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ORIGINAL PAPER

## Impact of Psychiatrists' Qualifications on the Rate of Compulsory Admissions

Ariel Eytan · Anne Chatton · Edith Safran · Yasser Khazaal

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**Abstract** Despite efforts to reduce coercion in psychiatry, involuntary hospitalizations remain frequent, representing more than half of all admissions in some European regions. Since October 2006, only certified psychiatrists are authorized to require a compulsory admission to our facility, while before all physicians were, including residents. The aim of the present study is to assess the impact of this change of procedure on the proportion compulsory admissions. All medical records of patients admitted respectively 4 months before and 4 month after the implementation of the procedure were retrospectively analyzed. This search retrieved a total of 2,227 hospitalizations for 1,584 patients. The overall proportions of compulsory and voluntary admissions were 63.9 % and 36.1 % respectively. The average length of stay was 32 days ( $SD \pm 64.4$ ). During the study period, 25 % of patients experienced two hospitalizations or more. The most frequent patients' diagnoses were affective disorders (30 %), psychotic disorders (18.4 %) and substance abuse disorders (15.7 %). Compared with the period before October 2006, patients hospitalized from October 2006 up were less likely to be hospitalized on a compulsory basis ( $OR = 0.745$ , 95 %  $CI: 0.596-0.930$ ). Factors associated with involuntary admission were young age (20 years or less), female gender, a diagnosis of psychotic disorder and being hospitalized for the first time. Our results strongly suggest that limiting the right to require compulsory admissions to fully certified psychiatrists can reduce the rate of compulsory versus voluntary admissions.

**Keywords** Compulsory admission · Psychiatric hospitalization · Restraint · Coercion

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A. Eytan (✉)  
Division of Prison Psychiatry, Department of Mental Health and Psychiatry,  
University Hospitals of Geneva, 2 Chemin du Petit-Bel-Air, 1225, Geneva, Switzerland  
e-mail: Ariel.Eytan@hcuge.ch

A. Chatton · Y. Khazaal  
Division of Addictology, University Hospitals of Geneva, Geneva, Switzerland

E. Safran  
Health-Economic Unit, University Hospitals of Geneva, Geneva, Switzerland

## Introduction

Over the past few decades, a profound shift of ethical values occurred in medicine and psychiatry. Medical paternalism, which could allow for justification of involuntary hospitalizations in the name of the patient's or other people's best interests, became obsolete. Modern society values individual freedom, personal choice and informed consent for medical procedures. The principle of autonomy now holds centre stage, while the pre-eminence of beneficence eroded [1]. Therefore, legislation strongly restricts measures that endanger personal autonomy, such as compulsory admission to a psychiatric hospital or other coercive measures [2]. While most western countries make efforts to reduce involuntary hospitalizations and treatments in psychiatry, these issues remain sensitive and understudied [3].

Rates of voluntary versus compulsory admissions are known to vary greatly from one country to another, even for countries situated in a same geopolitical region [4], but also between different locations in the same country [5]. Reasons for these variations are incompletely understood. Until recently, explanatory models took into account almost exclusively clinical and socio-demographic patient characteristics [6]. According to some studies, ethnic minority patients appear to be at higher risk of compulsory admission [7]. In the Netherlands, this association was mediated through increased rates of psychosis among hospitalized migrants [8] and illness-related expression [9]. Having a diagnosis of psychotic disorder is a risk factor for compulsory admission [10]. Among patients with schizophrenic disorders, impaired emotion perception and lesser insight predicted compulsory admission in an Italian study [11]. Also for schizophrenic disorders, socioeconomic problems and poor relationships with family members were associated with compulsory admission in Japan [12].

However, patients' characteristics are not the sole determinants of compulsory admissions in psychiatry. Differences both in legal frameworks or procedures and in the organization of health services represent potentially important contributing explanatory factors [13]. The development of community-care networks involving a partnership between the local police, social and healthcare services has been shown to reduce the ratio of compulsory versus voluntary admissions in the Netherlands [14]. Two forms of advance agreement for people with severe mental illness, namely joint crisis plans in England [15] and mental health advance directives in Switzerland [16, 17], also seem to decrease compulsory admissions.

In European countries, compulsory admissions range between 3 and 50 % of all hospitalizations in psychiatry [6]. Regarding Switzerland, ranges between 20 % and more than 50 % have been reported. For the Canton of Zurich, a quota of 24.8 % was observed in 2007 [6]. In the Geneva area, the proportion of compulsory admissions has been strikingly high for a long time, with figures above 60 % since the end of the eighties. However, the global incidence of hospitalizations is comparable to other Swiss districts and European countries. Several explanations for these elevated rates of compulsory admissions were proposed, such as specificities of the legal framework and socioeconomic factors. It is probable that the rapid development of outpatient services associated with a drastic reduction of the number of inpatient beds played a determinant role, most voluntary patients being addressed to outpatient crisis facilities [18].

In order to protect patients more efficiently against possible unnecessary compulsory admissions, a new procedure was implemented on October 1st 2006. Since this date, only certified psychiatrists are authorized to require a compulsory admission in psychiatry, while before all physicians were, including residents in psychiatry. The aim of the present study is to assess the impact of this new procedure.

## Methods

### Context

Geneva University Hospitals is a large tertiary medical center, and one of the five university hospitals in Switzerland. The facility has more than 2000 hospital beds, and offers acute, rehabilitation and psychiatric care. There are approximately 300 hospital beds for the department of psychiatry. In the years 00', there were approximately 4,000 psychiatric hospitalizations per year at our facility. The study focuses on the 4 months before and respectively after the first of October 2006, in order to examine a substantial number of hospitalizations. There was no other important structural, clinical or organizational change during this period.

### Study Design

All medical records of patients admitted during this period were identified and retrospectively analyzed. This search retrieved a total of 2,227 hospitalizations for 1,584 patients.

### Statistical Analysis

Data were analyzed using SPSS (version 18.0, IBM, Chicago, USA). Univariate statistics like proportions, median, mean values and standard deviations were used to describe general characteristics of both hospitalizations and patients. To analyze the impact of the new procedure on the number of compulsory hospitalizations, we used a binary logistic regression based on the aggregated data with the type of hospitalization (compulsory vs. voluntary) as the dependent variable and the period of hospitalization (before October 2006 vs. after) as the predictor, controlling for age, gender, main psychiatric diagnosis related to the hospitalization and number of hospitalizations (only one hospitalization vs. more than one). Following a wide spread in age, preliminary graphical analyses showed that this latter could be categorized as follows: <20 years, between 20 and 35, between 36 and 60, >60 years. Goodness of fit of the model was assessed by the Hosmer–Lemeshow test which tests whether or not the observed event rates match expected event rates in subgroups of the model population.

### Ethics

The study was approved by the local ethics committee.

## Results

### Characteristics of Hospitalizations

The computerized data search retrieved a total of 2,227 hospitalizations for 1,584 patients. Characteristics of hospitalizations are summarized in Table 1. During the whole study period, the overall proportions of compulsory and voluntary admissions were 63.9 and 36.1 % respectively. The average length of stay was 32 days (SD ± 64.4).

**Table 1** Characteristics of hospitalizations ( $N = 2'227$ )

	Before October 1st. 2006 ( $n_1 = 1,162$ )	After October 1st 2006 ( $n_2 = 1'065$ )	Total ( $n = 2,227$ )
Type of hospitalization, $n$ (%)			
Compulsory admission	780 (67.1)	642 (60.3)	1'422 (63.9)
Voluntary admission	382 (32.9)	423 (39.7)	805 (36.1)
Diagnostic category according to the ICD-10, $n$ (%)			
Affective disorders	300 (25.8)	287 (26.9)	587 (26.4)
Schizophrenia, schizotypal and delusional disorders	238 (20.5)	186 (17.5)	424 (19.0)
Mental and behavioral disorders due to psychoactive substance use	214 (18.4)	175 (16.4)	389 (17.5)
Organic, including symptomatic, mental disorders	41 (3.5)	37 (3.5)	78 (3.5)
Neurotic, stress-related and somatoform disorders	53 (4.6)	49 (4.6)	102 (4.6)
Disorders of adult personality and behaviour	55 (4.7)	56 (5.3)	111 (5)
Other disorder/undiagnosed	261 (22.5)	275 (25.8)	(24.4)
Mean number of hospitalizations per diagnostic category (SD)			
Affective disorders	1.5 (0.9)	1.8 (1.2)	1.6 (1.1)
Schizophrenia, schizotypal and delusional disorders	2.1 (2.4)	2.1 (2.0)	2.1 (2.2)
Mental and behavioral disorders due to psychoactive substance use	2.3 (1.6)	2.1 (1.4)	2.2 (1.5)
Organic, including symptomatic, mental disorders	1.4 (0.7)	1.6 (0.9)	1.5 (0.8)
Neurotic, stress-related and somatoform disorders	1.4 (1.2)	1.7 (1.5)	1.6 (1.3)
Disorders of adult personality and behaviour	5.7 (5.8)	3.6 (3.7)	4.6 (4.9)
Other disorder/undiagnosed	4.0 (6.2)	1.8 (1.5)	2.8 (4.6)
Mean length of stay per hospitalization, in days (SD)	33.8 (68.5)	30.3 (59.6)	32.1 (64.4)

### Characteristics of Patients

The patients' socio-demographic and clinical characteristics are presented in Table 2. The gender distribution of the sample was almost even (50.9 % female and 49.1 % male). The ages ranged from 14 to 100 years with a median age of 44.5. During the study period, 25 % of patients experienced at least one re-hospitalization. Regarding mental disorders, the category of affective disorders was the most frequent, being diagnosed in approximately 30 % of subjects followed by psychotic disorders (18.4 %), substance abuse disorders (15.7 %), neurotic, stress-related and somatoform disorders (5.3 %), organic, including symptomatic, mental disorders (3.8 %), personality disorders (3.5 %), while 23.5 % of patients were discharged from hospital with another diagnosis or without a precise one.

**Table 2** Sociodemographic and clinical characteristics of patients ( $N = 1,584$ )

Median age (min, max)	44.5 (14, 100)
Gender, $n$ (%)	
Female	807 (50.9)
Male	777 (49.1)
Median length of stay, days (min, max)	22 (11,394)
Number of hospitalizations during the period of the study, $n$ (%)	
Only one	1,188 (75.0)
More than one	396 (25.0)

### Correlates of Status of Hospitalizations

The logistic regression model examining the correlates of status of hospitalizations is presented in Table 3. Compared with the period before October 2006, patients hospitalized from October 2006 up were less likely to be hospitalized on a compulsory basis

**Table 3** Factors associated with type of hospitalization (voluntary admission vs. compulsory admission)

Variable	Sig.	Adjusted OR	95 % C.I. for OR	
			Lower	Upper
Hospitalization period				
Before October 2006	Ref.	1	–	–
From October 2006 up	0.009	0.745	0.596	0.930
Age	<0.0005			
<20 years	Ref.	1	–	–
Between 20 and 35 years	0.017	0.226	0.067	0.765
Between 36 and 60 years	0.004	0.166	0.049	0.557
>60 years	0.001	0.120	0.035	0.409
Sex				
Female	Ref.	1	–	–
Male	0.001	0.674	0.539	0.843
Diagnosis	<0.0005			
Affective disorders	Ref.	1	–	–
Schizophrenia, schizotypal and delusional disorders	<0.0005	2.450	1.683	3.565
Mental and behavioral disorders due to psychoactive substance use	0.001	0.576	0.412	0.804
Organic, including symptomatic, mental disorders	0.009	2.407	1.241	4.666
Neurotic, stress-related and somatoform disorders	0.7	0.908	0.550	1.501
Disorders of adult personality and behaviour	0.9	0.977	0.524	1.822
Other disorder/undiagnosed	0.08	0.762	0.562	1.034
Number of hospitalizations				
Only one	Ref.	1	–	–
More than one	0.001	0.658	0.511	0.847
Constant	<0.0005	5.234	–	–

(OR = 0.745, 95 % CI: 0.596–0.930). Compared to teenagers and young adults, patients aged between 20 and 35 years, between 36 and 60 years old and above 60 years old respectively were less likely to be hospitalized under compulsory admissions than under voluntary admissions [OR = 0.226, 0.166, 0.112 and CI  $\in$  (0.067–0.765), (0.049–0.557), (0.035–0.409) respectively].

Compared to women, men were less likely to be hospitalized under compulsory admissions than under voluntary admissions [OR = 0.674 and CI  $\in$  (0.539–0.843)].

Compared to people with affective disorders, patients with schizophrenia and patients diagnosed with organic, including symptomatic, mental disorders were more likely to be hospitalized under compulsory admissions than under voluntary admissions [OR = 2.450, 2.407 and CI  $\in$  (1.683–3.565), (1.241–4.666) respectively] while people diagnosed with mental and behavioral disorders were less likely to be hospitalized under compulsory admissions than under voluntary admissions [OR = 0.576 and CI  $\in$  (0.412; 0.804)]. Patients diagnosed with neurotic disorders, personality disorders and other disorders or undiagnosed were less likely to be hospitalized under compulsory admission than under voluntary admissions but the difference was not statistically significant.

Compared to patients being hospitalized only once, patients experiencing more than one hospitalization were less likely to be hospitalized under compulsory admissions than under voluntary admissions [OR = 0.658 and CI  $\in$  (0.511; 0.847)].

## Discussion

For the present study, a total of 2,227 hospitalizations corresponding to 1,584 patients were retrospectively examined on the basis of the medical records. The implementation of a new medico-legal procedure, limiting the possibility to require compulsory admissions to certified psychiatrists, had a significant impact. The procedure aimed to decrease the proportion of involuntary hospitalizations and this is indeed what was observed. The results is possibly explained by a limited knowledge of the residents in psychiatry on commitment statues as suggested by a previous survey conducted in a sample of residents in psychiatry in the US [19].

Independently from the period, before or after the new procedure, the risk of being hospitalized on a compulsory basis was associated with certain patients' characteristics. Being a young adult and having a diagnosis of psychotic disorder were among them, in accordance with other observations [10, 20]. The associations between compulsory admissions, female gender and being hospitalized only once are more surprising. Factors such as a higher proportion of nonresident immigrants in patients hospitalized only once, gender differences in psychopathology and psychiatrists' attitudes toward hospitalization could all play a role and these findings deserve further investigation.

Compared with data from the literature, the overall proportion of compulsory admissions was high (63.9 %) but in accordance with previous data from the Geneva district. A quarter of the patients were hospitalized more than once during the study period, which is above what was described in other facilities. For example, rehospitalization rate was 13 % within 6 month of discharge at a US Sate hospital [21], and 14 % over a 13-months period at a military care hospital [22].

The study was conducted on a retrospective basis and other factors than the implementation of the new procedure in October 2006 could have contributed to the decrease of the rate of compulsory admissions. There was however no other change in clinical, legal or organizational level during the study period. Furthermore, changes of commitment

practices persisted over time, as attested by the proportion of compulsory admissions for the years surrounding 2006. The proportion of compulsory admissions increased from 55 % in 2001 to 69 % in 2005. This proportion decreased to 48 % in 2007 and remained below 50 % thereafter. Other factors, such as modification in clinical attitudes may contribute to the persistent decrease of the rate of compulsory admission after the study period.

Our results strongly suggest that limiting the right to require compulsory admissions to certified psychiatrists can reduce the rate of compulsory admissions. Similar law modifications should be then encouraged in other countries. It remains however important to explore other clinical, legal and services related strategies in order to reduce the rate of compulsory admissions and their related burden.

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## Author Biographies

**Ariel Eytan, MD** is a specialist in psychiatry and psychotherapy. He is the head of the Division of prison psychiatry at the University Hospitals of Geneva, Switzerland.

**Anne Chatton, MA** is a researcher involved in several publications in psychiatry and addiction. She has a master's degree in econometrics, a post-graduate diploma in statistics and a master of advanced studies in public health.

**Edith Safran, MD** is a physician specialized in health economics and hospital statistics, at the Direction de l'analyse medico-économique at the University Hospitals of Geneva.

**Yasser Khazaal, MD** is a specialist in psychiatry and psychotherapy in the Division of Addictology at the University Hospitals of Geneva, Switzerland. He has more than 70 scientific publications, mainly on cognitive and behavior therapy and pharmacotherapy as well as internet-related behaviors.