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# Unplanned admissions to inpatient psychiatric treatment and services received prior to admission

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## ABSTRACT

**Background:** Inpatient bed numbers are continually being reduced but are not being replaced with adequate alternatives in primary health care. There is a considerable risk that eventually all inpatient treatment will be unplanned, because planned or elective treatments are superseded by urgent needs when capacity is reduced.

**Aims of the study:** To estimate the rate of unplanned admissions to inpatient psychiatric treatment facilities in Norway and analyse the difference between patients with unplanned and planned admissions regarding services received during the three months prior to admission as well as clinical, demographical and socioeconomic characteristics of patients.

**Method:** Unplanned admissions were defined as all urgent and involuntary admissions including unplanned readmissions. National mapping of inpatients was conducted in all inpatient treatment psychiatric wards in Norway on a specific date in 2012. Binary logit regressions were performed to compare patients who had unplanned admissions with patients who had planned admissions (i.e., the analyses were conditioned on admission to inpatient psychiatric treatment).

**Results:** Patients with high risk of unplanned admission are suffering from severe mental illness, have low functional level indicated by the need for housing services, high risk for suicide attempt and of being violent, low education and born outside Norway.

**Conclusion:** Specialist mental health services should support the local services in their efforts to prevent unplanned admissions by providing counselling, short inpatient stays, outpatient treatment and ambulatory outpatient psychiatry services.

**Implications for health policies:** This paper suggests the rate of unplanned admissions as a quality indicator and considers the introduction of economic incentives in the income models at both service levels.

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## 1. Introduction

Modern mental health services try to ensure that people with severe mental illness spend the minimum amount of time in hospital because unnecessary hospital care is wasteful, stigmatizing and disliked by patients [1]. The main arguments for shifting care from institutions to community care are improved access to services, enabling people with mental illness to maintain family relationships, friendships and employment while receiving treatment, and reduced segregation and stigma [2]. However, the broad picture

over the past two decades shows a progressive reduction in hospital beds, along with imbalanced, inadequate and slow investment in community services [3]. As in most industrialized countries, in recent decades, mental health services for adults in Norway have been characterized by deinstitutionalization and redistribution of patients from long-term care to short-duration active treatment [4].

The locus of care is changing from psychiatric hospitals to the community, and this is a contentious component of mental health care policy in many countries [5]. Although both community and hospital services are necessary, the relative mixture of the service components needed depends on specific local circumstances, and most care should be provided at or near people's homes [6]. In line with this, the World Health Organization (WHO) recommends that countries should limit the number of mental hospitals, build community mental health services, develop mental health services

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in general hospitals, integrate mental health services into primary health care, build informal community mental health services and promote self-care [7].

Reducing the number of beds in inpatient treatment without providing adequate local alternatives may result in much unplanned or acute treatment because planned or elective treatments are superseded by urgent needs. Unplanned admissions are much studied in somatic patients but receive less research attention where patients suffer from mental illnesses. One study found that people with multiple illnesses are much more likely to be admitted to hospital unexpectedly, and mental health issues and economic hardship further increase the likelihood [8].

Readmission rates are increasingly used as a performance indicator [9], even though the validity of using the rate of readmission as an outcome measure has been questioned [10–13]. In somatic services, it has been suggested that readmission rates provide an incomplete picture of unplanned care and it has been suggested that payers and policy makers should broaden their focus from readmission measures to unplanned care composite measures [14]. They suggest that a composite measure of unplanned care should include readmissions, observation stays and emergency department visits [14].

The first objective of this study is to estimate the prevalence of unplanned admissions and analyse the difference between patients with unplanned and planned admissions regarding services received during the three months prior to admission. The second objective is to identify the clinical, demographical and socioeconomic characteristics of patients with unplanned treatment compared to patients with planned treatment. We assume that elective or planned treatment is more effective than treatment provided without a treatment plan and that both patients and clinicians prefer that the treatment follows a plan.

Unplanned admissions were defined as the sum of all urgent or involuntary admissions. This also includes unplanned readmissions because these are assumed to be urgent admissions.

Based on the findings, we discuss whether the rate of unplanned admissions is a suitable indicator of the quality of the collaboration between primary and secondary services, rather than a performance indicator for specialist services only. This study also contributes to the literature on deinstitutionalisation and community mental health care by studying the link between use of community services and type of hospital admission.

## 2. Methods

### 2.1. Setting

Norway is a country with 5.2 million inhabitants, a stable economy and universal health care. In the Norwegian democratic welfare state, public authorities are responsible for providing and financing health services. The health service in Norway is funded through general income tax and through the mandatory National Insurance Scheme, and the quality of the services is high [15].

The responsibility for specialist care lies with the state (administered by four Regional Health Authorities), and the municipalities are responsible for primary care. Mental health services in Norway are provided at two levels: the municipality level (primary health care) and the specialist level. Municipal responsibility includes prevention, diagnosis and assessment of functional ability, early intervention and rehabilitation, follow-up, psychosocial support and counselling, and referral to specialist services. Norway is currently divided into 428 municipalities; over half of these have fewer than 5000 inhabitants, and nearly 40% have fewer than 3000 inhabitants. There is an ongoing political debate about mergers of

municipalities into larger units to strengthen their economic potential and to improve the provision of services.

At the specialist level, there are district psychiatric centres (DPCs) and hospitals. The 75 DPCs around the country are responsible for providing specialized mental health services in the form of outpatient, ambulatory or inpatient treatment. The DPCs assist the municipal mental health services with counselling and ensure continuity in specialist services. On average, each DPC covers more than five municipalities. The hospitals are responsible for specialist health services that can only be performed at hospital level, such as secure wards, closed emergency departments and some other limited functions.

In total, specialist mental health services in Norway employ about 21,000 full-time equivalents, while mental health services in the municipalities employ about 14,000 (i.e., about 7 person-years per thousand inhabitants in 2015).

The long-term policy has been to shift activity from hospitals to DPCs, and from inpatient treatment to outpatient and ambulatory activity [16]. In 1998, the Norwegian parliament adopted a 10-year National Programme for Mental Health, calling for major investment, expansion and reorganization of the services. There was a 39% reduction in the number of inpatient psychiatric beds in Norway between 1998 and 2015. Of the 3664 beds in adult mental health services in 2015, 54% were in hospitals, 42% were in DPCs, and 4% were in nursing homes and other institutions. The number of outpatient consultations per inhabitant has increased by 167% from 1998 to 2015, and in 2015, 86% of consultations occurred at DPCs with the rest at hospitals [17].

### 2.2. Design

A comprehensive national mapping of patients was conducted in all psychiatric wards and departments providing inpatient treatment on a specific date in 2012. Each patient's clinician was responsible for completing the form. This study comprised full mapping conducted on behalf of the national health authorities. Written consent was obtained from the patients, but the clinician completed the forms for all patients, including those who did not give their consent. In the latter case, no personal identification number was collected. The data were not combined with any data from registers in the current study, so all mapping forms were included. The study was approved by the Regional Committee for Medical and Health Research Ethics (2012/848/REK midt).

### 2.3. Data collection

The targeted participant group comprised all inpatients on a given day (20 November 2012). All mental health services in public and private sectors were invited to participate. Several months prior to the mapping, the service managers and clinicians received information that described the project and the data collection procedures. Because of information technology firewall restrictions at the institutions and clinics, it was not possible to collect the data electronically, so all of the units received printed forms according to the number of patients registered at the same time in the previous year plus 20% in case the number of patients had increased. The clinicians completed one form per patient. Excluding those who were expected to react negatively, patients were invited to participate in the completion of the form, but the clinician rather than the patient answered the questions during the mapping. Over half of the patients (55%) participated in the completion of their forms. The completed forms were returned by registered mail to a company that scanned all of the forms and performed coarse quality control. Further quality control of the data files was performed by the project team.

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