of patients.

Medication use and psychosocial treatments were compared among the three types of facilities after adjusting for the diagnostic case-mix in logistic regression models (Table 3). Use of typical and atypical antipsychotic medications, mood stabilizers and antiparkinson medications was equally likely in the three types of facilities. However, benzodiazepine

use was significantly less frequent in the UPCs than in GHPUs. Compared with GHPUs, UPCs and private facilities were more likely to use antidepressants and antihistaminic. Regarding psychosocial treatments, GHPUs more frequently relied on network intervention programmes in treating inpatients and private facilities initiated more frequently structured and unstructured psychosocial treatments during the admission.

■ Discharge characteristics

Agreement with the outpatient team on patient discharge was reported for approximately 64% of GHPU

Table 2 Clinical characteristics of the sample

	GHPUs		UPCs		Private facilities		Test, significance	
	N	%	N	%	N	%	χ^2	P
Diagnosis								
Schizophrenic disorders	402	38.6	31	27.9	42	23.9	54.09	$P < 0.001$
Bipolar disorder	204	19.6	34	30.6	39	22.2		
Personality disorders	136	13.1	5	4.5	27	15.3		
Mental retardation and organic brain disorders (including Dementia)	53	5.1	2	1.8	11	6.3		
Substance or alcohol abuse	94	9.0	5	4.5	18	10.2		
Unipolar depression and anxiety disorders	139	13.4	33	29.7	39	22.2		
Other disorders (i.e., eating disorders, other mental disorders)	13	1.2	1	0.9	0	0.0		
Patient's cooperation at admission								
Hostile to admission (uncooperative)	203	19.7	15	13.6	19	10.9	30.5	$P < 0.001$
Reluctant (unwilling)	173	16.7	14	12.7	17	9.8		
Indifferent	170	16.5	8	7.3	31	17.8		
Favorable	487	47.1	73	66.4	107	61.5		

cases, but UPCs and private facilities were less likely (29.7 and 47.2%, respectively) to plan patients' discharge in collaboration with an outpatient team. Discharge was agreed with family members in approximately 65% of cases, irrespective of the type of facility. In the majority of cases, drug addiction services (DAS) were not involved in the discharge of

patients requiring specialized treatment for substance abuse and dependence: referrals to these services were made for less than 30% of patients with substance use disorders.

In the overall sample, 963 patients (72.4%) were discharged to their homes, 165 (12.4%) were discharged to a community RF, and 131 (9.8%) were

Table 3 Biological and psychosocial treatments

	GHPUs		UPCs		Private facilities		Adjusted OR and 95% CI ^a	
	N	%	N	%	N	%	UPC versus GHPU	Private facilities versus GHPU
Pharmacological treatment								
Typical antipsychotic	507	48.6	39	35.1	71	40.3	0.7 (0.4–1.1)	0.9 (0.6–1.2)
Atypical antipsychotic	469	45.0	55	49.5	81	46.0	1.3 (0.9–2.0)	1.2 (0.9–1.7)
Antidepressants	357	34.2	61	55.0	103	58.5	1.8 (1.2–2.9)**	2.4 (1.6–3.4)**
Tricyclic	47	4.5	22	19.8	18	10.2		
SSRI	242	23.2	42	37.8	63	35.8		
SNRI	41	3.9	9	8.1	12	6.8		
NASSA	37	3.5	7	6.3	16	9.1		
NARI	10	1.0	1	0.9	2	1.1		
Others	38	3.6	4	3.6	12	6.8		
Lithium salts	49	4.7	10	9.0	10	5.7	1.4 (0.7–3.0)	1.1 (0.5–2.2)
Other mood stabilizers	288	27.6	35	31.5	40	22.7	1.2 (0.8–1.9)	0.7 (0.5–1.1)
BDZ and/or hypnotics	807	77.4	76	68.5	134	76.1	0.6 (0.4–0.9)*	0.9 (0.6–1.3)
Antiparkinson	131	12.6	15	13.5	18	10.2	1.3 (0.7–2.3)	1.0 (0.6–1.7)
Antihistaminic	28	2.7	10	5.7	17	5.3	6.4 (3.3–12.4)**	2.1 (1.0–4.5)*
Polypharmacy								
More than one class of drug	940	92.2	103	93.6	165	94.3	1.1 (0.5–2.5)	1.4 (0.7–2.8)
More than one antipsychotic	262	25.7	22	20.0	41	23.4	0.9 (0.6–1.5)	1.1 (0.7–1.7)
More than one antidepressant	59	5.8	17	15.5	22	12.6	2.1 (1.1–3.9)*	1.8 (1.1–3.2)*
Psychosocial treatment								
Structured treatment	225	21.6	26	23.4	75	42.6	1.1 (0.7–1.8)	2.6 (1.9–3.7)**
Individual psychotherapy	37	3.6	19	17.1	18	10.2		
Group psychotherapy	146	14.0	9	8.1	50	28.4		
Rehabilitation program	81	7.8	8	7.2	36	20.4		
Unstructured treatment	493	47.3	49	44.1	125	71.0	0.9 (0.6–1.3)	2.8 (1.9–3.9)**
Network treatment	499	47.8	41	36.9	53	30.1	0.6 (0.4–0.97)*	0.5 (0.3–0.7)**

* $P < 0.05$, ** $P < 0.01$ ^aOR adjusted for the diagnostic case-mix in logistic regression models

discharged and transferred to another inpatient facility (Table 4).

Two multinomial logistic regression analyses were carried out to identify the independent predictors of destination at discharge. In each model, odds ratios of discharge to a community RF and transfer to another inpatient facility versus discharge to home were calculated.

The first model included demographic characteristics, diagnoses, length of stay and type of facility. Increasing age (OR = 1.017, 95% CI 1.003–1.035, $P = 0.017$), male gender (OR = 1.662, 95% CI 1.094–2.524, $P = 0.017$), long stay in the facility (>60 days) (OR = 1.810, 95% CI 1.018–3.217, $P = 0.043$), personality disorder (OR = 2.024, 95% CI 1.138–3.598, $P = 0.016$) and type of facility (GHPUs vs. UPCs and private facilities, OR = 4.642, 95% CI 2.350–9.171, $P < 0.001$) were associated with a higher likelihood of being discharged to a community RF. Predictors of discharge to another psychiatric facility were increasing age (OR = 1.021, 95% CI 1.004–1.039, $P = 0.017$), being single (OR = 2.600, 95% CI 1.497–4.516), schizophrenia (OR = 2.026, 95% CI 1.182–3.471,

$P = 0.01$), personality disorder (OR = 3.258, 95% CI 1.681–6.314) and organic mental disorder (OR = 4.054, 95% CI 1.796–9.150, $P = 0.001$). Unemployment and educational level were unrelated with destination at discharge.

The second model included gender, age, functional impairment, severity of psychopathology and type of facility. Higher severity of psychopathology (OR = 1.019 95% CI 1.006–1.033, $P = 0.006$), lower functioning (OR = 0.983, 95% CI 0.972–0.995, $P = 0.005$), male gender (OR = 1.564, 95% CI 1.036–2.361, $P = 0.033$) and type of facility (GHPUs vs. other, OR = 3.659, 95% CI 1.789–7.486, $P < 0.01$) were associated with a significantly higher likelihood to be discharged to a community RF, while only lower functioning was associated with transfer to another psychiatric facility (OR = 0.97, 95% CI = 0.957–0.982, $P < 0.001$).

Discussion

The implementation of the 1978 reform law offers a unique opportunity to study the strengths and the

Table 4 Characteristics of discharged patients by place of discharge

Variables	Discharged to home (N = 963)		Discharged to residential facilities (N = 165)		Discharged to another inpatient facility (N = 131)	
Age (years)						
Lower than 30	271	28.1%	42	25.5%	39	29.8%
Gender						
Men	455	47.2%	104	63.0%	77	58.8%
Marital status						
Single	454	47.5%	91	56.2%	89	68.5%
Education						
Illiterate/primary school	219	24.3%	34	24.8%	38	31.1%
Living situation						
Alone	166	17.5%	34	21.3%	15	11.5%
Occupational status						
Currently unemployed	229	24.5%	52	34.9%	42	33.6%
Setting						
GHPU	722	75.0%	154	93.3%	109	83.2%
Diagnosis						
Schizophrenia	334	34.8%	58	35.2%	57	43.5%
Organic disorders	41	4.3%	7	4.2%	16	12.2%
Polypharmacy						
More than one antipsychotic	231	24.0%	38	23.0%	38	29.0%
More than one antidepressant	69	7.2%	6	3.6%	5	3.8%
Adverse events						
Yes	84	8.8%	13	8.0%	10	7.8%
Psychosocial treatment						
No psychotherapy	724	75.2%	131	79.4%	96	73.3%
No unstructured treatment	440	45.7%	107	64.8%	70	53.4%
No network intervention	516	53.6%	101	61.2%	74	56.5%
Characteristic of admission						
Compulsory	123	12.8%	24	14.5%	12	9.2%
Length of stay						
More than 60 days	82	9.5%	18	13.6%	27	25.2%
Characteristic of discharge						
Not agreed with the CMHC (N = 1,249)	407	42.7%	55	33.3%	37	28.5%
Not agreed with the family (N = 1,198)	265	28.5%	61	39.6%	54	47.0%
Not agreed with the DAS (N = 181)	95	73.1%	15	55.6%	15	62.5%
BPRS (Mean, SD)	43.4	14.0	50.0	16.2	50.6	16.3
PSP (Mean, SD)	55.1	18.5	45.4	18.8	40.9	19.2

drawbacks of a mixed (public/private) community-based mental health care system. Patients scheduled for discharge from public inpatient facilities were more likely to be young, single, and unemployed compared with patients discharged from private facilities. Moreover, GHPUs had a more complex and severe case-mix than private facilities, as shown by the higher proportion of patients with schizophrenia or personality disorders, and by the larger number of patients who had been uncooperative or oppositional at admission; this result is in line with previous findings reported in the literature, including findings of Italian studies [3, 5, 21, 25, 27, 50].

■ Integration of inpatient care with community mental health services

Our study provides evidence that integration with community mental health care services varies across facility types. GHPUs showed a higher degree of integration with community teams than UPCs. This finding is probably accounted for by the fact that 61% of UPCs do not have a defined catchment area, because they admit patients from different catchment areas and regions [17]. It should be noted, however, that more than one-third of inpatient discharges were not agreed with the local outpatient community team, although evidence suggests that hospitalization (especially short hospital stays) is more effective when cooperative links with outpatient treatment teams are established [45]. We found that the lack of coordination with the DAS for patients with substance use disorders was particularly problematic: discharge had been agreed with these services for less than 30% of patients with these problems. This is a likely effect of the rigid separation between the two circuits of care in Italy, which has an impact on optimal treatment especially for patients with dual diagnosis, also increasing their risk of morbidity and mortality [39].

Considering the investment of extensive resources in inpatient care, more efforts need to be focused on optimizing patients' connections with community services prior to discharge [8, 30]. Coordination with families and community teams was more frequently associated with discharge of patients to their homes.

Patient characteristics such as male gender and being single were associated with discharge to another facility rather than to home. Although it is possible that single patients suffered from more severe disorders, this finding also highlights the relevance of practical and emotional support, as well as of health system characteristics, for patients' tenure in the community after hospital discharge [9]. Differently from other studies [1], individuals with schizophrenia had a higher probability of being discharged to a more restrictive environment than patients with other disorders. We found that a diagnosis of organic brain disorder, not surprisingly, reduced the likelihood of

discharge to an independent living situation. Poorer functioning, as well as more severe psychopathology, were also associated with a lower likelihood of being discharged to home.

■ Home discharge and the burden of informal care

About three out of four patients were discharged to their homes, even when an outpatient community treatment plan had not been made: this finding raises serious questions concerning the quality of care and family burden. Previous studies have shown that high-risk patients often do not receive the community care they require, which may lead to rapid deterioration [12]. The most successful aftercare strategy involves staff-family communication concerning discharge plans [7]—a policy that can play an important role in preventing relapse and readmission.

Lack of staff-family communication increases the burden of informal care on family members. A large study carried out in Italy has found that family members of patients with schizophrenia were significantly more impacted by the patient's condition than family members of patients with serious somatic diseases [31, 33–35]. Up to 80% of the investigated families were in regular contact with mental health services, and 59% attended general informative sessions on the patient's illness and treatment: yet, only a very small percentage (8%) of patients and their families received any form of structured psychoeducational intervention, despite these interventions have proved to be successful in reducing symptoms and preventing relapse at 7–12-month follow-up [29].

■ Patterns of pharmacotherapy

In the present study, polypharmacy was provided to the large majority of patients, in line with other surveys conducted in inpatient settings [13, 40]. However, in some studies lower rates of polypharmacy have been found [6]. These contrasting findings may also be due to different definitions of polypharmacy (our study adopted an overinclusive definition). Polypharmacy is associated with generally higher daily doses of medications [36, 53] and, therefore, with increased risk of adverse events. Indeed, reports of severe adverse events were quite frequent in our sample: for approximately one patient in ten (10%), on average. On the other hand, polypharmacy was unrelated to discharged patients' final destination because most patients who had received polypharmacy were discharged to their homes.

Antipsychotic drugs prescription was similar across the three types of facilities, while antidepressants were more frequently administered in private facilities and UPCs, after controlling for the diagnostic case mix. Antipsychotic polypharmacy is a widespread practice (involving approximately 25% of patients in

both public and private facilities), in line with data from other Italian surveys performed both in hospital and community settings [4, 32, 36, 49]. Although this prescribing pattern may be necessary to facilitate symptom remission in acute patients or to stabilize them during a switch from one medication to another, previous data have shown that antipsychotic polypharmacy is generally a long-term practice and is also widely used in community outpatient settings, exposing patients to medication doses higher than generally recommended thereby [4, 32]. The choice to use polypharmacy is strongly influenced by psychiatrists' and nurses' perception of patients' needs: continuing medical education and treatment algorithms may prove to be a useful tool in helping prevent the irrational utilization of this form of treatment [26].

Antidepressant polypharmacy also was relatively common in UPCs and, to a lower degree, in private facilities. Although this treatment strategy may be useful for treating chronic or resistant depressive disorders, very few controlled trials have compared adjunctive antidepressant treatment with monotherapy or other strategies [41], and to date, evidence on its effectiveness is limited and should be weighed against an increased risk of pharmacokinetic interactions and adverse effects.

■ Patterns of psychosocial treatments

Our results indicate that patients in private facilities were more likely to receive rehabilitation and psychotherapy than their counterparts admitted to public facilities. The limited provision of psychosocial treatments to patients in public facilities might depend on the adoption of "aggressive" pharmacological treatment strategies to achieve rapid symptom remission in acute psychotic disorders and/or on the belief that psychosocial interventions are not beneficial for severe patients over a short time span (average GHPU stay: 12.5 days) [17, 22].

It is unlikely that the more extensive utilization of psychotherapy and rehabilitation techniques observed in acute private inpatient facilities depended on a greater availability of medical and nursing staff, because acute private inpatient facilities have a lower staff-patient ratio than public hospitals [17]. In any event, psychosocial intervention during the acute treatment phase is typically uncommon [11, 22], although service users should have priority access to these types of programmes [47]. We believe that this phenomenon reflects psychiatrists' more general difficulties in implementing psychosocial intervention programmes for severely ill patients [52].

■ Limitations

Some limitations must be considered when drawing inferences from the present data. Patients were not

assessed with a structured diagnostic interview, and the clinical diagnosis reported in the form is the primary diagnosis. Therefore, diagnostic reliability might be limited and the impact of patterns of comorbidity on treatment choice cannot be assessed. However, the risk of drawing inferences on misdiagnosed participants can be considered relatively low, given that broad diagnostic categories were used and diagnoses were made after a period of inpatients' close observation. Moreover, evaluation of content and quality of care was not based on more sophisticated instruments investigating critical areas such as patients' needs (e.g., Camberwell Assessment of Need [46]), patients' and caregivers' satisfaction with care (e.g., Verona Service Satisfaction Scale [24]) and content of care (e.g., International Classification of Mental Health Care [20]). However, patients and admitting facilities were evaluated using two ad hoc designed forms, developed starting from the experience gained in a previous nationwide study aimed at evaluating psychiatric residential facilities [19].

Conclusions: which lessons from the Italian experience?

Overall, the implementation of community-based mental health care has been successful in many parts of Italy and has made mental health care accessible to large number of individuals with various mental health needs, who in the past might have refrained from any contact with the old-fashioned asylum system. However, there are no clear indications that the outcome of severe mental disorders has substantially changed: the few longitudinal studies point to persisting unsatisfactory outcomes of numerous severe patients [42]. In those cases in which a relatively more favorable outcome can be ascertained, it remains to be explained whether it can be attributed to more effective forms of treatment, to the elimination of an iatrogenic environment, such as the backward and dehumanizing MH, or to non-clinical factors (i.e., changes in the socio-economic environment, or wider availability of family support).

For the care of acutely mentally ill, as in all other areas of medical care, inpatient care represents an important treatment need and resource in psychiatry: indeed, "there is no evidence that a balanced system of mental health care can be provided without acute beds" [48]. Yet, inpatient care is a costly option and is frequently associated with a considerable emotional stress for inpatients and their relatives. Integration of inpatient facilities with community mental health care services is imperative to reduce the risk of relapse and recurrence.

This study provides information on the characteristics and the pattern of care of patients discharged from inpatient facilities in a country that has closed down all its mental hospitals. This information may

be relevant for those countries that are affording now the downsizing of MHs, and the expansion of community-based models of care.

■ **Acknowledgments** Giorgio Bignami, MD, provided continuous support throughout the entire National Mental Health Project, during which this study was conceived. Francesca Bellini, MD, and Vincenzo Menniti, MD, gave a valuable contribution to the preparation of this manuscript. The study was entirely funded by a grant from the Italian Ministry of Health, Rome, Italy. This paper is dedicated to the memory of Pierluigi Morosini, M.D., who was the Scientific Director of the National Mental Health Project, and enthusiastically supported and contributed to the development and conduct of this national research project. The Authors wish to thank Ms. Melinda Tucker for her help in the revision of the English translation.

References

- Advokat C, Eustis N, Pickering J (2005) Relationship between diagnosis and disposition of patients admitted to a state psychiatric hospital. *Psychiatr Q* 76:97–106
- Becker T, Hülsmann S, Knudsen HC, Martiny K, Amaddeo F, Herran A et al (2002) Provision of services for people with schizophrenia in five European regions. *Soc Psychiatry Psychiatr Epidemiol* 37:465–474
- Bezzi R, Erlicher A, Lora A (2006) Effectiveness of hospitalisation in acute psychiatric inpatient units in Lombardy (Italy). *Epidemiol Psichiatri Soc* 15:233–237
- Biancosino B, Barbui C, Marmai L, Donà S, Grassi L (2005) Determinants of antipsychotic polypharmacy in psychiatric inpatients: a prospective study. *Int Clin Psychopharmacol* 20:305–309
- Boot B, Hall W, Andrews G (1997) Disability, outcome and casemix with acute psychiatric inpatient units. *Br J Psychiatry* 171:242–246
- Botvinik L, Ng C, Schweitzer I (2004) Audit of antipsychotic prescribing in private psychiatric hospital. *Australas Psychiatry* 12:227–233
- Boyer CA (1997) Meaningful linkage practices: challenger and opportunities. *New Dir Ment Health Serv* 73:87–101
- Boyer CA, McAlpine DD, Pottick KJ, Olfson M (2000) Identifying risk factors and key strategies in linkage to outpatient psychiatric care. *Am J Psychiatry* 157:1592–1598
- Bruffaerts R, Sebbe M, Demyttenaere K (2004) Effects of patient and health-system characteristics on community tenure of discharged psychiatric inpatients. *Psychiatric Serv* 55:685–690
- Burti L (2001) Italian psychiatric reform 20 plus years after. *Acta Psychiatr Scand (Suppl)* 410:41–46
- Chiappelli M, Grigoletti L, Albanese P, Taras MA, Tulli P, Grassi A, I-Psycost Gruppo (2007) The cost and utilization of psychotherapy in community-based mental health services. A multicentre study in five Italian areas [Article in Italian]. *Epidemiol Psichiatri Soc* 16:152–162
- Cuffel BJ, Held M, Goldman W (2002) Predictive models and the effectiveness of strategies for improving outpatient follow-up under managed care. *Psychiatric Serv* 53:1438–1443
- Davids E, Bunk C, Specka M, Gastpar M (2006) Psychotropic drug prescription in a psychiatric university hospital in Germany. *Prog Neuropsychopharmacol Biol Psychiatry* 30:1109–1116
- de Girolamo G, Cozza M (2000) The Italian psychiatric reform. A 20-year perspective. *Int J Law Psychiatry* 23:197–214
- de Girolamo G, Bellini M, Bocchia S, Ruggeri M (1995) Brief psychiatric rating scale versione 4.0 “ampliata” (BPRS 4.0). *Epidemiol Psichiatri Soc* 4:69–85
- de Girolamo G, Tansella M (2006) Psychiatric units in general hospitals. Problems and perspectives in Europe. *Epidemiol Psichiatri Soc* 15(2):85–90
- de Girolamo G, Barbato A, Bracco R, Gaddini A, Miglio R, Morosini P et al (2007) The characteristics and activities of acute psychiatric inpatient facilities: a national survey in Italy. *Br J Psychiatry* 191:170–177
- de Girolamo G, Bassi M, Neri G, Ruggeri M, Santone G, Picardi A (2007) The current state of mental health care in Italy: problems, perspectives, and lessons to learn. *Eur Arch Psychiatry Clin Neurosci* 257:83–91
- de Girolamo G, Picardi A, Santone G, Falloon J, Morosini P, Fioritti A, Micciolo R, PROGRES Group (2005) The severely mentally ill in residential facilities: a national survey in Italy. *Psychol Med* 35:421–431
- de Jong A (2000) Development of the International Classification of Mental Health Care (ICMHC). *Acta Psychiatr Scand Suppl* 405:8–13
- Eichler T, Schützwohl M, Priebe S, Wright D, Adamowski T, Rymaszewska J et al (2008) Loss to follow-up in longitudinal psychiatric research. *Epidemiol Psichiatri Soc* 17:138–147
- Gigantesco A, Miglio R, Santone G, de Girolamo G, Bracco R, Morosini P et al (2007) The process of care in general hospital psychiatric units: a national survey in Italy. *Aust N Z J Psychiatry* 41:509–518
- Glover G (2007) Adult mental health care in England. *Eur Arch Psychiatry Clin Neurosci* 257:71–82
- Henderson C, Hales H, Ruggeri M (2003) Cross-cultural differences in the conceptualisation of patients’ satisfaction with psychiatric services—content validity of the English version of the Verona Service Satisfaction Scale. *Soc Psychiatry Psychiatr Epidemiol* 38(3):142–148
- Hugo M (2000) Comparative efficiency ratings between public and private acute inpatient facilities. *Aust N Z J Psychiatry* 34:651–657
- Ito H, Koyama A, Higuchi T (2005) Polypharmacy and excessive dosing: psychiatrists’ of antipsychotic drug prescription. *Br J Psychiatry* 187:243–247
- Lasalvia A, Gentile B, Ruggeri M, Marcolin A, Nosè F, Cappellari L et al (2007) Heterogeneity of the Departments of Mental Health in the Veneto Region ten years after the National Plan 1994–1996 for Mental Health. Which implication for clinical practice? Findings from the PICOS Project [Article in Italian]. *Epidemiol Psichiatri Soc* 16:59–70
- Lelliott P (2006) Acute inpatient psychiatry in England: an old problem and a new priority. *Epidemiol Psichiatri Soc* 15(2):91–4
- Lincoln TM, Wilhelm K, Nestoriuc Y (2007) Effectiveness of psychoeducation for relapse, symptoms, knowledge, adherence and functioning in psychotic disorders: a meta-analysis. *Schizophr Res* 96:232–245
- Lora A, Cosentino U, Gandini A, Zocchetti C (2007) Which community care for patients with schizophrenic disorders? Packages of care provided by Departments of Mental Health in Lombardy (Italy). *Epidemiol Psichiatri Soc* 16:330–338
- Magliano L, Guarneri M, Fiorillo A, Marasco C, Malangone C, Maj M (2001) A multicenter study of patients’ relatives’ beliefs about schizophrenia. *Psychiatric Serv* 52:1528–1530
- Magliano L, Fiorillo A, Guarneri M, Marasco C, De Rosa C, Malangone C et al (2004) Prescription of psychotropic drugs to patients with schizophrenia: an Italian national survey. *Eur J Clin Pharmacol* 60:513–522
- Magliano L, Fiorillo A, De Rosa C, Malangone C, Maj M, the National Mental Health Project Working Group (2005) Family burden in long-term diseases: a comparative study in schizophrenia vs. physical disorders. *Soc Sci Med* 61:313–322
- Magliano L, Fiorillo A, Malangone C, De Rosa C, Maj M, Group Family Intervention Working (2006) Implementation of family psychoeducational interventions for schizophrenia in mental health services: preliminary results from a multicentre Italian study. *Psychiatric Serv* 57:266–269
- Magliano L, Fiorillo A, Malangone C, De Rosa C, Maj M, the National Mental Health Project Working Group (2006) Social network in long-term diseases: a comparative study in relatives of persons with schizophrenia and physical illnesses vs. a sample from the general population. *Soc Sci Med* 62:1392–1402

36. Mauri MC, Regispani F, Beraldo S, Volonteri LS, Ferrari VM, Fiorentini A et al (2005) Patterns of clinical use of antipsychotics in hospitalized psychiatric patients. *Prog Neuropsychopharmacol Biol Psychiatry* 29:957-963
37. Morosini P, Magliano L, Brambilla L, Ugolini S, Pioli R (2000) Development, reliability and acceptability of a new version of the DSM-IV Social and Occupational Functioning Assessment Scale (SOFAS) to assess routine social functioning. *Acta Psychiatr Scand* 101:323-329
38. Piccinelli M, Politi P, Barale F (2002) Focus on psychiatry in Italy. *Br J Psychiatry* 181:538-544
39. Preti A, Miotto P, De Coppi M (2002) Deaths by unintentional illicit drug overdose in Italy, 1984-2000. *Drug Alcohol Depend* 66:275-282
40. Rittmannsberger H, Meise U, Schauflinger K, Horvath E, Donat H, Hinterhuber H (1999) Polypharmacy in psychiatric treatment. Patterns of psychotropic drug use in Austrian psychiatric clinic. *Prog Neuropsychopharmacol Biol Psychiatry* 26:547-551
41. Rojo JE, Ros S, Aguera L, de la Gandara J, de Pedro JM (2005) Combined antidepressants: clinical experience. *Acta Psychiatr Scand* 112(s. 428):25-31
42. Ruggeri M, Leese M, Slade M, Bonizzato P, Fontecedro L, Tansella M (2004) Demographic, clinical, social and service variables associated with higher needs for care in community psychiatric service patients. The South Verona Outcome Project 8. *Soc Psychiatry Psychiatr Epidemiol* 39:60-68
43. Ruud T, Lindefors N, Lindhardt A (2006) Current issues in Scandinavian acute psychiatric wards. *Epidemiol Psychiatr Soc* 15(2):99-103
44. Salize HJ, Rössler W, Becker T (2007) Mental health care in Germany: current state and trends. *Eur Arch Psychiatry Clin Neurosci* 257:92-103
45. Schneider SE, Ross IM (1996) Ultra-short hospitalizations for severely mentally ill patients. *Psychiatr Serv* 47:137-138
46. Slade M, Phelan M, Thornicroft G, Parkman S (1996) The Camberwell Assessment of Need (CAN): comparison of assessments by staff and patients of the needs of the severely mentally ill. *Soc Psychiatry Psychiatr Epidemiol* 31(3-4):109-113
47. The Sainsbury Centre for Mental Health (2002) The search for acute solutions. A project to improve and evaluate acute mental health inpatient care. The Sainsbury Centre for Mental Health Publishing, London
48. Thornicroft G, Tansella M (2004) Components of a modern mental health service: a pragmatic balance of community and hospital care: overview of systematic evidence. *Br J Psychiatry* 185:283-290
49. Tomasi R, de Girolamo G, Santone G, Picardi A, Micciolo R, Semisa D et al (2006) The prescription of psychotropic drugs in psychiatric residential facilities: a national survey in Italy. *Acta Psychiatr Scand* 113:212-223
50. Trauer T, Callaly T, Hantz P (1999) The measurement of improvement during hospitalization for acute psychiatric illness. *Aust N Z J Psychiatry* 33:379-384
51. Verdoux H (2007) The current state of adult mental health care in France. *Eur Arch Psychiatry Clin Neurosci* 257:64-70
52. West JC, Wilk JE, Olfson M, Rae DS, Marcus S, Narrow WE et al (2005) Patterns and quality of treatment for patients with schizophrenia in routine psychiatric practice. *Psychiatric Serv* 56:283-291
53. Wheeler A, Humberstone V, Robinson G (2006) Trends in antipsychotic prescribing in schizophrenia in Auckland. *Australas Psychiatry* 14:169-174
54. World Health Organization (1992) Tenth revision of the international classification of diseases and related health problems (ICD-10). WHO Press, Geneva