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JOHNNY DOWNS AND MARTIN ZINKLER

Clozapine: national review of postcode prescribing

AIMS AND METHOD

We review the prescribing rates for clozapine among all mental health trusts in England and explore whether it has changed with the introduction of NICE guidelines, generic clozapine and the Healthcare Commission ratings. Data were collected from mental health trusts in 2005–2006 and compared with a

previous study from 2000. Mental health star ratings of 2004–2005 were taken from the Healthcare Commission.

RESULTS

We found a reduced inter-trust variability from 34-fold variation in 2000 to 5-fold variation in 2005–2006. There was a significant inverse

relationship between star rating and clozapine prescribing.

CLINICAL IMPLICATIONS

NICE guidelines and generic clozapine seem to have improved access to gold standard therapy for treatment-resistant schizophrenia. Star ratings have little bearing on the implementation of NICE guidelines.

Clozapine is a unique agent in the treatment of schizophrenia. It is significantly more effective in treating positive and negative symptoms than other antipsychotics but it can cause serious side-effects of agranulocytosis in a significant proportion (0.8%) of patients (Alvir *et al*, 1993).

It has received strong endorsement as a cost-effective therapy by the National Institute for Health and Clinical Excellence (NICE) in their guidance on the use of new antipsychotic drugs for schizophrenia (National Institute for Clinical Excellence, 2002). It is recommended for all patients who are treatment resistant (i.e. who have failed to respond adequately to a trial of two antipsychotic medications). This implies that around 18% of patients diagnosed with schizophrenia could be treated with clozapine.

Starting and stabilising a patient on clozapine has greater resource implications for mental health staff and patients than any other antipsychotic medication. Treatment usually requires initiation in hospital or intensive monitoring in the community (for example home treatment or day hospital).

Large variation in its utility has been noted in a previous study. In 2000 a 34-fold variation in prescribing practices was reported (Purcell & Lewis, 2000) among 12 trusts over 3 years, and this degree of maximum variation was stable over that period. Non-evidence-based practice was cited as the main contributing factor for low prescribing of clozapine, with cost and licensing restrictions compounding the reluctance to utilise the drug. A study in 2003 in the same region (Hayhurst *et al*, 2003) revealed a 16-fold variation per capita use of clozapine between local mental health trusts.

Since the publication in 2002 of the NICE guidelines on the treatment of schizophrenia, and the significant reduction of the cost of clozapine after it came off patent in 2004, we hypothesised that access to clozapine would increase and become more consistent. We are not aware of any further studies on the topic. We were also interested to explore whether, owing to the diverse clinical, logistic, and patient-orientated resources that are required to implement successful clozapine therapy, the overall performance of a mental health trust could be implicated in its delivery.

We believe that a trust's performance in making clozapine available to its population reflects on this trust's ability to:

- implement evidence-based treatment
- devolve resources to the people most severely affected by mental illness
- deliver interventions that imply a significant amount of active work with patients, negotiate informed consent and foster consistent engagement with services
- to sustain sound organisational structures in running clozapine clinics.

At the time of this study the only measure available to judge a trust's global performance on clinical, logistic and patient-centered service delivery was the Commission for Health Improvement (now Healthcare Commission) star rating scheme. The question emerged whether a trust's performance (star rating) correlated with the availability of clozapine to its population.

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Table 1. People receiving clozapine by trust

Trust	Population, <i>n</i>	No. patients on clozapine, <i>n</i>	Clozapine per 10 000 <i>n</i>	Mini Score
1	475 000	163	3.43	1.63
2	800 000	392	4.90	1.77
3	250 000	30	1.20	2.02
4	240 000	75	3.13	1.63
5	990 000	435	4.39	2.54
6	500 000	95	1.90	2.70
7	320 000	120	3.75	2.64
8	190 000	65	3.42	2.34
9	1 600 000	552	3.45	2.35
10	570 000	130	2.28	3.11
11	1 200 000	538	4.48	3.22
12	500 000	150	3.00	2.29
13	950 000	252	2.65	2.31
14	550 000	221	4.02	2.99
15	650 000	450	6.92	4.19
16	1 000 000	303	3.03	1.82
17	1 300 000	730	5.61	3.01
18	750 000	275	3.67	2.93
19	1 100 000	339	3.08	2.14
20	650 000	300	4.61	2.01
21	330 000	114	3.45	2.43
22	800 000	275	3.43	3.47
23	1 200 000	394	3.28	2.88
24	260 000	110	4.20	2.23
25	320 000	72	2.25	2.90
26	1 200 000	505	4.21	4.10
27	240 000	60	4.00	2.02
28	500 000	100	2.00	1.91
29	1 100 000	475	4.32	3.05
30	1 000 000	290	2.90	2.75
31	690 000	430	6.23	4.38
32	880 000	358	4.07	3.17
33	200 000	63	3.15	2.92
34	555 000	150	2.70	2.92
35	491 000	220	4.48	3.04
36	500 000	186	3.72	2.16
37	305 155	78	2.56	2.18
38	100 000	19	1.90	3.16
39	600 000	100	1.67	2.44
40	1 000 000	91	0.91	1.84
41	400 000	177	4.43	2.65
42	736 000	375	5.10	2.50
43	625 000	216	3.46	1.91
44	275 000	48	1.75	2.95
45	520 000	157	3.02	1.93

Method

All pharmacies that supplied the 75 English mental health trusts that were using clozapine were contacted in 2005–2006 and invited to supply details on the number of patients that were receiving clozapine at a single point in time and the approximate population size their trust served.

Star ratings for each trust were taken from the 2004–2005 results published by the Healthcare Commission in 2005.

Clozapine prescribing ratios were then adjusted according to the trust's population and deprivation, using the Mental Illness Needs Index (MINI) predicted

prevalence (Glover, 1998) to account for the variation in mental health service use.

Results

We received information from 45 trusts by September 2006. A total of 10 678 patients were receiving clozapine from a population of 29.4 million (see Table 1). There was a maximum 5-fold variation (adjusted by population and MINI) among trusts' prescribing rates (see Fig. 1).

Regression analysis demonstrated a small inverse relationship between a trust's star rating and its adjusted clozapine prescribing rates (see Fig. 2). A 1-star increase



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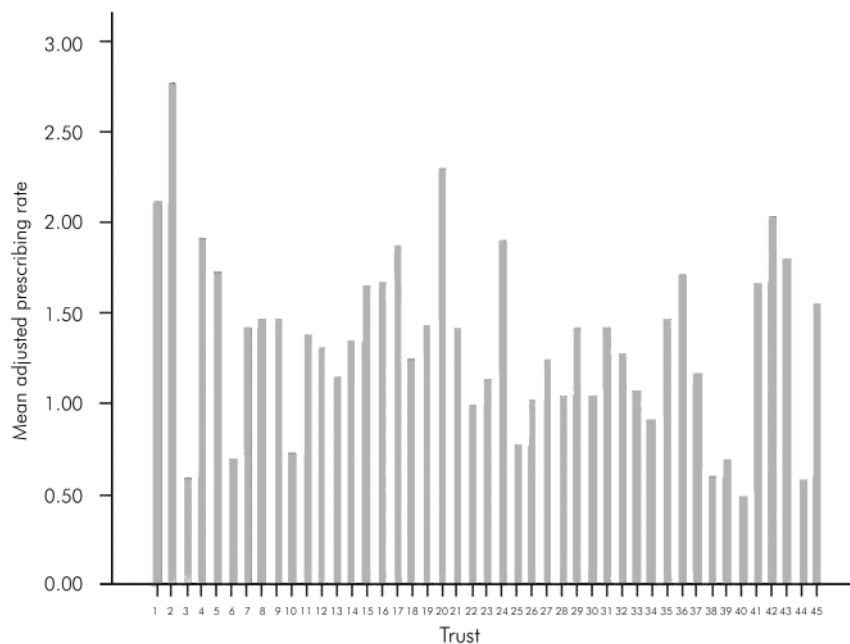


Fig. 1. Adjusted clozapine prescribing rates for 45 trusts in England.

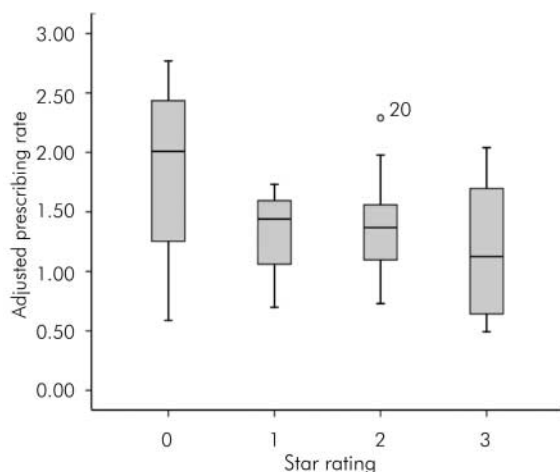


Fig. 2. Adjusted clozapine prescribing rates according to Healthcare Commission star rating.

correlated with a 10% decrease in ratio ($P=0.045$). For the average trust in our sample (population 680 000 and MINI 2.67) a 1-star increase relates to a reduction in 31 patients receiving clozapine.

Discussion

This study describes the prescribing patterns for clozapine for 60% of the mental health trusts in England. According to the NICE guidelines (2002) 63 000 individuals would be eligible for clozapine in England. At that time, they estimated 13 500 were receiving clozapine (21% of those eligible). Using our figures sampling 56% of England’s population (29.4 million; Office for National Statistics) we found 10 678 receiving clozapine, equivalent to 30% of those eligible.

Compared with an earlier study published before NICE guidelines were circulated and clozapine became available off patent (Purcell & Lewis, 2000), there has

been a significant reduction from the previously recorded maximum 34-fold inter-trust variation to 5-fold.

Although the Healthcare Commission no longer uses star ratings as an overall measure to distinguish high- and low-performing trusts, we still thought it relevant that a trust’s prior star rating bore no relation to a trust’s ability to institute a complex psychiatric intervention like clozapine initiation and maintenance. This may be a reflection on pharmacies and clinicians acting in isolation from the standards of the rest of the trust. More likely is that robust measures of judging clinical quality of care have not been incorporated into the healthcare ratings system and were not adequately reflected in the star ratings. It is suggested in this study that a trust that is deemed to be a poor performer by star rating may give excellent care provision to its most complex patient cohort. The finding of an inverse correlation between star ratings and clozapine use should just highlight that clinical activity may be removed from the appraisal of a trust’s overall performance. We question whether inclusion of a clozapine prescribing item in future ratings might focus our efforts a little more towards those with severe mental illness and evidence-based interventions.

This study is limited by the information that has been supplied by individual trusts, which may be subject to bias. The response was voluntary but marginally weakened by selection bias with 60% representation of all mental health trusts, with no clustering of trusts to national regions. We were unable to exclude all national and forensic unit populations, but trusts were encouraged to provide information pertaining to secondary care.

Declaration of interest

None.



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POLASH SHAJAHAN AND MARK TAYLOR

Outcome of acute psychiatric in-patient care where there are no crisis or home treatment teams

AIMS AND METHOD

To examine the pathways and outcomes of in-patient care in our locality before crisis teams were introduced details of all emergency referrals to psychiatry were recorded and all admissions to hospital were assessed within 24 h of admission and discharge.

RESULTS

Over a 6-month period, 88% ($n=1852$) of calls to the duty psychiatrist occurred between 09.00 and 01.00 h. Referrals from accident and emergency and general practice represented the majority of calls (80%); 40% of patients were admitted. Highest admission rates were for

patients who were psychotic, suicidal or depressed. Admission led to improvement in all symptoms.

CLINICAL IMPLICATIONS

In-patient care is a valuable resource for stabilising patients who are acutely ill. Routine monitoring of unscheduled activity can inform service delivery.

Recent years have seen the development of specialist crisis and home treatment teams for managing patients who would previously have been admitted for in-patient care (Glover *et al*, 2006). Despite the expansion of these community-based services, in-patient psychiatric care is necessary for patients who cannot be managed safely or effectively in the community. Admission to hospital is one of the oldest and most frequently used interventions in psychiatry, however, surprisingly little has been written about its use and outcome, although there has been concern about standards of in-patient care (Quirk & Lelliot, 2004; Lelliot *et al*, 2006). Studies of acute hospitalisation in psychiatry have been comparisons between forms of home treatment or day hospital care and the 'treatment as usual' of in-patient psychiatric care (for example, Priebe *et al*, 2006). To our knowledge there has been no systematic or prospective description of the use and outcomes of acute psychiatric in-patient care, despite the upheaval to the patient and cost of hospitalisation. We note the recent comment by Holloway (2006) that '... admission is construed as representing a failure of the individual patient or the service, rather than a potentially valuable therapeutic option.' We aimed to examine the pathways to and therapeutic value of in-patient care in

our service (NHS Lanarkshire), where crisis or home treatment teams have yet to be developed.

Method

Lanarkshire has a population of approximately 550 000 with relatively high deprivation ratings (Director of Public Health, 2005). There are no local private psychiatry facilities and community mental health teams (CMHTs) are the mainstay of community care for mental health services, and operate between 09.00 and 17.00 h without any specialised crisis assessment or home treatment teams. Decisions to admit are traditionally made by the junior on-call psychiatrist, supported by advice from senior colleagues. To measure psychiatric on-call activity a duty log-book was introduced to all three psychiatric admission units in Lanarkshire in February 2003. Every on-call psychiatrist was instructed to note down details of all referrals, excluding those from the acute (internal) in-patient psychiatric wards. The first noted problem was used for analysis, and problems were grouped into those related to alcohol, illicit drugs, psychosis, bipolar disorder, anxiety/depression, self-harm or suicidal behaviour, aggression, confusion or other