

## Factors associated with disallowance of compulsory mental healthcare referrals

Fuglseth NLD, Gjestad R, Mellesdal L, Hunnskaar S, Oedegaard KJ, Johansen IH. Factors associated with disallowance of compulsory mental healthcare referrals.

**Objective:** Norwegian studies report that a substantial amount of referrals for compulsory mental health care are disallowed at specialist assessment, at a rate that varies with referring agent. Knowledge on factors associated with disallowance could improve the practice of compulsory mental health care. This study aims to examine such factors, placing particular emphasis on the impact of referring agents.

**Method:** This study utilized data from the prospective, longitudinal cohort study 'Suicidality in Psychiatric Emergency Admissions' conducted at a Norwegian psychiatric emergency unit which served approximately 400 000 inhabitants. Data on referral, admission and patient characteristics were retrieved on compulsory admissions conducted between 1 May 2005 and 30 April 2008. Bivariate and logistic regression analyses and structural multilevel modelling were performed.

**Results:** Among 2813 compulsory admissions, 764 were disallowed. Low competence in the referring agent, high GAF S score, observed alcohol or drug intoxication, reported suicide risk, and the presence of neurotic, stress-related and somatoform disorders, personality disorders and other non-specified diagnoses were associated with above average disallowance frequency. Non-Norwegian ethnicity and schizophrenia spectrum disorders were associated with below average disallowance rates.

**Conclusion:** Among several factors associated with disallowance, low symptom load was the strongest, whilst referring agent competence modestly affected disallowance rate.

**N. L. D. Fuglseth<sup>1</sup>, R. Gjestad<sup>2</sup>,  
L. Mellesdal<sup>2</sup>, S. Hunnskaar<sup>1</sup>,  
K. J. Oedegaard<sup>2,3</sup>,  
I. H. Johansen<sup>1</sup>**

<sup>1</sup>Uni Research Health, National Centre for Emergency Primary Health Care, Bergen, Norway, <sup>2</sup>Division of Psychiatry, Haukeland University Hospital, Bergen, Norway and <sup>3</sup>Department of Clinical Medicine and Global mental health research group, GMHRG, Centre for International Health, Faculty of Medicine and Dentistry, University of Bergen, Bergen, Norway

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Key words: psychiatry; emergencies; referral and consultation; commitment of mentally ill; delivery of health care

Nikolai Lamin Darboe Fuglseth, Uni Research Health, National Centre for Emergency Primary Health Care, NklmPostbox 7810 5020, Bergen 5020, Norway.  
E-mail: nfu056@uni.no

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### Significant outcomes

- Patients with a relatively low symptom load appeared to be at an increased likelihood of having their referrals for compulsory mental health care disallowed.
- Reported suicide risk and some less severe diagnostic groups were associated with above average disallowance rates.
- The likelihood of disallowance seemed more dependent on patient and admission factors than on referring agent competence.

### Limitations

- Time lapse between referral and the specialist's assessment probably affected the outcome of several compulsory referrals, but was not registered.
- Referring agent competence was specified by a variable with uncertain validity.

### Introduction

Compulsory mental health care has a long tradition in psychiatry. It is practised under the presumed ethical justification that the negative consequences of compulsory mental health care on autonomy, integrity and comfort are outweighed by the benefits of treatment or protection (1). There is considerable interdisciplinary agreement that under certain conditions involuntary measures are justifiable (2). However, there is yet no international consensus on which conditions to apply, in spite of attempts to standardize the practice (3). The subject remains controversial.

In several countries, compulsory mental health care may be established if a severely mentally ill person is at risk to himself or others or has a pressing need of treatment (4). In Norway, severely mentally ill patients may be placed under such care when voluntary treatment has either failed or been deemed futile. Two medical examinations are required. Both must conclude that the patient is (i) a danger to themselves and/or (ii) a danger to others and/or (iii) in a condition that is likely to worsen substantially, or their chance of recovery is reduced in the absence of treatment (5). The first examination often takes place in primary health care and is performed by a physician unaffiliated to the admitting institution (6). If the physician finds the requirements met, the patient is referred and admitted, by force if necessary. The second medical examination takes place at the admitting institution. Within 24 h after admission, a psychiatrist or an authorized specialist in clinical psychology, hereafter referred to as 'specialist', must decide whether to establish compulsory mental health care or not. This decision is based on the findings from the examination, in addition to information from observations in the ward, findings from previous examinations and other available information. If the specialist decides not to establish it, the patient is admitted voluntarily or discharged (Norwegian *underkjenning*). Hereafter, such outcome will be referred to as 'disallowed referral' for compulsory mental health care or as 'disallowance'.

Two Norwegian studies have shown that 31–45% of referrals for compulsory mental health care are disallowed (6, 7). These rates are considerably lower for referrals from the specialist psychiatric health service compared to, for example, emergency primary healthcare clinics (6, 8). Similarly, mentally ill individuals, who on decision of ambulance personnel were involuntarily transported to an Australian mental health facility for psychiatric assessment and treatment, had three times lower

odds of involuntary admission than patients detained by medical practitioners (9). The likelihood of disallowance thus seems associated with features of the referring agent, among which average professional expertise appears to be of some importance.

Although some conditions result in disallowance because they have a natural course of quick clinical improvement, reports of high disallowance rates that vary with referring agent raise suspicion that not all disallowed referrals are warranted. Knowledge of factors associated with disallowance might therefore increase assessment proficiency.

### Aims of the study

This study aimed to examine factors associated with disallowance of referrals for compulsory mental health care. A particular focus was on discovering relations between disallowance and referring agents.

### Material and methods

#### Study population

A subset of data from the prospective, longitudinal cohort study 'Suicidality in Psychiatric Emergency Admissions' was retrieved for use in this study. 'Suicidality in Psychiatric Emergency Admissions' was conducted at a 19-bed psychiatric emergency unit (6). The emergency unit was part of the Psychiatric Department of Haukeland University Hospital, a state-governed hospital in Bergen, Norway, with a catchment area of approximately 400 000 inhabitants. The subset included data on admissions for compulsory mental health care that were conducted between 1 May 2005 and 30 April 2008. Admissions of patients who were sentenced to civil commitment or transferred from other wards or institutions were excluded since disallowance was not a possible outcome in those cases. In this time period, approximately 95% of all adult patients in the catchment area who were referred for emergency psychiatric admission were received at this psychiatric emergency unit (6). They were assessed and given emergency treatment at the unit before discharge or transfer to other wards for long-term treatment. The remaining 5% were well-known patients who were directly admitted to open wards, without an initial stay at the emergency unit.

#### Measurements

Data on the following variables were retrieved from the complete data set:

- Descriptive patient information and sociodemographic conditions: gender, age and ethnicity.
- Referral and admission: referring agent and legal basis for in-patient stay.
- From assessments made upon admission to the psychiatric emergency unit: «Global Assessment Scale Split version» for symptoms (GAF S), «Global Assessment Scale Split version» for function (GAF F) (10, 11), alcohol or drug intoxication and suicide risk as factor contributing to the admission.
- Diagnoses given upon discharge.

The split version of GAF is derived from the traditional GAF scale and consists of two dimensions, GAF S and GAF F, which reflect subtle differences in clinical impairment (12). The split version is routinely used as initial assessment tool in all psychiatric hospital admissions in the Norwegian mental health service.

All patients were given an enrolment code on their first admission in the registration period. Any subsequent admission was numbered and linked to this enrolment code, which allowed tracing of patients' consecutive admissions.

Diagnoses were given according to the ICD-10 coding system (13). They were aggregated into groups, in accordance with existing ICD-10 groups: mental and behavioural disorders due to psychoactive substance use (F10–F19), schizophrenia, schizotypal and delusional disorders (F20–F29), mood [affective] disorders (F30–F39), neurotic, stress-related and somatoform disorders (F40–F48) and disorders of adult personality and behaviour (F60–F69). The remaining diagnostic groups were clustered into 'other psychiatric diagnoses'.

Up to three diagnoses were given upon discharge: primary, secondary and tertiary. Previous analyses on these data have shown that all of the diagnoses were potentially important to the admission (6). Therefore, diagnoses were dichotomized into 'given' or 'not given', for example 'no mood disorder' or 'mood disorder as primary, secondary or tertiary diagnosis'.

A variable, which represented the assessment competence of the referring agents, was necessary for allowing analysis on the impact of this feature on disallowance likelihood. Therefore, each referring agent was separately scored on three key factors and placed in succession according to their summarized score (Table 1).

Previous knowledge of the patient was chosen as a key factor due to its assumed importance as a factor in assessing referrals for compulsory admission (6, 14). Additionally, the opportunity to ensure follow-up of the patient, for example by observation

Table 1. Referring agents placed in succession according to their expected average competence, based on expected psychiatric expertise, previous knowledge of patient and availability of follow-up

Referring agent	Included services	Psychiatric expertise	Previous knowledge of patient	Follow-up available
Specialist medical and surgical care	Hospital services Prison services	–	–	–
Emergency primary health care		+	–	–
Emergency specialist psychiatric care		++	–	–
Regular general practice		+	++	+
Specialist psychiatric care	Out-patient care In-patient care	++	+	+

– = below average; + = above average; ++ = considerably above average.

when in doubt, could affect the urgency of a final decision and was therefore also included as a key factor. Services that were expected to hold similar properties were merged to form single categories or competence levels, as shown under 'included services' in Table 1. Emergency specialist psychiatric care was held apart from other specialist psychiatric services because, although holding the same level of expertise, clinicians in this service would normally have no or scarce previous knowledge of the patient and no opportunity for follow-up. Emergency primary health care was in many cases staffed by general practitioners, and Table 1 thus reflects a similar level of expertise in these two agents. However, the circumstances in the two services differ substantially as previous knowledge of patient and follow-up availability is absent or scarce in emergency primary health care, whilst general practitioners mostly know and are obliged to follow up their enlisted patients. For the analyses, the resulting table was applied as a scale variable, hereafter referred to as 'referring agent competence' or simply 'competence'.

#### Statistical analyses

IBM SPSS Statistics, version 22 (IBM Corp., Armonk, NY, USA), was used for descriptive statistics, including mean, standard deviation, frequencies and cross-tabulation analyses with Pearson's chi-squared test. Mplus 7.2 (Muthén & Muthén, Los Angeles, CA, USA) was used for structural multilevel modelling, with logistic regression to estimate associations between the included predictors and the dichotomous outcome variable, disallowance. Admission-specific predictors were analysed as level 1 variables, whilst level 2 included static patient factors. Hence, at level 2,

patient-dependent mean values for disallowance were used in the statistical analyses. Competence and GAF F were expected to be predicted by other variables and were therefore modelled as intermediating variables. The standardized and unstandardized regression coefficients were reported as well as odds ratio values for the dichotomous disallowance variable. Robust maximum likelihood estimator was used to adjust for deviations from normal distributions.

By a linear regression function, GAF F was regressed on GAF S, admission count, suicide risk and diagnosis variables. The GAF variables were originally continuous variables ranging from 0 to 100. Ahead of the multivariate analyses, the range in these variables was reduced by dividing by 10. Competence level was predicted by GAF F and GAF S, alcohol or drug intoxication, some diagnostic groups and cross-level interactions between gender and GAF scores. The main outcome variable, disallowance, was predicted by competence, GAF S, diagnostic group variables, suicide risk and alcohol or drug intoxication.

Gender-specific interaction terms were tested, such as age, competence, GAF F and GAF S to check whether associations were gender specific. In addition, interaction terms between suicide risk and the diagnostic group variables were estimated to investigate whether the statistical effect of suicide risk differed between diagnostic groups. At level 2, disallowance was predicted by gender and ethnicity. Non-statistical parameter values were removed in a backward stepwise procedure, followed by re-estimation until a model consisting of only statistically significant predictors was obtained.

The project was approved by the Regional Committee for Medical and Health Research Ethics, the Norwegian Social Science Data Services and the Norwegian Directorate of Health.

### Results

In the study period, there were 2889 admissions of patients who were referred for compulsory mental health care, of which 2813 were eligible for disallowance. Of these, 764 (27.2%) were disallowed. Mean age on admission was 41.2 years (range 17–96, SD 16.5). Number of admissions per patient ranged from 1 to 31, with a median value of 1. The mean value of GAF S was 31.8 in non-disallowed admissions (range 3–80, SD 9.8) and 38.0 in admissions that resulted in disallowance (range 5–80, SD 11.4). GAF F had a mean value of 34.6 in non-disallowed admissions (range 3–81, SD 11.0) and 40.1 in admissions that resulted in disallowance (range 1–91, SD 12.2).

The results presented in Table 2 show that disallowance rates differed between groups with regard to ethnicity, competence level, alcohol or drug intoxication, diagnostic group and suicide risk. Suicide risk, clinically apparent alcohol or drug intoxication and several diagnostic groups were associated with higher than average rates of disallowance. Non-Norwegian ethnicity and schizophrenia spectrum disorders, however, were associated with lower than average rates of disallowance. The table showed a reduction in disallowance frequency with each increase in referring agent competence level.

Results from the multilevel analysis, presented in Fig. 1, show that the explained variance for disallowance was 30% on the admission level and 21% on the patient level. Low referring agent competence, high GAF S score, observed alcohol or drug intoxication, reported suicide risk, the presence of neurotic, stress-related and somatoform disorders, personality disorders and other non-specified diagnoses were associated with above average disallowance rate.

Schizophrenia spectrum diagnoses and affective disorders were associated with below average disallowance rate. GAF F, with an explained variance of 37%, exerted no significant direct effect on disallowance rate, whilst a diagnosis of substance use disorders exerted no significant effect at all. The association between suicide risk and disallowance was moderated by the personality disorder variable. Hence, the magnitude of the association between suicide risk and disallowance was weaker in admissions of patients with personality disorders than in admissions of patients without. The average disallowance rate was higher in admissions of male patients than female patients, and higher in admissions of Norwegian than non-Norwegian patients.

Competence acted as an intermediating variable for several other variables on disallowance. Similarly, GAF F was an intermediating variable for several effects on competence. However, the explained variance for competence was a modest 7%, and given its limited total effect on disallowance, each of the mediated effects represented negligible total effects on disallowance rate.

Three cross-level interaction terms were found statistically significant: gender moderated the effect of GAF S on competence and GAF F. In admissions of males, the correlation between GAF S and competence remained unaffected by the moderation. However, in admissions of females, the moderation exerted a positive effect, which resulted in a positive correlation. The gender variable also moderated the effect of GAF F on competence. This

Table 2. Results from descriptive and bivariate analyses, depending on patient and admission factors. Descriptive results in the 'total' column. Results from bivariate analyses on disallowance rate in the two 'disallowance' columns

	Total		Disallowance				P-value
			Yes		No		
	(n = 2813)		(n = 764, 27.2%)		(n = 2049, 72.8%)		
	n	% (†)	n	% (‡)	n	% (‡)	
Sex							0.050
Male	1453	51.8	418	28.7	1036	71.3	
Female	1360	48.2	346	25.5	1013	74.5	
Ethnicity							<0.001
Norwegian	2581	91.8	729	28.2	1852	71.8	
Non-Norwegian	232	8.2	35	15.1	197	84.9	
Suicide risk							<0.001
No known suicide risk	1173	47.5	188	16.0	985	84.0	
Suicide ideations, but no plan	601	24.3	225	37.4	376	62.6	
Suicide plans	325	13.2	154	47.4	171	52.6	
Self-harm	370	15.0	150	40.5	220	59.5	
Alcohol or drug intoxication (n = 2774)*							<0.001
No signs	2188	78.9	526	24.0	1662	76.0	
Possibly influenced by alcohol or drugs	361	13.0	103	28.5	258	71.5	
Apparently influenced by alcohol or drugs	225	8.1	122	54.2	103	45.8	
Competence (n = 2469)*							<0.001
Specialist medical and surgical services (hospital/prison)	328	11.7	108	32.9	220	67.1	
Emergency primary health care	1436	51.0	447	31.1	989	68.9	
Emergency specialist psychiatric care	185	6.6	55	29.7	130	70.3	
Regular general practice	404	14.4	88	21.8	316	78.2	
Specialist psychiatric care (out-/in-patient)	460	16.3	66	14.3	394	85.7	
Diagnostic group							
Mental and behavioural disorders due to psychoactive substance use (F10 – F19)							<0.001
Yes	682	24.2	273	40.0	409	60.0	
No	2131	75.8	491	23.0	1640	77.0	
Schizophrenia, schizotypal and delusional disorders (F20–F29)							<0.001
Yes	1023	36.4	105	10.3	918	89.7	
No	1790	63.6	659	36.8	1131	63.2	
Mood [affective] disorders (F30 – F39)							0.060
Yes	806	28.7	239	29.7	567	70.3	
No	2007	71.3	525	26.2	1482	73.8	
Neurotic, stress-related and somatoform disorders (F40 – F48)							<0.001
Yes	354	12.6	153	43.2	201	56.8	
No	2459	87.4	611	24.8	1848	75.2	
Disorders of adult personality and behaviour (F60 – F69)							<0.001
Yes	380	13.5	151	39.7	229	60.3	
No	2433	86.5	613	25.2	1820	74.8	
Other diagnoses (n = 2798)*							<0.001
Yes	399	14.3	148	37.1	251	62.9	
No	2399	85.7	611	25.5	1788	74.5	

\*Total amount is given for variables with missing data.

†Column percentages.

‡Row percentages.

correlation remained unaffected in admissions of males, but in admissions of females a negative moderating effect was exerted, which yielded an inverse correlation. The analyses uncovered no other interaction terms related to competence.

## Discussion

This study showed that decreased symptom load, as expressed by GAF Symptom, was the strongest predictor of disallowance. Referring agent

competence was a significant, but modest predictor. Other factors that predicted disallowance were suicide risk, alcohol or drug intoxication, personality disorders and neurotic, stress-related and somatoform disorders.

According to the results, there was a substantial association between GAF S score and likelihood of disallowance. Oppositely, the association between GAF F score and disallowance, which was significant according to the bivariate analyses, was non-significant according to the multiple

Level 1: Admissions

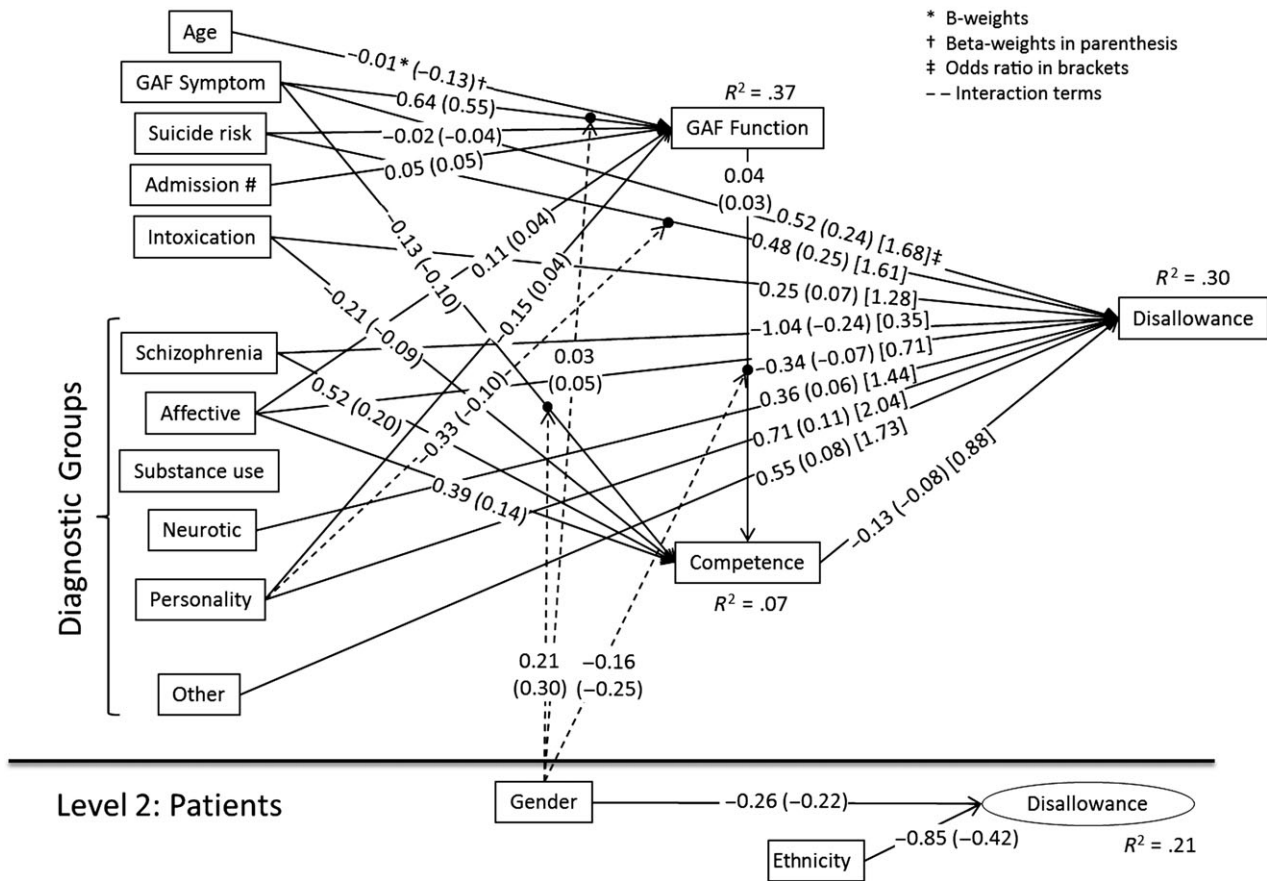


Fig. 1. Results from linear regression analysis showing estimated relations between patient and admission factors and disallowance of compulsory referrals. Includes direct and indirect relationships.

regression analyses. This was in large part due to the similarity between GAF F and GAF S (12), demonstrated in the results by a strong association between these two factors. The apparently inverse correlation between GAF S and disallowance was the most robust relation in the model. Correspondingly, GAF score was one of two significant predictors of a comparable outcome among African American youth (15). Furthermore, the results showed that when patients with diagnoses of neurotic, stress-related and somatoform disorders or personality disorders were admitted, the likelihood of disallowance was elevated. These diagnostic groups are associated with lower mean symptom load than, for example, schizophrenia disorders, bipolar disorders and severe depression. In summary, several associations served to indicate that compulsory referrals of individuals with relatively low symptom load were at increased likelihood of being disallowed. This could imply that more emphasis should be put on symptom load when

considering compulsory referrals of mentally ill patients.

According to this study, the lower the competence level of the referring agent, the higher the likelihood of disallowance. Accordingly, referring agents that were given a low score on the key factors ‘knowledge of patients’ and ‘follow-up availability’ had the highest rates of disallowance. This provides some support to the appeal that severely mentally ill patients should be referred through institutions where they are already known (14). In comparison, the third key factor, expertise, appeared to be of less impact on disallowance rate. This seems to differ from reports of substantial differences in assessment accuracy between healthcare personnel found in an Australian study, where professional expertise appeared to be an important factor (9). In our study, however, all referring clinicians were physicians. Hence, the subtle impact of diverging psychiatric expertise on disallowance rate could have been a result of the physicians’ communal general training. Perhaps, when the assessor possesses a certain

level of training, a further increase in the quality of referral assessments could be achieved by improving judgement of specific patient traits, for example symptom load and suicidality (16).

The magnitude of the association between competence and disallowance was modest, compared to effects exerted by other variables. Hence, referring agent competence did not appear to have a substantial total effect on disallowance likelihood. Additionally, several factors acted as predictors of competence level and were thus indirectly related to disallowance via the competence level that was received. Thus, patient selection probably accounted for part of the variation in disallowance rate between competence levels. It seemed that although referring agents had different features, only a subtle part of the variation in disallowance likelihood was attributable to those differences. This appears contrary to previous reports where traits held by the referring agents significantly impacted the referral pattern. However, most other studies investigated general referrals for psychiatric care (17) or involuntary referrals, without investigating eventual disallowance rates (14). Other studies with similar subjects were conducted in settings that were not comparable with the Norwegian system (18).

When patients with reported suicidal ideations, suicide plans or self-harm were admitted, the likelihood of disallowance appeared increased. This might reflect a natural progression in some of these cases, as admission to a safe environment and the passing of time might decrease the suicide risk (7). It could also be that patients considered to be at risk for suicide are compulsorily admitted due to the apprehension about adverse outcomes (8). This might be appropriate overtriage, preventing fatal outcomes. However, it could also reflect the clinicians' uncertainty in judging risk of suicide. Policy makers in institutions and individual clinicians alike should discuss the benefits of hedging against adverse outcomes vs. the risk of unwarranted compulsory referrals. Additionally, training and application of structured assessments could increase assessment confidence in healthcare professionals and contribute to preventing unwarranted referrals (16, 19).

Observed alcohol or drug intoxication seemed to increase the likelihood of disallowance, an association that seems to correspond with findings from a previous Norwegian study (8). This relation probably cancelled out any potentially significant effects of substance use disorders. The results from the regression analysis thus differed from the results of the bivariate analysis, which showed a significant association between substance use disorders and

disallowance. A considerable amount of the disallowances associated with intoxication were probably due to rapid improvement from an acute drug- or alcohol-induced mental crisis (7, 20). Hence, as with suicide risk, many of these disallowances were likely due to an actual change in a patient's condition. Nevertheless, clinicians could benefit from being aware of this association when considering compulsory referral of intoxicated patients.

According to the results in this study, non-Norwegians were at a significantly reduced probability of disallowance. This was an unexpected association. Non-Norwegians are perhaps more severely ill at admission (21), in part because of delayed help seeking due to poor knowledge of available healthcare services (22). Accordingly, a decreased rate of disallowance was perhaps a natural consequence of more severe illness at presentation. These findings appeared in line with the findings regarding symptom load in this study. Additionally, communication problems can interfere with psychiatric assessments (23), necessitating compulsory observation, thus reducing the disallowance rate. Communication quality could therefore be a factor contributing to this finding. It was probably one of several confounding factors behind this finding. More research is needed to improve the understanding of this association.

In conclusion, several factors were associated with disallowance. Among them, low symptom load was by far the strongest, whilst referring agent competence only modestly affected the outcome. More studies are warranted to improve the understanding of referrals for compulsory mental health care and disallowance, especially concerning relatively healthy patients.

### Limitations

The study population included in this study was limited to one region, which covered a tenth of the Norwegian population. It is uncertain whether these findings would have been replicated in a larger, cross-regional population.

No significant structural changes were carried out during the inclusion period from 1 May 2005 to 30 April 2008. After the inclusion period, there were comprehensive changes in the psychiatric healthcare organization in Norway. However, these changes did not impact handling of the patient group concerned in this study. Hence, the study is still relevant.

Time lapse between referral and the specialist's assessment was not registered. However, it was probably a decisive factor in the outcome of conditions that potentially changed rapidly,

for example suicide risk and alcohol or drug intoxication, and should be recorded in future studies.

Interpretation of the association between GAF S and disallowance was somewhat limited by the general nature of this scoring tool. Future studies could benefit from applying more extensive, detailed symptom assessment tools.

Information regarding the characteristics of each individual referring physician was not available. Thus, the competence variable described a hypothetical mean for each referring agent. There were most likely substantial differences in expertise between clinicians, also within each of the referring groups. Future studies could increase the validity of a similar variable by gathering information on the expertise held by each individual referring physician. Also, additional situational factors, for example time available for assessment and assessment environment, could be included to supplement a similar variable in future studies (6, 7, 9, 14).

Although the results of this and other studies perhaps suggest that unwarranted referrals occur, the lack of present knowledge on the relationship between disallowed and unwarranted referrals restricted the discussion on the topic. Investigation of appropriate levels of overtriage and more research on factors affecting assessment quality might offer valuable contributions. Certainly, further research on the topic is warranted.

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### Declaration of interest

No conflicting interests reported.

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