

Relationship style between GPs and community mental health teams affects referral rates

S A Hull, C Jones, J M Tissier, S Eldridge and D Maclaren

SUMMARY

Background: Community mental health teams (CMHTs) are the established model for supporting patients with serious mental illness in the community. However, up to 25% of those with psychotic disorders are managed solely by primary care teams. Effective management depends upon locally negotiated referral and shared care arrangements between CMHTs and primary care.

Aim: To examine whether the style of working relationship between general practices and CMHTs affects the numbers and types of referrals from general practices to CMHTs, taking into account population and practice factors and provision of other mental health services which may influence referral rates.

Design of study: Cross-sectional study.

Setting: All 161 general practices in East London and the City Health Authority.

Method: Questionnaire survey to all general practices to identify style of relationship. Collection of routinely available referral data to all statutory mental health services over a two-year period. Main outcome measures were number and types of referrals from general practices to CMHTs.

Results: The average annual referral rate to the eleven CMHTs in east London is 10 per 1000 adult population annually. The teams show a sixfold variation in rates of referral from all sources. Where good working relationships (a consultation-liaison style) exist between CMHTs and general practice, there are greater numbers of referrals requiring both long and short-term work by CMHTs. Two-stage multivariate models explained 47% of the referral variation between practices. Where primary care-based psychologists work with practices there are greater numbers of CMHT referrals, but less use of psychiatric services.

Conclusion: Shifting to a consultation-liaison relationship should increase rates of referral of patients with serious mental illness, including those who can most benefit from the skills of CMHTs. Increasing the provision of primary care-based psychology might improve practice use of mental health services, reducing avoidable outpatient psychiatric referrals.

Keywords: community mental health team; specialist services; psychiatric services; primary care.

Introduction

MULTIDISCIPLINARY community mental health teams (CMHTs) serving geographical patches and based within specialist psychiatric services, are the model favoured by the Department of Health for the community care of people with 'severe and enduring' mental health problems.¹ This development has been fostered by the introduction of the Care Programme Approach for people in contact with secondary psychiatric services.²

Previous studies suggest that general practitioners (GPs) play an increasing role in the care of people with serious mental illness.³ Developing shared care — particularly within inner urban areas, such as London, where rates of serious mental illness are well above average and patient mobility is high — has been problematic.^{4,5} Studies suggest that up to 40% of patients with severe mental illness, including 25% of those with psychotic disorders, are not in contact with specialist services, being managed solely by primary care teams.⁶ Additional problems include psychiatric facilities working at capacity, inadequate communication, and overlapping professional roles.⁷

Current government directives for mental health care include the aim of increasing the onward referral of those with serious mental illness to care within CMHTs while promoting the management of common mental health problems within general practice.^{8,9} Effective delivery of this programme depends upon robust and locally negotiated referral and shared care arrangements between CMHTs and primary care services.

Although models of working at the interface between mental health services and primary care have been described,¹⁰ no previous study has looked at the effect that the style of relationship between CMHTs and GPs might have on referral rates. Current literature suggests that a consultation-liaison model of joint working may best achieve the government aims for mental health care.¹¹ This model places emphasis on developing regular face-to-face contact and case discussion between GPs and other members of the primary care team and secondary community mental health staff.

This study examines whether the style of relationship between general practices and CMHTs in east London affects the numbers and types of referrals to teams.

Method

The study was based in East London and City Health Authority (ELCHA). This includes the inner London boroughs of Tower Hamlets, Hackney, and Newham; multiethnic socially deprived localities with high levels of hospital

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HOW THIS FITS IN*What do we know?*

About 40% of patients with long-term mental illness, and 25% of those with psychotic illness, are cared for solely by their primary care team. Higher rates of referrals to CMHTs are associated with socioeconomic deprivation. There is little available evidence on which models of service organisation deliver the most effective care for patients.

What does this paper add?

A consultation–liaison style of working relationship between general practices and CMHTs is associated with increased referral rates of patients with serious mental illness. CMHTs covering similar populations show marked variation in service provision, measured by referral rates and population coverage. In east London, GPs with access to 'practice attached' primary care psychology, have lower referral rates to psychiatric outpatients.



admission for schizophrenia and other serious mental illness.¹² Eleven CMHTs serve defined geographic areas which are not co-terminus with general practice catchment boundaries.

Identification of general practice: CMHT style of relationship

The general practices' views of their working relationship with the CMHT was the key predictor variable for the analysis. Information on the working relationship was obtained by postal questionnaire addressed to the practice manager in all 161 practices in ELCHA. This was followed by two written reminders and telephone contact to non-responders. Views on the working relationship were also sought from the eleven CMHTs.

Two researchers coded the questionnaire responses into three categories:

1. No regular contact — received information from the team only by letter and occasional telephone contact.
2. Some contact — regular telephone contact and able to meet the team if required.
3. Consultation–liaison relationship — regular face-to-face contact with casework discussion, four to six times weekly.

The survey achieved a 94% response rate from practices. No regular contact was recorded by 34% of practices, 35% had some contact and 25% described a consultation–liaison relationship.

General practice referrals to the 11 CMHTs

We collected information on all referrals from all sources to the eleven CMHTs over a two-year period (April 1997 to March 1999) using both computerised and manual records.

We categorised the referral outcomes under four headings (Figure 1). The separation into long and short-term referrals at eight weeks was based on examination of case records. These suggested that the majority of cases requiring crisis work, brief intervention or referral on to other agencies were discharged within this period, whereas those requiring long-term case work or supervision were not. Long and short-term referrals were used as separate outcomes in the analysis.

Referrals to other statutory mental health services

The health authority information department provided details of referrals to psychiatry outpatients (excluding non-attendances for first appointments); hospital-based psychological services and inpatient psychiatry episodes (including re-admissions). Information on referrals to primary care-based psychology services and psychologist hours attached to practices were obtained from the psychology and counselling teams.

Practice and population characteristics

The East London GP Database Project provided information on practice size, staffing, and organisational factors.¹³ Population characteristics included the Jarman underprivileged area score for each practice, locality (Newham, Hackney or Tower Hamlets), census-derived data on Afro-Caribbean ethnicity and the proportion of Asian names by practice. This variable was devised using the names of patients on each practice list and assigning each name to an ethnic group. This method has been shown to be accurate for the attribution of South Asian ethnicity, but underestimates the attribution of Afro-Caribbean ethnicity.^{14,15}

Antipsychotic medication

We used the total annual daily defined doses of antipsychotic medication per 1000 practice population as a marker of the distribution between practices of prevalent cases of severe mental illness. Prescribing data for each practice was obtained from the Prescription Pricing Authority for the period June 1997 to May 1998.¹⁶ Drug groups included antipsychotic drugs, atypical antipsychotics, depot antipsychotics, and antimanic drugs.

Statistical methods used for analysis

The unit of analysis was the general practice. Three single-handed practices were removed from the analyses owing to missing data during a study year. Univariate analysis between practice and population characteristics and rates of referral to CMHTs were examined using descriptive statistics, correlations, and simple linear regression models. The outcome variables of referral rates to CMHTs had non-normal distributions requiring square root transformation prior to statistical analysis.

A model was postulated in which population characteristics (reflecting population need) affect referral rates to community mental health teams, these rates also being affected by practice characteristics (reflecting resources and organisation factors). Once population need and practice characteristics have been taken into account, there may be further

Outcomes of all GP referrals to Community Mental Health Teams			
Weeding (31% of referrals)	Short-term work (33% of referrals)	Long-term work (32% of referrals)	Uncertain (4% of referrals)
<ul style="list-style-type: none"> • Brokerage of referral to another service including psychiatric outpatient • Out of age limit or area for CMHT • Referred back to GP • Referral closed within 7 to 14 days 	<ul style="list-style-type: none"> • Indication of assessment • Case closed within eight weeks 	<ul style="list-style-type: none"> • Allocated key worker • Case open longer than eight weeks 	<ul style="list-style-type: none"> • No information

Figure 1. Outcomes of general practice referrals to CMHTs in east London.

effects owing to the provision of local psychiatric services and the relationship style between the GPs and the community mental health team. Multiple regression models were fitted to reflect this theoretical model for the 147 practices with complete data sets. All categorical variables were analysed using the first category as the baseline against which the other categories were compared.

At the first stage, the referral rate was assumed to be dependent on the population and practice variables that were significantly related (at the 5% level) to referral rates in univariate analyses. These were all retained in the model. At the second stage, all the 'service provision' factors, the variables reflecting working style of CMHTs, and the GP's view of the relationship with the CMHT were entered into the model and removed in a stepwise fashion until only those variables whose effect was significant at 5% remained.

Separate models were fitted to overall referral rates, long-term, and short-term referral rates. The analyses were weighted by practice size, although this made little difference to the model estimates. Final models were tested for heteroscedasticity and other departures from model assumptions. All statistical analysis was undertaken using STATA.

Results

Use of psychiatric services by the east London population

The annual contact rate with the statutory mental health services within east London is 30 per 1000 adults. This includes psychiatric inpatients, outpatients, CMHTs, and psychology and counselling. This summary figure relates to episodes rather than individuals and hence it is likely to be an overestimate, as some individual may be referred to more than one agency within the year. The sources of referral to the CMHTs in east London are shown in Table 1. The average adult referral rate to CMHTs is 10 per 1000 annually, with referrals from general practice accounting for only 21% of the total.

There was a sixfold variation (0.31% to 1.75%) in the proportion of the locality adult population seen annually by the eleven CMHTs. This reflects diversity among teams in their structure, resources, and style of work.

Univariate analysis

The distribution of the population, practice, and mental health service use variables for the study practices are

shown in Table 2. Markers of practice organisation vary widely between practices, one-third still being without practice managers. A minority of practices have attached primary care psychologists working on site.

The correlation coefficients between referrals to CMHT and the predictor variables are included in Table 2. Significant negative correlations were seen for Asian ethnicity and the mean age of practice populations. No associations were found with the practice underprivileged area (Jarman) score, which may reflect a uniformly socially deprived population. There were multiple correlations with the practice characteristic factors. There were positive correlations with the daily defined dosages of antipsychotic medication and strong associations with referral to primary care psychology, but not with referral to psychiatric services.

Effects of practice size on referral to CMHTs and other mental health services

East London has a large number of small practices (45%). Many of these are poorly resourced and previous studies have shown important associations with practice size on the delivery of preventive services and prescribing quality.^{13,17,18} We found that practices with four or more partners were more likely to have a consultation-liaison relationship, have higher rates of antipsychotic drug prescribing, and referred more patients requiring long-term work than smaller practices. (Table 3.) There are significantly fewer inpatient and outpatient psychiatric episodes in large practices, but higher rates of psychology referral.

Multivariate analysis

Population and practice variables explained 35% of the variation in overall referral rates (Table 4). Use of other psychiatric and psychology services did not explain a significant amount of the variation once these had been accounted for. Whether the GP thought the relationship was good, and the work style of the CMHT, explained a further 12%. The model shows a strong effect of location on referral rates with practices in Newham and Tower Hamlets making more use of CMHTs. Practices with large Asian populations and younger populations referred less often. After population and practice differences had been accounted for, practices with a consultation-liaison relationship made more referrals. Results for short and long-term referrals were similar and are shown in Table 4.

Table 1. Sources of referrals to the eleven Community Mental Health Teams in east London: numbers (%) of referrals from all sources to the eleven CMHTs in the three localities of ELCHA, April 1997 to March 1999. (Population aged 16 to 64 years = 391 270.)

Source of referrals	Totals for all three localities	City and Hackney: four teams (population = 133 245)	Newham: three teams (population = 145 646)	Tower Hamlets: four teams (population = 112 383)
General practitioner	1626 (21)	420 (11)	692 (25)	514 (43)
Other sources of referral				
Mental health services	2750 (35)	1494 (39)	752 (27)	504 (42)
Local authority services	1096 (14)	429 (11)	641 (23)	26 (2)
Day care	146 (2)	18 (0.5)	121 (4)	131 (5)
General hospital	255 (3)	87 (2)	131 (5)	(3)
Self referral	594 (8)	501 (13)	(3)	(0.1)
Voluntary agency	83 (1)	50 (1)	(1)	(0.1)
Other	1006 (13)	610 (16)	350 (12)	(3)
Unspecified	256 (3)	189 (5)		67 (6)
Total referrals	7812	3303	2811	1198
Average annual adult referral rate to CMHTs	1.0%	1.25%	0.95%	0.55%

Table 2. Distribution of the population, practice and mental health service use variables, and correlation coefficients for referral rates to CMHTs for all general practices in ELCHA.

Variable	Number of practices	Median	Interquartile range	Correlation with referrals rates to CMHTs ^a	
				Correlation ^a	P-value
Practice population variables					
Underprivileged area score	150	41.4	38.3–45.2	0.007	0.93
Practice locality					
Hackney	53			0.28	<0.001
Newham	66			0.4	
Tower Hamlets	42			0.46	
Mean age of patients aged 16 to 65 years	161	36.4	35.2–37.6	-0.19	0.01
Percentage of practice population who are Afro-Caribbean (from 1991 census)	150	14.4	10.4–20.2	-0.06	0.45
Percentage of practice population with Asian names (using naming method)	161	14.2	6.4–32.7	-0.13	0.09
Annual total daily defined dosages of antipsychotic medication/1000 of the total practice population	156	876	529–1502	0.25	0.002
Practice organisation and resources					
List size/full time equivalent GP	158	2015	1634–2562	-0.17	0.03
Partnership size ^a					
1	73			0.99	0.184
2 or 3	36			0.11	
4 or more	52			1.58	
Practice Manager ^a					
Yes	103			2.12	0.008
No	58			1.05	
Training practice ^a					
Yes	23			2.12	0.008
No	138			1.05	
Percentage of eligible women on list receiving cervical cytology	161	75.5	63.3–80.7	0.43	<0.001
Asthma prophylaxis to bronchodilator prescribing ratio	161	0.42	0.35–0.50	0.12	0.14
Use of other psychiatric services					
Primary care psychology hours attached to the practice/week	158	0	0–3.5	0.28	0.002
Annual rate of primary care psychology referrals/1000 adult population	158	1.7	0.3–7.2	0.39	<0.001
Annual rate of psychiatric inpatient episodes (including re-admissions)/1000 adult population	158	4.7	3.1–7.2	-0.04	0.6
Annual rate of first appointment at psychiatric outpatients (excludes DNAs)/1000 adult population	158	5.4	3.2–7.7	0.03	0.73

^aWilcoxon rank sum, or Kruskal–Wallis test (if more than two categories).

Table 3. Referrals to CMHTs, psychology, and psychiatric services by partnership size, for practices in east London. (Annual rates/1000 adult population aged 16 to 65 years.)

	Single-handed (n = 73)	2-3 partners (n = 36)	4 or more partners (n = 52)	Kruskal-Wallis significance test
Median annual rate of CMHT referrals by GP practices (total)	0.98	1.05	1.6	NS
Median annual rate of CMHT referrals by GP practices (long term)	.32	0.23	0.54	0.02
Median annual rate of CMHT referrals by GP practices (short term)	0.21	0.27	0.33	0.04
Median annual rate of primary care psychology referral by GP practice	1.2	1.0	5.4	0.001
Median annual rate of psychiatry outpatient referral by GP practice (excludes DNAs)	6.8	5.3	3.7	0.001
Median annual rate of psychiatric inpatient episodes (includes readmissions)	5.7	4.8	3.6	0.002
Median daily defined dose of antipsychotic medication/1000 practice population	719	786	1343	<0.001
GP view of relationship with CMHT				
None	29	15	10	$\chi^2 = 14.1$ $P = 0.007$
Intermediate	30	13	8	
Consultation-liaison	10	14	23	

Discussion

Consultation-liaison relationships associated with more referrals

This analysis demonstrates that the type of relationship between the CMHT and general practice is significantly associated with numbers of referrals from primary care to CMHTs. When population factors, practice factors, and use of mental health services are included in the analysis the consultation-liaison style of relationship remains as a significant factor explaining the variation between practices in their rates of referral.

The models in Table 4 indicate that the practice locality, alongside the age and ethnic composition of the practice population, has a strong influence on referral rates. This may reflect important differences in organisation. It was notable that the UPA score, as a marker of social deprivation, was not associated with referrals. East London has uniformly high rates of social deprivation and it is possible that this lack of variability might mask important associations. Other studies outside London have shown associations between psychiatric utilisation rates and census-derived measures of social deprivation.¹⁹

Our results suggest that to encourage the onward referral of patients with serious mental illness, including some of the 25% with psychotic disorders who at present are managed solely by their GP, it is important to have a facilitating relationship between the CMHT and the general practice. Where this is present there will be a greater flow of referrals and a more permeable interface between the two teams.

Variation in service delivery by CMHTs

The national service framework for mental health services promotes equity of access to mental health services between populations.⁹ While it is well established that referral rates between general practices show considerable variability for many conditions,²⁰ it may be thought that community services provide greater uniformity of practice. This study suggests otherwise. We identified major differences in the working practices of teams that were captured quantitatively by measuring the numbers and sources of referrals and by the proportion of the adult population seen annually. Variation was present both between and within geographical

localities. Some teams were seen by GPs to be 'responsive', taking referrals from many sources and brokering services from other agencies. Others were seen as either 'obstructive' or 'mysterious', with tightly-defined referral criteria. This variation in team approach contributed to the confusion that GPs experienced around referral decisions and benefits to patients, described in the qualitative interviews that formed a separate part of this study.²¹

Identification of indicators for team variability is important. Using this evidence it should be possible for commissioners and clinicians to negotiate a CMHT working style which best suits the mental health needs of the local population and general practices. Evidence suggests that, alongside long-term work with those in the care programme approach, this should include a 'brokerage' role, advising and providing onward referral to other agencies and assessment and short-term work for those with less severe needs. Resource limitations may be constraining but much can be achieved by a shift in attitude and relationship between partners in mental health provision.

Practice variation

Observational studies on general practices frequently observe differences in performance related to practice size and organisation. Table 3 indicates that larger practices have better working relationships with CMHTs, more patients on antipsychotic medication, and refer more cases requiring long-term input to CMHTs. These practices also have significantly lower psychiatric inpatient and outpatient utilisation rates but greater use of primary care psychology services. It may be that small practices with less access to psychology services are constrained into using psychiatric outpatients. Expansion of primary care clinical psychology services may be a cost-effective method of supporting practices in their management of complex but non-psychotic cases, reducing avoidable referrals to psychiatric departments, and promoting appropriate onward referrals to CMHTs.

Within an inner-city environment with overlapping practice catchment areas, the distribution of people with serious mental illness between practices may not be uniform. Using daily defined doses of antipsychotic medication as a measure of the distribution of individuals with serious mental illness, our results suggest that larger practices have signifi-

Table 4. Multivariate associations between referral rates to CMHTs and population, practice, and psychiatric service use in 147 practices in east London.

	All referrals — CMHTs		Short-term referrals — CMHTs		Long-term referrals — CMHTs	
	β -coefficient (95% CI)	P-value	β -coefficient (95% CI)	P-value	β -coefficient (95% CI)	P-value
Included at first stage						
Practice locality: Newham	10.15 (0.73 to 10.56)	<0.0001	0.38 (0.09 to 0.67)	0.01	0.53 (0.22 to 0.85)	<0.001
Practice locality: Tower Hamlets	0.79 (0.51 to 10.07)	<0.0001	0.56 (0.37 to 0.76)	<0.0001	0.25 (0.04 to 0.46)	<0.02
Mean age of practice population	-0.04 (-0.09 to 0.01)	0.10	-0.04 (-0.07 to 0.01)	0.05	0.0002 (-0.04 to 0.04)	0.98
% Asians on practice list	-0.01 (-0.01 to -0.001)	0.01	-0.003 (-0.006 to 0.0004)	0.02	-0.002 (-0.01 to 0.001)	0.11
List size/full-time equivalent GP	-0.00001 (-0.0001 to -0.00009)	0.74	0.00002 (-0.00005 to 0.00001)	0.5	-50.30 (-0.0001 to 0.0001)	0.91
Practice manager	-0.12 (-0.31 to 0.07)	0.22	-0.06 (-0.19 to 0.07)	0.3	-0.14 (-0.29 to 0.002)	0.05
Training practice	0.12 (-0.07 to 0.36)	0.22	0.13 (0.0001 to 0.27)	0.05	0.08 (-0.07 to 0.23)	0.31
Cytology screening	0.01 (0.01 to 0.02)	0.004	0.01 (0.001 to 0.01)	0.11	0.01 (0.01 to 0.02)	0.001
Annual daily defined doses of antipsychotic medication/1000 population	0.03 (-0.05 to 0.11)	0.48	0.04 (-0.02 to 0.09)	0.24	0.05 (-0.01 to 0.12)	0.11
		Adjusted R ² = 35%		Adjusted R ² = 45%		Adjusted R ² = 27%
Included at second stage						
Psychology referrals	(not included)		0.18 (0.05 to 0.31)	0.006		
CMHT type: % of adult population seen annually			0.53 (0.22 to 0.84)	0.001	0.42 (0.08 to 0.75)	0.02
GP view: consultation-liaison relationship between teams			0.22 (0.10 to 0.34)	<0.001	0.16 (0.03 to 0.29)	0.02
Final models						
		Adjusted R ² = 47%, constant = 0.131, F = 12.7, P < 0.0001		Adjusted R ² = 54%, constant = 0.237, F = 15.16, P < 0.0001		Adjusted R ² = 38%, constant = 0.13, F = 7.53, P < 0.0001

cantly greater numbers of patients on antipsychotic medication than small practices. This needs further investigation. Identifying the practice distribution of patients with serious mental illness is important so that adequate support from specialist mental health services can be accurately targeted.

Policy implications

Unless CMHTs and general practices engage together, well co-ordinated management of patients with serious mental illness is unlikely to occur. To achieve this a number of hurdles will have to be surmounted. These include a negotiated agreement between CMHTs, GPs, and commissioners on the roles, skills, access, and activities of CMHTs. This study also suggests there needs to be active promotion of a consultation-liaison working relationship between teams to support the onward referral of patients who are likely to benefit from CMHT skills.

In the absence of better indicators this study has used referral rates as a proxy for patient outcomes. Until robust markers of outcomes for patients with serious mental illness are developed, which can be used in the primary care setting, we will remain uncertain about the service configuration that is truly in the best interests of patients.

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