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N. K. FITZPATRICK, C. J. THOMPSON, H. HEMINGWAY, T. R. E. BARNES, A. HIGGITT,
C. MOLLOY AND S. HARGREAVES

Acute mental health admissions in inner London: changes in patient characteristics and clinical admission thresholds between 1988 and 1998

AIMS AND METHOD

We undertook a retrospective case-note review of three cohorts of mental health admissions to determine the extent to which patient and service characteristics changed between 1988 and 1998. Changes in clinical admission thresholds were investigated by a psychiatrists' review of handwritten medical admission assessments.

RESULTS

Patients admitted in 1998 were demographically less stable and clinically more complex than those admitted 10 years earlier. Clinical admission thresholds remained consistent.

CLINICAL IMPLICATIONS

Our findings suggest that the perceived increase in pressure on psychiatric services over this period was a response to a change in population need. This study highlights important questions about the clinical decision-making process leading to use of alternatives to admission and the appropriateness of acute admissions.

Acute adult mental health admissions have risen significantly since 1988 (Duffett & Cookson, 1997; Wall *et al*, 1999), during a period of major social and policy change, including the closure of large long-stay mental hospitals. The NHS and Community Care Act (1990) and the Care Programme Approach (Department of Health, 1990) aimed to improve the quality of community care. Over the past decade, there have been substantial increases in bed occupancies and difficulties finding beds (Powell *et al*, 1995; Ford *et al*, 1998; Higgins *et al*, 1999) but it is not known whether this heightened pressure is a result of increased psychiatric morbidity or changed clinical practice.

Studies during this period identified a range of socio-demographic (Jarman *et al*, 1992; Kammerling & O'Connor, 1993), clinical and health service characteristics (Flannigan *et al*, 1994; Korkeila *et al*, 1998) that increase risk of psychiatric admission. However, very few studies have reported how such factors have changed over time; in England, the rise in formal admissions under the Mental Health Act (1983) is the only established factor (Duffett & Cookson, 1997; Sainsbury Centre for Mental Health, 1998). Furthermore, it is not known whether thresholds for admission have changed with the introduction of new clinical policies or defensive clinical practice following high-profile enquiries (Ritchie *et al*, 1994). In-patients in inner London are more often

compulsorily admitted, have a psychotic illness or social problems and exhibit more aggressive behaviour than in-patients in other cities (Johnson *et al*, 1997), which may suggest higher admission thresholds. Rises in formal admissions (Department of Health, 1998) may indicate an increase in admission thresholds over time. In the absence of nationally available routine data, this is the first study to determine how patient and health service factors associated with acute psychiatric admissions differ over time.

Method

Three cohorts of mental health admissions were identified from three inner-London adult acute units (St Charles', South Kensington and Chelsea, and The Gordon hospitals) where bed numbers remained stable and catchment areas did not change during the study period. A list of admissions to each unit was compiled for each study year, from which 612 patients aged 16–64 years were randomly selected for case-note abstraction (192/215 in 1988; 210/974 in 1993; and 210/1384 in 1998). Seventy abstractions per hospital per study year were completed (data for 1988 were incomplete owing to insufficient patient lists). There were no exclusion criteria.

After piloting, a standardised form was developed on which researchers recorded demographic, clinical and

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health service details for each index admission (defined as the first qualifying admission that year). Patients contributed only one index admission. Any patient sampled in an earlier study year (e.g. 1988) was excluded from being reselected if they were readmitted in any of the later study years (e.g. 1993 or 1998). Local research ethics committee approval was obtained.

Admission threshold sub-study

Fifty sets of case notes from 1988 and 50 from 1998 (25 men and 25 women for each year) were randomly selected from the above list of patients, and their handwritten medical admission assessments were obtained. Legibility of case-notes was the only criterion on which selection of assessments was based. Any recorded date (e.g. admissions, medical history) or record that the patient was actually admitted (e.g. physical examinations, management plan), and all personal and professional identifiers and locations were deleted.

Four practising psychiatrists independently reviewed each assessment and were invited to recommend whether they would admit the patients to an acute in-patient unit. Psychiatrists were not informed that patients had been admitted.

Statistical analysis

All data were analysed in SPSS (version 11.0). The prevalence of each explanatory factor was compared using the chi-squared test for heterogeneity across the three cohorts. The study was powered to detect a 10% absolute change in explanatory factors, assuming an initial prevalence of 10% (power=80%, $P=0.05$).

Results

Table 1 presents patient demographic characteristics on index admission across the study years. The mean (s.d.) age decreased from 38 (13.7) years in 1988 to 35 (10.8) in 1998 ($P<0.05$). Employment fell from 19% in 1988 to 10% in 1998 ($P<0.0001$). Fewer patients had lived at their current address for 12 months or more in 1988 (48%) than in 1993 (34%) and 1998 (30%) ($P<0.05$) and fewer were discharged to their previous accommodation in 1998 (72% in 1988; 60% in 1993; and 68% in 1998; $P<0.005$). Ethnicity did not change across the study years.

Table 2 shows clinical and health service information on index admission across the study years. The most common diagnosis was psychosis, which did not vary significantly over time (48% in 1988 and 44% in 1998). The proportion of patients who received two or more classes of medication increased from 34% in 1988 to 53% in 1998 ($P<0.005$). Prescribing of antipsychotic medication fell from 71% in 1988 to 63% in 1998 ($P<0.01$) but that of hypnotics/anxiolytics rose significantly (from 15% to 37%; $P<0.0001$).

The median length of in-patient stay halved, from 30 days in 1988 to 15 in 1998 ($P<0.05$). Specific reasons for admission included risk of self-harm (which doubled, from 14% in 1988 to 28% in 1998; $P<0.005$) and prevention of substance misuse, the latter showing only minimal change over the 10 years (from 2% to 3%), despite the proportion of patients with a history of substance misuse more than doubling over the same period (from 22% to 49%; $P<0.001$). Mental Health Act admissions increased between 1988 and 1998 (from 20% to 31%; $P=0.001$). Of those admitted formally, numbers admitted to hospital for treatment (under Section 3)

Table 1. Demographic characteristics of three cohorts of mental health admissions in 1988, 1993 and 1998 (n=612)

	1988 (n=192)	1993 (n=210)	1998 (n=210)	P
Age (mean (s.d.))	38 (13.7)	37 (12.0)	35 (10.8)	0.04
Ethnicity (n (%))				
White	128 (67)	136 (65)	142 (68)	
Black	27 (14)	30 (14)	36 (17)	
Asian	3 (2)	6 (3)	8 (4)	
Other	3 (2)	10 (5)	14 (7)	0.30
Marital status (n (%))				
Married/cohabiting	37 (19)	35 (17)	27 (13)	
Divorced/separated	24 (13)	28 (13)	43 (20)	
Single	124 (65)	125 (60)	123 (59)	0.08
Living alone (n (%))	62 (32)	90 (43)	90 (43)	0.17
Currently employed (n (%))	37 (19)	25 (12)	20 (10)	<0.0001
> 1 year at current address (n (%))	93 (48)	71 (34)	62 (30)	0.01
Accommodation on admission (n (%))				
Non-permanent ¹	42 (22)	57 (27)	57 (27)	
Council/housing association	40 (21)	39 (19)	36 (17)	
Owned/private rented	32 (17)	37 (18)	27 (13)	
Living with parents	18 (9)	13 (6)	17 (8)	
Supported housing	5 (3)	10 (5)	6 (3)	
Other	6 (3)	7 (3)	6 (3)	0.79
Discharged to previous accommodation (n (%))	139 (72)	126 (60)	142 (68)	0.002

1. Direct access, hostels, emergency accommodation, staying with family/friends, sleeping rough.

**Table 2. Clinical and service use characteristics for three cohorts of mental health admissions in 1988, 1993 and 1998 (n=612)**

	1988 (n=192)	1993 (n=210)	1998 (n=210)	P
Source of referral (n (%))				
Hospital services	58 (30)	59 (28)	67 (32)	
Criminal justice system	25 (13)	49 (23)	42 (20)	
Self	33 (17)	26 (12)	34 (16)	
Family/carer	20 (10)	31 (15)	25 (12)	
General practitioner	15 (8)	17 (8)	10 (5)	
Social worker	8 (4)	9 (4)	11 (5)	
Community psychiatric nurse	4 (2)	2 (1)	4 (2)	0.40
Diagnosis (n (%))				
Psychosis	93 (48)	107 (51)	92 (44)	0.23
Bipolar disorder	37 (19)	36 (17)	21 (10)	0.02
Depression	13 (7)	17 (8)	27 (13)	0.10
Alcohol misuse/dependence	8 (4)	10 (5)	18 (9)	0.14
Personality disorder	11 (6)	6 (3)	18 (9)	0.05
Substance misuse	2 (1)	7 (3)	15 (7)	0.007
Neurosis	5 (3)	5 (2)	2 (1)	0.40
Other (e.g. anorexia, adjustment disorder)	10 (5)	10 (5)	9 (4)	0.88
≥2 diagnoses (n (%))	35 (18)	33 (16)	39 (19)	0.72
Medication (n (%))				
Antipsychotics	137 (71)	153 (73)	132 (63)	0.006
Hypnotics/anxiolytics	28 (15)	54 (26)	77 (37)	<0.0001
Antidepressants	41 (21)	45 (21)	63 (30)	0.07
Anti-Parkinsonian	41 (21)	49 (23)	39 (19)	0.46
Anti-epileptics	2 (1)	5 (2)	11 (5)	0.04
≥2 drug classes prescribed (n (%))	65 (34)	96 (46)	110 (53)	0.002
Substance misuse (n (%))				
History of misuse	43 (22)	73 (35)	102 (49)	<0.001
Reason for admission: prevention of misuse	4 (2)	7 (3)	6 (3)	0.76
Taking substance-dependence medication	1 (1)	0	10 (5)	<0.0001
Violence towards self (n (%))				
History of self-harm	53 (28)	49 (23)	61 (29)	0.52
Reason for admission: risk of self-harm	27 (14)	39 (19)	58 (28)	0.002
Violence towards others (n (%))				
History of violence	32 (17)	38 (18)	42 (20)	0.72
Reason for admission: risk of violence	18 (9)	13 (6)	16 (8)	0.47
Admitted under the Mental Health Act (n (%))	39 (20)	80 (38)	65 (31)	0.001
In-patient stay, days (median (interquartile range))	30 (8–62)	20 (6–45)	15 (6–48)	0.02
≥2 acute admissions in past 5 years (n (%))	89 (46)	69 (33)	79 (38)	0.01
Readmitted to same hospital within 2 years of index admission (n (%))	56 (29)	52 (25)	55 (26)	0.59
Number of readmissions to same hospital within 2 years (median (interquartile range))	2 (1–3)	1 (1–3)	1 (1–2)	0.79

showed a pronounced increase (from 5% to 29%; $P < 0.05$; not shown in Table 1). Sources of referral did not vary significantly over time. No differences were found in the proportion of patients who were readmitted (to the same hospital) within 2 years. The proportion of patients admitted in the 5 years prior to their index admission decreased across the three cohort years ($P < 0.05$).

Admission threshold sub-study

No differences were observed in the proportion of patients recommended for admission in 1988 and 1998 for three out of four psychiatrists. Psychiatrists indicated that they would currently admit only roughly half of the patients who were actually admitted from both 1988 (mean=28/50) and 1998 (mean=26/50).

Discussion

This is the first study to determine how factors associated with acute mental health admissions have changed over time. Our findings demonstrate significant changes in patient and health service characteristics between 1988 and 1998, although clinical admission thresholds remained consistent.

Socio-demographic changes suggest an increasingly unstable and isolated population. Over the 10-year study period, patients admitted to hospital were younger, increasingly mobile, more likely to be divorced or separated and more were unemployed during a time when unemployment in the general population fell. Geographical mobility may be associated with fewer patients being discharged to their previous accommodation across the study years. In addition,

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admissions for risk of self-harm rose over time. These vulnerable patients received increasingly complex management. The rise in the proportion of patients treated with more medication may be due to changes in clinical practice or increased psychiatric morbidity. Increased use of hypnotic/anxiolytic medication may reflect a response to increasingly disturbed in-patient settings, where sleep is often interrupted and such medication is needed to sedate disturbed patients. This avoids excessive doses of antipsychotic medication or increased benzodiazepine use in the context of other substance misuse; it may also form part of an alcohol detoxification programme. Further research is required to investigate this. Readmission rates did not change, despite significantly shorter lengths of stay. We found a substantial increase in the number of patients reporting a history of substance misuse (including occasional use of drugs) across the cohort years. Notably, however, substance misuse as a primary diagnosis or specific reason for admission was uncommon. Comorbid substance misuse may exacerbate mental health difficulties in combination with other psychiatric symptomatology, making management of patients increasingly complex.

Our findings did not indicate greater awareness of psychiatric disorder in the form of increased referrals, and referrals from general practitioners (GPs) in this study were low. However, some patients may not consult a GP, and of those that do, a significant proportion may not have their problems recognised (Commander *et al*, 1997). Referrals by the criminal justice system rose modestly, reflecting national figures (Department of Health, 1999a). Notably, the ethnic composition of admissions did not differ, despite increases in compulsory admissions (Department of Health, 1998) and an influx of refugees to central London.

Clinical admission thresholds did not change, despite the rise in compulsory admissions and greater provision of community services in 1998. However, clinicians indicated they would now admit only about half of the sample that was actually admitted to hospital in both 1988 and 1998. This is consistent with the finding that up to one-quarter of acute psychiatric in-patients in inner London are inappropriately located (Fulop *et al*, 1996). The fact that actual management differed so markedly from currently recommended management poses questions of logistical and other influences on the decision to admit. Importantly, the presentation of the cohort cases in the form of written assessments may have denied the reviewing psychiatrists intuitive cues often used to make clinical decisions about individual patients (Zohar *et al*, 1987).

Our study highlights important questions about the clinical decision-making process leading to use of alternatives to admission (e.g. assertive outreach, day hospitals) and the appropriateness of acute admissions. The decision to admit, which encompasses availability of and access to alternatives and the experience of the admitting doctor, warrants further examination, not least because national policy requires that more patients be managed outside in-patient facilities (Department of Health, 1999b). Further work should be undertaken to

identify how barriers to alternative management for patients may be overcome. This study only examined patients who were admitted to hospital. The inclusion of patients who were assessed but not admitted would have enhanced our understanding of how overall clinical admission thresholds have changed over time.

Our findings suggest that increased morbidity (evidenced by a rise in admissions for risk of self-harm, history of substance misuse and under Section 3 of the Mental Health Act) may partly explain increased admission rates since 1988. Computerised records of admission data were not available in 1988, therefore figures for that year may be an underestimate. Increased psychiatric morbidity over the study period may in part be related to increasing incidence of dual diagnosis (substance misuse and severe mental illness). In addition, the study follows a period of deinstitutionalisation, when the closure of large psychiatric hospitals will have resulted in a significant shift in long-stay patients to hostels, or when placements may have broken down. The rise in admissions under Section 3 may partly reflect increased monitoring by the Mental Health Commission. This study was unable to determine whether increased need in the community was due to new psychiatric cases or whether these patients had not been previously identified.

The case note review data had limitations. These included the absence of information on clinical severity, supervision register status or the Care Programme Approach. Recording of specific reasons for admission was uncommon. In the vast majority of cases, reason for admission was described only as 'severe illness'. However, recording of severe illness as a reason for admission decreased between 1988 and 1998, which may account for the observed increase in specific recording of risk of self-harm as a reason for admission. There are few other sources of data with which to compare our findings. The need to improve routine information systems for mental health is emphasised in recent NHS guidance (NHS Information Authority, 1999) and this study highlights limitations in clinical records.

With the above caveats, our findings indicate that increased pressure on mental health services (Higgins *et al*, 1999) may reflect an appropriate response to increased need in the population. This is consistent with the finding that over time, patients admitted to hospital were less demographically stable and more clinically complex. There is a need to monitor future changes in patient characteristics and the use of acute beds and their alternatives.

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Declaration of interest

None.

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*Natalie K. Fitzpatrick Senior Researcher, Catherine J. Thompson Research Officer, Harry Hemingway Director of Research and Development, Department of Research and Development, Kensington & Chelsea and Westminster Health Authority, 50 Eastbourne Terrace, London W2 6LX and Senior Lecturer in Epidemiology, Department of Epidemiology & Public Health, University College London Medical School, London, Thomas R. E. Barnes Professor of Clinical Psychiatry, Imperial College School of Medicine, Ealing Hospital, Middlesex, Anna Higgitt Consultant Psychiatrist and Senior Policy Adviser, Department of Health, London, Chris Molloy Project Manager and Researcher in Mental Health, Department of Research and Development, Kensington & Chelsea and Westminster Health Authority, 50 Eastbourne Terrace, London W2 6LX, Sally Hargreaves Director of Performance and Partnerships, Department of Performance and Partnerships, Kensington & Chelsea and Westminster Health Authority, London

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CLAIRE M. CONNOLLY AND ROGER BULLOCK

Treatment of patients with Alzheimer's disease: a national survey following release of the NICE guidance

AIMS AND METHOD

The National Institute for Clinical Excellence (NICE) has issued guidance regarding the treatment of Alzheimer's disease. A postal survey of old age psychiatrists, geriatricians and neurologists was conducted to establish working practice pre-NICE and investigate expectations about the effect of this guidance.

In January 2001 the National Institute for Clinical Excellence (NICE) issued its guidelines on the use of donepezil, rivastigmine and galantamine in the treatment of Alzheimer's disease, making these three drugs available for prescription in the NHS (NICE, 2001).

It was decided to survey doctors practising in old age psychiatry, geriatrics and neurology to investigate

RESULTS

The overall response rate was 26.3%. Old age psychiatrists prescribe the majority of drugs for the treatment of Alzheimer's disease. There was variation in the annual expenditure on such treatment. The main reason for non-prescription was a lack of funding. Over 80% of doctors thought that patients with mild

disease should now be targeted for treatment.

CLINICAL IMPLICATIONS

In order to implement the guidance it will be necessary to address the issue of funding and have clear role allocation between local services.

their working practices before the NICE decision, and their expectations about the effect of the NICE guidance. The intention is to conduct follow-up surveys to investigate the impact of the guidance. Additional surveys were conducted with hospital pharmacists and also with members of health authorities and primary care groups and trusts. This paper presents the results from the baseline survey with clinicians.