

Research papers

Costs and benefits of a pilot shared care register between primary and secondary healthcare for patients with psychotic disorders

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ABSTRACT

Aims This pilot study in a three-GP practice investigated whether using a shared care register (SCR) of psychosis patients ($n = 45$), updated at bimonthly liaison meetings with a community psychiatrist would (i) enhance GP involvement in severe mental illness (SMI) patients and (ii) improve primary care links with the community mental health team (CMHT).

Method A GP questionnaire was used to rate study practice GPs and a matched sample of comparison GPs with no SCRs.

Results The GP who attended the liaison meetings gave high ratings of satisfaction on communication with the CMHT and had a higher level of SMI involvement than other GPs in the study. His practice colleagues were no more involved with SMI patients and were less satisfied than the comparison

GPs. There was no discernible impact of the SCR on patient care for any GPs. Although inexpensive, the advantages of the SCR were only gained by the GP directly involved in the register meetings. The mean cost of the SCR was £59 per patient per year.

Conclusions The benefits conferred by this model of consultation–liaison appear limited to the primary care staff directly involved and half of the local GPs consulted do not want direct involvement in such registers. Although a larger study involving more GP practices is needed to fully examine its value, from the present findings the model may have only partial applicability at a population level.

Keywords: community mental health team, primary care, severe mental illness, shared care register

Introduction

Most patients with severe mental illness (SMI) are registered with a general practitioner (GP), and a significant minority receive all their care in general practice even in areas where community mental health teams (CMHTs) are well developed.^{1,2} GP involvement in the care of SMI may have significant advantages: GP attendance may be seen as less stigmatising and more convenient by patients and families; based on previous knowledge of the patient, GPs are in a good position to identify changes in mental state; and as a focal point for information, GPs may be best placed to co-ordinate the efforts of the various statutory (e.g. social services) and non-statutory (e.g. charitable) agencies involved in community care.

However while attending more frequently than average, patients with SMI tend to consult their GP with physical rather than mental health problems, and may receive little specific management for the index disorder.^{3,4} Also GPs may not see mental healthcare as their responsibility. Bindman *et al.*, in a South London survey, found 70% of GPs (and 60% of SMI patients) perceived the GP role as providing only physical care and repeat prescriptions of psychotropics.⁵

The consultation–liaison (CL) approach to shared care employing regular face-to-face discussions between GPs and psychiatrists has emerged as the most acceptable and potentially most cost-effective model for enhancing mental healthcare in primary practice.⁶ It has evolved from short informal meetings to more elaborate, interventions based on chronic disease management models (also employed for physical illnesses such as diabetes and asthma), involving educational material, structured feedback and changes to primary care procedures such as extending consultation times. Bower and Gask point out that these more complex initiatives may neglect the importance of relationship building between key professionals as a factor for effective CL and that they may prove difficult to implement outside research studies.⁷

Maintaining joint records of patients cared for by primary and secondary care is a recognised format for shared care and has been widely employed for physical illnesses such as diabetes.⁸ The form the record takes varies from setting to setting as do the procedures around updating the records and sharing information. This pilot study aimed to evaluate a primary/secondary shared care register (SCR) of patients with psychotic disorders (the most severe forms of SMI), combined with regular CL meetings as one pragmatic application of the CL model. The SCR/liaison meeting format was chosen as it was easy to establish, allowed relationship building between key professionals and had potential for wide implementation.

The anticipated benefits of the SCR were:

- for professionals – enhanced communication of clinical information and patient care plans, greater understanding of each other's role and practice, stronger working links and dissemination of clinical management skills in both directions
- for patients – consistent advice and management from GP and CMHT, improved detection and management of physical health problems, improved recognition and management of relapse of mental illness, improved identification of patients 'lost to follow-up'.

The anticipated costs were:

- for professionals – time and resources expended by staff preparing and updating the register; time travelling to, and attending meetings
- for patients – patients may not welcome close liaison between their GP and their psychiatrist particularly if they do not fully accept they have a mental illness. In the survey by Bindman *et al.*, 50% of SMI patients didn't want GP involvement in their mental healthcare.⁵

Method

Setting

The study took place in a group practice (three full-time GPs) with a high SMI caseload situated in Central Croydon, South London. Ethical approval was secured through The Institute of Psychiatry, London. The GP practice has responsibility for two 24-hour staffed mental health hostels. The sector CMHT is averagely resourced (two part-time consultants, four community psychiatric nurses, two senior house officers, a specialist registrar, two social workers and a part-time psychologist), with a high SMI caseload compared with other Croydon sectors. The Mental Illness Needs Index (MINI) score for the greater Croydon borough is close to the national average.

The shared care register (SCR) and liaison meetings

At the start of the study, shared patients with a working diagnosis of any psychotic disorder (see Table 1 for categories) were identified by computer searches of GP files and CMHT records and by direct review of case files. From this patient list an SCR was generated using

Table 1 Demographic and clinical characteristics of the shared care register and comparison cases

Characteristic		Shared care register cases (<i>n</i> = 44) <i>n</i> (%)	Comparison cases (<i>n</i> = 38) <i>n</i> (%)
Primary psychiatric diagnosis	Schizophrenia	35 (77)	25 (66)
	Schizoaffective disorder	3 (7)	4 (10)
	Bipolar disorder	7 (16)	8 (21)
	Depression	0	1 (3)
Gender (male)	24 (53)	28 (62)	
Mean age (SD)	46 (12)	43 (13)	
Ethnic group	White	37 (84)	25 (65)
	Afro-Caribbean	2 (5)	8 (21)
	Asian Indian	1 (2)	4 (10)
	Arabic	2 (5)	0
	Other	2 (5)	1 (3)
	Missing data	1	
Marital status	Single	30 (73)	16 (64)
	Married	9 (22)	5 (20)
	Divorced	2 (5)	4 (16)
	Missing data	4	13
Care Programme Approach (CPA) level	Standard	17 (38)	17 (38)
	Enhanced	28 (62)	28 (62)
Type of community housing	Independent	27 (60)	30 (79)
	Supported hostel	18 (40)	8 (21)

standard word processing software with: name, hospital number, diagnosis, last contact with GP, last contact with psychiatrist and/or other member of the CMHT, medication and who prescribes (GP or psychiatrist), date of last CPA (care planning review), most recent blood tests and a brief statement about current mental state and identified social or health needs.

Liaison meetings were held every two to three months over a two-year period, attended by the sector community consultant psychiatrist (GT), the liaison GP (WB) and a junior CMHT doctor (either senior house officer, or specialist registrar). Each patient was discussed in turn, names were updated to the register and necessary decisions were made about future management. The SCR was updated on computer by the CMHT prior to these meetings and hard copies brought to the meeting. Further amendments based on the discussions were made afterwards. The liaison GP consulted primary care patient files prior to the meeting and reported areas of concern. Where indicated he made entries on the patients' case record after each meeting highlighting areas of concern or identifying tasks. These entries were the main route

of dissemination of information to the other two practice GPs.

GP satisfaction questionnaire

For each patient on the SCR, the practice GP most involved with that patient was interviewed using the questionnaire piloted by Bindman *et al.*⁵ This examines for a particular patient: GP satisfaction with mental health services (using a four-point scale), their knowledge of the patient's mental healthcare, their level of involvement in the patient's mental healthcare and recent communication from the CMHT about the patient (see Table 2). The GPs for a comparison sample of patients with psychotic disorders were interviewed using the same questionnaire and in addition were asked whether they would welcome the introduction of an SCR either with or without liaison meetings. The comparison sample of patients was matched for Care Programme Approach level (enhanced or standard), but was otherwise randomly chosen from the CMHT's own patient register. This involved removing all SCR

Table 2 Survey of GP satisfaction, knowledge and severe mental illness care involvement for each patient

	Shared care register practice GPs		13 Non-shared care register GPs (NGP, <i>n</i> = 38) %
	Liaison GP (LGP, <i>n</i> = 7) %	Other GPs (2) who did not attend liaison meets (OGP, <i>n</i> = 17) %	
GPs' satisfaction (% very or fairly satisfied) with:			
Information from psychiatric team about patient	82	65	59
Ease of getting in touch with team to discuss patient	96	47	58
Clarity of role in patients' management	93	35	68
Support from psychiatric services in that role	93	29	71
GPs' knowledge of patient's care by mental health services (% correct)			
Psychiatric diagnosis	96	94	92
Current psychotropic medication	78	65	71
Name of keyworker	67	35	29
Responsible psychiatrist	96	100	92
Contacts with team in preceding six months (excluding SCR liaison meetings)			
Written	78	88	61
Telephone	4	24	5
GPs' perceived role			
'High involvement' (more than physical care and repeat psychotropic scripts)	85	47	55
Care rated as 'shared' (as opposed to principally CMHT or GP)	78	47	47
% of non-SCR GPs who would welcome an SCR			
With meetings			54
Without meetings			85

n = number of patients rated using GP questionnaire, Bindman *et al.*, 1997⁵

patients from the CMHT's standard and enhanced CPA registers. A computer statistics package was used to randomly reorder the remaining lists by generating a random number series. The appropriate number of comparison patients were taken from the top of the reordered lists and their GPs were identified from computer records. Interviews were conducted by telephone or face-to-face. GPs were encouraged to refer to any relevant material to hand (usually computerised patient records).

Contacts and communication between GP, CMHT and SCR patients

We aimed to establish whether the SCR/CL process had an impact on the frequency and nature of patient contact with primary or secondary care, or on communication between the agencies outside the liaison meetings. Informed consent was sought from SCR patients for review of CMHT and GP case files. The number and nature of contacts by consenting

SCR patients with the CMHT or the GP practice were recorded for the first year of the initiative and compared with the year before the SCR was put in place. Similarly communication in any form about the patient between GP and CMHT was also examined.

Results

Social and clinical characteristics

There were initially 45 patients in the SCR sample but one patient requested to be withdrawn from the study. GP interviews were not performed for seven of the comparison patients (leaving 38), as they were not currently registered with a GP or the identity of their GP could not be established. Table 1 details the demographic and clinical characteristics of the SCR sample and the comparison cases. The profile is typical of most CMHT psychosis caseloads: middle aged, largely single, a roughly even gender mix with a majority suffering from schizophrenia. The SCR sample was somewhat less ethnically diverse than the comparison sample and had a higher proportion living in supported hostel accommodation (the differences were of borderline statistical significance: ethnicity, $\chi^2 = 9.67$, $df = 4$, $P = 0.05$; housing, $\chi^2 = 3.44$, $df = 1$, $P = 0.06$).

GP satisfaction with the SCR

The SCR liaison GP (LGP) was highly satisfied with mental health services on all the satisfaction parameters, while other SCR practice GPs (OGPs) rated themselves as much less satisfied with the SCR (see Table 2). Ninety-three percent of the mean scores for the four satisfaction items were in the fairly or very satisfied range for the LGP, 35% for the OGP, compared with 68% for the GPs in practices with no SCR (NGPs). Pairwise, all these differences were significant (LGP versus OGP: $\chi^2 = 5.5$, $df = 1$, $P = 0.02$; LGP versus NGPs $\chi^2 = 16.5$, $df = 1$, $P < 0.001$; NGPs versus OGP $\chi^2 = 5.3$, $df = 1$, $P = 0.02$). Importantly 71% of the mean satisfaction scores for the SCR practice as a whole (LGP/OGP) were in the satisfied range which was not significantly different from the NGPs' ratings ($\chi^2 = 0.4$, $df = 1$, $P = 0.8$).

Knowledge about mental healthcare

On three of the four main knowledge questions the OGP were no better informed than the NGPs (see Table 2). The LGP was significantly more aware of the identity of the patients' keyworker than all other GPs.

Communication with CMHT

Only one episode of face-to-face contact between GP and CMHT staff was reported by any GP outside of the

SCR liaison meetings (by the LGP at a Mental Health Act assessment). All GPs in the SCR practice received significantly more written communication than the NGPs ($\chi^2 = 4.6$, $df = 1$, $P = 0.03$). The OGP reported significantly more telephone contact with the CMHT than the other GPs ($\chi^2 = 4$, $df = 1$, $P = 0.04$).

Level of clinical involvement

The LGP reported a significantly higher level of mental health involvement and a significantly greater percentage of shared patients than either other GP group (versus NGPs, $\chi^2 = 6.5$, $df = 1$, $P = 0.01$; versus OGP, $\chi^2 = 7.3$, $df = 1$, $P = 0.007$). We found that 85% of CGPs would welcome an SCR maintained by the CMHT, but only about half (54%) were willing to attend the associated liaison meetings (see Table 2).

Changes in communication before and after establishing the SCR

Only 22 of 45 SCR patients gave written informed consent to have their CMHT and GP case files examined. Comparing consenters with non-consenters no significant difference was found for age, gender, ethnicity, marital status, diagnosis or CPA level, but consenting patients were significantly more likely to be resident in a hostel ($\chi^2 = 6.5$, $df = 1$, $P = 0.01$) perhaps reflecting a lower level of suspicion among patients in daily contact with professional carers. From a detailed analysis comparing all recorded contacts between SCR patients and a GP or CMHT for the year before and after the SCR's introduction, no significant differences were found with the means being very similar for each time period (see Table 3). The SCR does appear to have had a positive impact on written communication from the CMHT to GPs which increased significantly following the SCR's commencement (see Table 3).

Costs

Using unit costs from Netten and Curtis, the costs of the SCR were calculated.⁹ Costings of staff time excludes the cost of qualification/training and are: GP £60 per hour, senior house officer (SHO) £21 per hour, specialist registrar (SPR) £25 per hour and CMHT consultant £61 per hour. For the set-up phase and the first five months of the SCR, the CMHT SHO was responsible for the maintenance of the register. Subsequently the specialist registrar took over this role. A sensitivity analysis was undertaken to allow for variations in time spent by the GP and SHO/SPR working on the SCR outside the liaison meetings. Most staff involved with the SCR recorded their time commitment prospectively though for the early and set-up phases it was estimated retrospectively.

Table 3 Contacts between patient, GP and CMHT recorded in clinical case notes for the year before and the year after starting the shared care register

	Year pre-shared care register (1999/2000)	Year following shared care register (2000/2001)
	Mean per patient (SD)	Mean per patient (SD)
Patient CMHT contacts		
Any form (including telephone and written)	10.4 (10.0)	10.0 (8.4)
CPN	5.9 (8.5)	4.9 (8.1)
Medical (consultant psychiatrist, SPR, SHO)	4.3 (4.8)	4.5 (4.6)
Depot clinic	4.1 (7.9)	3.5 (7.6)
Home visits	4.1 (5.4)	4.2 (4.9)
Unscheduled/emergency reviews	0.6 (1.2)	0.3 (0.6)
CPAs	0.5 (0.5)	0.5 (0.8)
Missed appointments	0.4 (0.8)	0.2 (0.5)
Admissions	0.3 (0.6)	0.2 (0.6)
Patient GP contacts		
Any form (including telephone and written)	5.0 (5.6)	4.3 (5.4)
Presentation with physical complaint	3.7 (4.7)	2.7 (3.1)
Presentation with psychiatric complaint	0.8 (1.8)	0.9 (1.9)
Contacts where psychotropic drugs were altered	0.0	0.5 (2.3)
Prescription requests	0.5 (1.3)	0.7 (2.0)
Contacts between GP and CMHT (excluding SCR meetings)		
Written CMHT to GP	1.8 (2.4)*	3.1 (3.4)*
Written GP to CMHT	0.2 (0.4)	0.2 (0.7)
Telephone contacts	0.1 (0.4)	0.0
Face-to-face meetings	0.0	0.0

* Significant difference, mean 1.3 (95% CI 0.05 to 2.6) $t = 2.2$, $df = 21$, $P = 0.04$

Set-up costs, to first establish the SCR, were calculated as six hours of GP time and six hours of CMHT SHO time, to a total of £486 (£11 per patient). Running costs for the first year of the SCR operation were:

- preparation outside the liaison meeting (reviewing files and updating the SCR): GP mean 3½ hours (range 2½–5 hours), CMHT SHO/SPR mean 2½ hours (range 2–3 hours), for each meeting
- CL meetings (every two months): one hour for each of CMHT consultant, SHO/SPR and GP + 20 minutes travel for CMHT consultant and SHO/SPR, to a total of £2666 (lower limit £2102, upper limit £3229) each year. Annual cost per patient was £59 (range £47–£72).

Discussion

In this pilot evaluation the GP directly involved in the CL/SCR process rated greater satisfaction with mental health services, greater involvement in the mental

healthcare of SCR patients and was more aware of the identity of key CMHT staff than his other practice colleagues (OGPs) or than a comparison non-SCR GP sample (NGPs). This perhaps was to be expected. What was unexpected was the poor satisfaction ratings (lower than the NGPs) and low level of mental health-care involvement of the OGPs, despite their receiving significantly more written and telephone communication from the CMHT, and having updated information available following the liaison meetings. Taken as a whole, the SCR GPs were no more satisfied than the NGPs. It appears the only benefit to accrue from the SCR was to the GP who took direct part and some of this effect may in fact be due to the LGP (who selected himself for the task) being more committed to mental healthcare at the outset. The practice GPs who did not attend the SCR meetings had no opportunity for relationship building with the CMHT staff and for them the SCR may have seemed simply a paper exercise. This danger has been recently pointed out by Bower and Gask: relationship building is necessary (but not sufficient) to effect change in the management culture within primary practice.⁷

On reviewing these results the LGP concluded that:

- the SCR had produced the benefit that this group of patients had posed less of a clinical challenge than prior to the register
- however, there was a continuing need to take two hours to prepare for each SCR meeting which on balance was not worth the time investment
- he had considerable doubts that the model could be used routinely in other practices unless there was a named person in each practice who is keen to make it work, alongside the many other demands upon primary care staff.

Our conclusion is that the initiative did not have any discernible impact on patient care though the absence of direct measurements of patient's symptoms, functioning or satisfaction means that we cannot conclude other than indirectly that patient welfare was unaffected. Given that most CL studies have found little measurable changes in GP practice with SMI patients, our results are consistent with previous findings.^{10,11} The set-up and running costs of the initiative were not excessive, as the yearly per patient running cost was considerably less than a month's prescription of most atypical anti-psychotics. But even these costs may be excessive when balanced against the very modest overall gains identified.

The methodology used in this pilot study has limitations. Apart from low power (only one primary care practice was evaluated in this pilot study), the lack of baseline measurement of SCR GPs' satisfaction, knowledge and mental healthcare involvement prior to the intervention means our conclusions are indirect. Also our economic analysis does not take 'opportunity costs' into account (the costs incurred from professionals not being available for other tasks while involved in SCR work) and is in this respect limited. Although only 22 of the 45 SCR patients consented to the case note analysis of contacts with primary or secondary care we would argue that the non-significant findings would have been unaltered if all patients had consented as there are no trends within this analysis that might become significant with greater patient numbers (see Table 3) and consenters shared a very similar clinical and demographic profile to non-consenters. A larger study should involve several practices preferably randomised into SCR or comparison groups, include baseline GP measures and measures of the impact on patients (satisfaction, symptoms, functioning) and a comprehensive cost-benefit analysis taking account of opportunity costs.

Although a larger study is needed to fully examine its value, from the present findings the SCR model may have only partial applicability at a population level. Eighty-five percent of local GPs would welcome an SCR but only 54% would be willing to attend liaison

meetings. Since we have found that attendance, with proper preparation for the meetings, is essential to produce any benefit from an SCR, only half of local Croydon GPs can be expected to gain from SCRs.

What alternatives are there for routine settings, and if direct discussion (relationship building) is a key component, can this approach be streamlined even further? One alternative, as described by Midgley and colleagues, is to confine discussion to a few selected patients posing special problems at each CL meeting, rather than prepare and update an entire SCR.¹² These cases would then act as learning examples and also allow relationship building. Crucially, such meetings would need to apply to as many GPs as possible to engage the 50–70% of GPs with low SMI involvement.⁵ Such arrangements need future evaluation to assess their cost-effectiveness.

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