Comparison of community based service with hospital based service for people with acute, severe psychiatric illness

C Dean, J Phillips, E M Gadd, M Joseph, S England

Abstract

***Objective*—To compare the burden on relatives and outcome of people treated for severe acute psychiatric illness by a community service and a traditional hospital based service.**

***Design*—Follow up of patients aged 16-65 who required admission to hospital or home treatment for psychiatric illness during January 1990 to February 1991.**

***Setting*—Two Birmingham electoral wards, Sparkbrook and Small Heath; Sparkbrook has a community based service and Small Heath a traditional hospital based service.**

***Subjects*—69 patients from Sparkbrook and 55 from Small Heath.**

***Main outcome measures*—Scores on present state examination, social behaviour assessment schedule, and general health questionnaire.**

***Results*—24 (35%) of Sparkbrook patients received some treatment in hospital during the initial episodes. Relatives of Sparkbrook patients were less distressed by their burden at the initial assessment than relatives of Small Heath patients (mean score 0·11 *v* 0·29, $p<0·01$). Relatives were also more satisfied with the support they received and the treatment received by patients. More patients from Sparkbrook than Small Heath were in contact with a psychiatrist (81% (95% confidence interval 71% to 91%) *v* 62% (44% to 68%)) and community nurse (56% (44% to 68%) *v* 14% (13% to 24%)) one year after the initial episode. Sparkbrook patients spent significantly fewer days in hospital during the initial episode (8 days *v* 59 days) and the first year (20·6 *v* 67·9 days).**

***Conclusion*—The community based service is as effective as the hospital based service and is preferred by relatives. It is more effective in keeping people in long term contact with psychiatrists.**

Introduction

Research over the past 30 years has shown that most people with acute psychiatric illness can be treated in the community rather than in hospital. Early studies in countries other than the United Kingdom showed improved outcomes in the community treated groups for measures of symptoms, social functioning, use of psychiatric beds, and patients' and relatives' satisfaction with provision of service.[1] No studies have found hospital care to be better for any variable.[2]

Recent research in south Southwark, London, confirmed the feasibility of community treatment; although 77% of the home care group were admitted to hospital in the first three months of the study use of beds was reduced by 80%, with a non-significant trend for improved clinical and social outcome with home care.[2] Although initial costs of the service were high, after a year large savings in costs of direct treatment were shown for home care over hospital care.[3] Relatives of patients receiving home care reported greater satisfaction, although few were interviewed. Another London based study of an early intervention community service also showed decreased use of beds and significantly greater patient satisfaction, although the patients seemed less ill than in south Southwark—only 31% of the standard hospital care group required admission.[4]

Concern has been expressed that community based care may increase the burden on the family. Research into community treatment has addressed this issue only superficially and with a wide variety of measures. Although no study has indicated increased burden, either subjective or objective, on carers, none of the measures of burden has been very satisfactory; Pai and Roberts used a single global measure,[5] Reynolds and Hoult used a single measure of subjective burden,[6] and Test and Stein assessed subjective burden from a global assessment made by the rater.[7]

All the research studies have excluded people with primary diagnoses of alcohol or drug dependence and organic brain syndromes and have obtained favourable staff to patient ratios by limiting the numbers recruited.[2 8] Our report of the Sparkbrook home treatment service[9] was the first since Grad and Sainsbury[10] to examine home care in the context of a total psychiatric service in Great Britain.

We report here a comparison over one year of the Sparkbrook community service and the traditional hospital based service in the neighbouring electoral ward of Small Heath.

Subjects and methods

Small Heath is served by a different health authority from Sparkbrook but has similar demographic characteristics. The population of Sparkbrook is 25725, with 50·5% of people from New Commonwealth or Pakistan, compared with 32070, with 43% of people from New Commonwealth or Pakistan, in Small Heath (1981 census). The Department of Environment figures for social deprivation show that 56% of the population in Small Heath were among the worst 2·5% in England and Wales compared with 76% in Sparkbrook (Jarman score +52·7 in Small Heath *v* +62 Sparkbrook; unemployment in October 1991 22·8% *v* 30%).

Details about the community service in Sparkbrook have been reported previously.[9 11] In brief the service is provided from a resource centre in the centre of the locality. It is the base for all social services and health services staff, and they provide all the services to the locality apart from the six inpatient beds (which are used for acute admissions and rehabilitation), which have different nursing staff but the same consultant and social workers. The centre provides outpatient care and day treatment on a sessional basis as well as a drop in cafe for people with long term disability. There is open referral for people known to the service and a home treatment is available instead of inpatient care, with 24 hour availability of staff. Leisure activities are provided at the centre and in the community, and a community worker is dedicated to finding employment for the users. Many of the staff speak Asian languages and many of the centre's sessions are geared towards Asian or Afro-Caribbean users. There is a policy of "assertive outreach" for people who are particularly

Department of Psychiatry, Birmingham University, Birmingham
C Dean, *senior lecturer*
J Phillips, *research associate*
E M Gadd, *senior research fellow*

Main Street Resource Centre, Birmingham
M Joseph, *registrar*

Highcroft Hospital, Birmingham
S England, *registrar*

Correspondence to:
Dr C Dean, Centre for Mental Health Services Development, King's College, London W8 7AH.

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at risk. The centre gives help and advice on finance and housing and there are facilities for bathing and laundry. Consumer satisfaction is continuously assessed and the services are reviewed every six months so that they remain responsive to the needs of users.

The service in Small Heath is based in an acute unit (12-14 beds) in a large psychiatric hospital with access to a day hospital based at the hospital, a rehabilitation service with short and long term beds and a day hospital, and two community psychiatric nurses.

METHODS

The comprehensive community service had been established for three years at the start of this study in January 1990. We studied all people aged 16-65 living in Sparkbrook or Small Heath who had an acute episode of illness serious enough to result in admission to hospital during January 1990 to February 1991. The criteria used to define serious illness were that the person was a risk to himself or herself or others and required 24 hour availability of specialty services.

We obtained consent from all patients to interview them and their nearest relative or friend.[12] The patients and their nearest relative were then assessed on several occasions. The present state examination was used at the initial assessment within three days of admission to treatment and 12 months after entry to the study.[13] The syndrome checklist was also completed on the basis of the symptoms recorded in the medical notes at the time of admission. For patients who only spoke an Asian language the World Health Organisation's Urdu or Hindi versions of the present state examination were used by one of the interviewers (MJ). If the patient spoke another language the questionnaire was translated into the appropriate language by a nurse, who acted as interpreter. The Morningside rehabilitation scale was also used at the initial assessment.[14] This has four subscales measuring dependency, activity levels, social integration, and current symptoms or behaviour. It was completed once a week for six weeks by JP after consulting nurses' notes and weekly meetings with nurses giving home and inpatient treatment. The comprehensive psychiatric rating scale was completed weekly for four weeks.[15]

A detailed burden interview, the social behaviour assessment schedule,[12] was administered to relatives three times (within 10 days of patient's admission, at one month, and at one year) by JP, who could not be blind to the group the relatives belonged to as he visited them at home. The schedule assesses the objective burden and the distress experienced in the four weeks before the interview. The main subscales are the patient's behaviour (18 symptoms and behaviour patterns), social performance (12 sections), objective burden on others (18 sections). In order to compare our results with those of Hoult *et al*[16] a burden self rated questionnaire and a satisfaction self rated questionnaire devised by them was administered on the same three occasions. A self rated questionnaire, the general health questionnaire, was also given to the nearest relative at each interview.[17]

Results

Sixty nine people were eligible for inclusion in the Sparkbrook sample and 55 in the Small Heath sample (table I). Four patients in each area refused an initial present state examination but agreed to take part in the study later. For the initial interview with relatives five patients from each area refused permission to contact the relatives; three people in the Sparkbrook sample and two in the Small Heath sample had no appropriate relatives to interview and three relatives in Sparkbrook and four in Small Heath refused to be interviewed. In addition there were three failed interviews in the Sparkbrook sample and two in the Small Heath sample. Fifty five (80%) relatives of the Sparkbrook sample were interviewed initially, 51 (74%) at one month, and 50 (72%) at one year. Forty two (76%) relatives of the Small Heath group were interviewed initially, 38 (68%) at one month, and 41 (74%) at one year.

TABLE I—*Baseline data characteristics for Sparkbrook and Small Heath service users*

	Sparkbrook (n=69)	Small Heath (n=55)
No (%) of men	30 (43)	26 (47)
Mean age (SD):		
Men	35·4 (10·8)	36·5 (12·1)
Women	36·1 (12·6)	35·8 (12·4)
Marital status (No (%)):		
Married	32 (46)	23 (42)
Single	24 (35)	20 (36)
Widowed, separated, or divorced	13 (19)	12 (22)
No (%) with Asian first language	19 (28)	12 (22)
Average No of previous admissions	1·78	2·13
No (%) with previous admissions	35 (51)	30 (54)
No (%) with previous compulsory admission	19 (28)	12 (22)

There were no differences between the two groups in terms of age, marital status, previous admissions to hospital or the number who had had compulsory admissions. There were no significant differences in ethnic origin or religion.

The mean length of illness before acceptance for treatment was shorter for Sparkbrook patients (21·5 days) than Small Heath patients (45·1 days), but the difference was not significant (Mann Whitney U test $z=-1·4415$; two tailed $p=0·14$). There was also a shorter time between when the informant first noticed the patient was ill and being seen by a professional (mean 16·1 days for Sparkbrook patients *v* 19·6 days for Small Heath $z=-1·7091$; two tailed $p=0·08$). There were fewer referrals from professionals in Sparkbrook than Small Heath (53 (77%) *v* 52 (94·5%)) and more from patients or relatives (16 (23%; 95% confidence interval 13% to 32%) *v* 3 (5·5%; 4·9% to 6·1%); $\chi^2=7·4$; $df=1$; $p<0·01$).

Twenty four (35%) of the Sparkbrook group received some inpatient treatment during their initial acute episode. The other 45 received all their treatment at home or at the resource centre. All the Small Heath sample received some inpatient treatment. The severity of illness initially as measured by the total present state examination score was the same in the two groups (table II). Fifty seven (88%; 95% confidence interval 80% to 96%) of the Sparkbrook group were classified as probable cases (index of definition (ID) 5[13] and above) compared with 36 (71%; 60% to 82%) of the Small Heath group ($\chi^2=5·36$, $p<0·05$). There were no differences between the diagnoses or the subscale scores in the two groups (table II).

TABLE II—*Present state examination scores and diagnosis, at the initial assessment in patients from Sparkbrook and Small Heath*

	Sparkbrook (n=69)*	Small Heath (n=55)*
Mean (SD) scores:		
Total	22·7 (13·3)	20·6 (15·2)
Delusional and hallucinatory	3·1 (4·6)	3·2 (5·2)
Behaviour and other syndromes	3·5 (3·6)	3·7 (4·8)
Specific neurotic syndromes	5·7 (5·5)	5·1 (5·2)
Non-specific neurotic syndromes	10·4 (7·5)	8·6 (8·1)
No (%) with diagnosis†:		
Schizophrenia	29 (42)	21 (38)
Affective	19 (28)	14 (25)
Paranoid state	5 (7)	5 (9)
Neuroses	11 (16)	5 (9)
Alcoholism	3 (4)	3 (5)
Anorexia nervosa	0	1 (2)
No illness	2 (3)	6 (11)

*Four people refused to be interviewed for present state examination.
†International Classification of Diseases, eighth revision.

The Sparkbrook and Small Heath groups were similar in terms of the three scales disturbed behaviour, objective burden, social performance on the social behaviour assessment schedule at initial assessment, one month, or one year. However, the relatives' distress due to objective burden at the initial interview was significantly less in the Sparkbrook group and distress due to the social performance of the person in treatment was less in the Sparkbrook group at one month (table III). More of the relatives of the Sparkbrook patients were very satisfied with the treatment the patient received and fewer were dissatisfied than the relatives of the Small Heath patients (table IV). The relatives of Sparkbrook patients were also more satisfied with the support and information they themselves received. The relatives of Sparkbrook patients who were admitted to hospital were less satisfied than those of patients who were treated entirely at home.

No differences were found in the scores on the Morningside scale between the two groups apart from the fact that the home treated group had significantly better social functioning at week two (mean (SD) score Sparkbrook 7·2 (4·85), Small Heath 3·28 (3·3) $t=1·87$; $p<0·05$). Social and psychiatric state a year after starting treatment were similar in the Sparkbrook and Small Heath groups, although both groups improved; there was no difference in total present state examination score (mean (SD) score 10·03 (11·16) for Sparkbrook and 9·61 (13·77) for Small Heath), present state examination subscale scores or diagnosis (53% of Sparkbrook and 56% of Small Heath subjects received no diagnosis at a year), the Morningside scale, or the burden scores on the social behaviour assessment schedule.

There was no difference in the general health questionnaire score of the relatives between the two groups at the initial assessment, one month, or one year. However, the morbidity was high in both groups initially (21 (49%) Sparkbrook and 21 (57%) Small Heath relatives were probable cases) and at one year (20 (41%) in Sparkbrook and 15 (42%) in Small Heath).

One month after the start of treatment relatives of the Sparkbrook patients had significantly more meetings with a psychiatric nurse than the Small Heath group (mean 6·1 (8·4) *v* 2·7 (3·9); $z=1·93$, $p<0·05$) whereas the Small Heath relatives had significantly more telephone contact with a nurse than the Sparkbrook group (2·02 (5·7) calls in Small Heath *v* 0·36 (0·98) in Sparkbrook group; $z=-2·05$, $p<0·05$). At one year there was still a trend for Sparkbrook relatives to have had more face to face contact in the previous four weeks (mean 0·27 *v* 0·023; $z=-1·69$ two tailed, $p=0·09$).

At the one year assessment 53 (81%; 95% confidence interval 71% to 91%) Sparkbrook patients were still in contact with the psychiatrist compared with 34 (62%; 49% to 75%) of the Small Heath group ($\chi^2=5·8$, df=1; $p<0·02$). Thirty seven (56%; 44% to 68%) of the Sparkbrook patients were in contact with a community nurse compared with eight (14·5%; 13% to 24%) of the Small Heath group ($\chi^2=22$, df=1; $p<0·001$). The Sparkbrook group had attended more outpatient appointments since discharge from the initial episode than the Small Heath group (mean 7·2 (4·9) *v* 3·3 (3·1); $z=-4·6$, $p<0·001$).

The Sparkbrook group had an average of 8·3 (SD 19·88) days in hospital in the first admission (this included two patients who were admitted elsewhere) compared with 58·7 (95·1) days in the Small Heath group ($z-7·08$, $p<0·001$). If the number of days in hospital and home treatment were added together the total length of treatment in Sparkbrook was a mean of 35·4 days compared with 58·8 (95·1) days in hospital in Small Heath ($z=-1·42$, two tailed $p=0·16$). The Sparkbrook patients had an average of 20·6 (53·7) days inpatient treatment during the first year compared with 67·9 (98·7) days in the Small Heath group (mean ranks $z=-6·7$, $p<0·001$). The relapse rate in the two groups in the first year was similar; 51 (76%) of Sparkbrook patients did not have either further home treatment or hospital treatment in the year compared with 40 (73%) of the Small Heath patients. Multivariate analysis with south Asian origin as a covariate did not affect the significant difference in burden and satisfaction scores between the Sparkbrook and Small Heath samples.

TABLE III—*Relatives' distress rated on social behaviour assessment schedule*

	Sparkbrook adjusted score		Small Heath adjusted score		Median (95% confidence interval) difference between Sparkbrook and Small Heath	Mann Whitney test *z* score
	Mean (SD)	Median	Mean (SD)	Median		
Distress due to objective burden:						
Initial	0·24 (0·29)	0·11	0·36 (0·30)	0·29	0·18 (0·1 to −0·26)	−2·4**
1 Month	0·17 (0·21)	0·11	0·26 (0·30)	0·18	0·07 (−0·02 to −0·15)	−1·24*
1 Year	0·12 (0·18)	0·03	0·18 (0·29)	0	0·15 (0·09 to 0·21)	−0·01
Distress due to social performance:						
Initial	0·32 (0·41)	0·17	0·40 (0·41)	0·29	0·23 (0·09 to 0·36)	−1·03
1 Month	0·16 (0·31)	0	0·26 (0·38)	0·09	0·09 (0·01 to 0·17)	−1·96**
1 Year	0·12 (0·23)	0	0·16 (0·3)	0	0·12 (0·06 to 0·18)	−0·67

*$p<0·1$, **$p<0·01$.

Discussion

We have compared the outcome in patients receiving a comprehensive community service for acute psychiatric illness with that in patients admitted to hospital in the neighbouring electoral ward. The criteria for admission to the study were clinical and not imposed by us. This could have caused uneven distribution of severity of illness between the groups, but at the start of the study the groups had the same severity of illness, the same subscale present state examination scores, and the same diagnostic spread. Fewer people were admitted to hospital or home treatment in Sparkbrook during the study than in the years before home treatment started. There was no difference between the two groups in terms of clinical and social outcome.

TABLE IV—*Satisfaction of relatives with psychiatric services. Values are numbers of patients (percentage; 95% confidence interval)*

	At 1 month				At 1 year			
	Sparkbrook				Sparkbrook			
Satisfaction of relatives	Home treatment only	Home and hospital treatment	Total	Small Heath	Home treatment only	Home and hospital treatment	Total	Small Heath
Treatment received by patients:								
Very satisfied	21	1	22 (49; 34 to 63)	9 (24; 10 to 36)**	23	3	26 (56; 42 to 70)	18 (46; 30 to 62)
Fairly satisfied	13	5	18 (40; 26 to 54)	18 (47; 35 to 59)	8	5	13 (28; 15 to 41)	10 (26; 12 to 40)
Dissatisfied	1	4	5 (11; 1·2 to 21)	11 (29; 14 to 43)	5	2	7 (15; 5 to 25)	11 (28; 14 to 42)
Support and information for relatives:								
Enough	27	0	27 (55; 41 to 69)	16 (48; 32 to 64)†	30	4	34 (68; 55 to 81)	18 (46; 30 to 62)*
Not enough	10	12	22 (45; 31 to 59)	22 (51; 35 to 64)	9	5	16 (32; 19 to 45)	21 (54; 38 to 69)

*$\chi^2=4·3$, df=1; $p<0·05$; **$\chi^2=7·22$, df=2; $p<0·05$; †$\chi^2=1·45$; NS.

BURDEN OF RELATIVES

Although there was no difference in the objective burden to relatives between the two groups, the carers of the Sparkbrook patients experienced less distress. This may have been because they had more face to face contact with the nursing staff. Interestingly, the relatives of the Sparkbrook patients were less distressed at the initial interview, which took place within 10 days of admission to treatment and covered the previous month. This may have been because the Sparkbrook patients were admitted to home or hospital treatment more quickly after the carer first noticed that the patient was ill. The open access of the Sparkbrook service for people with serious disability and quick response to crisis could also explain why the carers were less distressed at the initial interview. It is not clear whether it is open access and rapid response that is appreciated or the availability of treatment at home.

Relatives of the Sparkbrook patients were more satisfied with the service for patients and the amount of support they received than relatives in Small Heath. This may be because most (80%) of the Sparkbrook patients were still in contact with their psychiatrist and over 50% were still being seen by a community psychiatric nurse at one year follow up. The assertive outreach aspect of the service is important in keeping contact with patients but the fact that users know that they will not necessarily be admitted to hospital if they relapse may also help.

Both Asian and non-Asian families were more satisfied with the Sparkbrook service. Home treatment was initially set up to meet the needs of Asians but it is popular with non-Asian families as well. The similar services in south Southwark and Paddington also report greater satisfaction by relatives and patients.

SUCCESS OF TREATMENT

The length of treatment, when home and hospital treatment were summed in Sparkbrook, was not significantly different from that in Small Heath, indicating that the rate of recovery was similar. Being treated at home did not increase the risk of relapse during the year but neither did intensive follow up reduce the rate of relapse. Even when a comprehensive community service with a home treatment alternative is available, around one third of patients still require admission to an acute inpatient unit.

The type of service provided in Sparkbrook is successful in maintaining contact with people with serious disability and is appreciated by relatives. So far only services in inner city areas have been reported and similar services need to be evaluated in rural areas. Further research needs to be done to establish which elements of a comprehensive community service are successful and valued by users and their relatives and which people would benefit from each package of care together with a cost-benefit analysis.

Policy implications

- Patients and their relatives prefer to be treated for acute mental illness at home rather than in hospital
- Several studies have consistently found that a community based service with the option of assessment and treatment at home reduces use of acute beds by 80%
- Even with a comprehensive community service 30-40% of people with an episode of severe acute mental illness require admission to hospital at some time during their illness
- The distress of relatives is less when the patient is treated at home rather than in hospital
- People with severe mental illness are more likely to stay in contact with a comprehensive community based service than with a predominantly hospital based service

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