

Prospective study of trends in referral patterns in fundholding and non-fundholding practices in the Oxford region, 1990-4

Rebecca Surender, Jean Bradlow, Angela Coulter, Helen Doll, Sarah Stewart Brown

Abstract

Objective—To compare outpatient referral patterns in fundholding and non-fundholding practices before and after the NHS reforms in April 1991.

Design—Prospective collection of data on general practitioners' referrals to specialist outpatient clinics between June 1990 and January 1994 and detailed comparisons of three phases—October 1990 to March 1991 (phase 1), October 1991 to March 1992 (phase 2), and October 1993 to January 1994 (phase 3).

Setting—10 first wave fundholding practices and six non-fundholding practices in the Oxford region.

Subjects—Patients referred to consultant outpatient clinics.

Results—NHS referral rates increased in fundholding practices in phase 2 and phase 3 of the study by 8.1/1000 patients a year (95% confidence interval 5.7 to 10.5), an increase of 7.5% from phase 1 (107.3/1000) to phase 3 (115.4/1000). Non-fundholders' rates increased significantly, by 25.3/1000 patients (22.5-28.1), an increase of 26.6% from phase 1 (95.0/1000) to phase 3 (120.3/1000). The fundholders' referral rates to private clinics decreased by 8.8%, whereas those from non-fundholding practices increased by 12.2%. The proportion of referrals going outside district boundaries did not change significantly. Three of the four practices entering the third and fourth wave of fundholding increased their referral rates significantly in the year before becoming fundholders.

Conclusions—No evidence existed that budgetary pressures caused first wave fundholders to reduce referral rates, although the method of budget allocation may have encouraged general practitioners to inflate their referral rates in the preparatory year. Despite investment in new practice based facilities, no evidence yet exists that fundholding encourages a shift away from specialist care.

Introduction

General practice fundholding, now in its fifth year, continues to fuel controversy and debate in both academic and policy forums. Despite the increasing volume of literature and research on the subject, little consensus yet exists about the scheme's relative merits or impact.¹ One of the areas of speculation concerns the effect on referral decisions when practices have to pay for their patients' consultations with specialists.

Many assumed that fundholding would lead to a decrease in outpatient referrals, since the prepaid or fixed budget arrangement of the scheme means that whenever a medical service is not provided, the fundholding practice saves money. Thus there is a financial incentive to ration or limit referrals that are not strictly necessary. As it is well known that no consensus exists about the need for specialist inter-

vention in many cases,² it seemed likely that there was scope for fundholders to make savings in this area.

Another way in which fundholders could potentially make savings was by encouraging those patients with private health insurance to agree to be referred to private clinics, the costs of which could be claimed from insurance companies rather than the practice budget. Thus we might have expected to see an increase in private referrals once practices became fundholders.

A further reason for anticipating a reduction in NHS referral rates in the first year of holding a budget was the way in which the budgets were allocated. Fundholding budgets are calculated on a historical basis—that is, on the activity rates in the year before a practice becomes a fundholder. An incentive exists therefore for those intending to become fundholders to increase referral rates in the preparatory year to ensure that their budgets are large enough to allow savings in subsequent years.

The NHS reforms also introduced restrictions to the freedom of referral previously enjoyed by non-fundholding practices. Any referral from a non-fundholding practice to a hospital that is not covered by a contractual arrangement with the district health authority in which the practice is based was to be classified as "extra-contractual," requiring special permission from the health authority. Concern was widespread that this would result in non-fundholding practices losing their freedom to refer outside the boundaries of their local districts. The opportunity to maintain their freedom of referral was one of the commonest reasons given by general practitioners for joining the fundholding scheme.³

We have been studying referral patterns in fundholding and non-fundholding practices in the Oxford region since October 1990. Interim results from our study suggested that little, if any, evidence exists that budgetary pressures have been affecting general practitioners' referral behaviour.⁴ Referral rates from fundholding and non-fundholding practices were closely similar after the organisational changes were implemented in 1991 in terms of overall rates, out of district rates, and referrals to private clinics. The early findings, however, were likely not to be indicative of longer term trends, in particular because of an agreement negotiated by the regional health authority and the fundholders to contract at least 80% of their hospital services budget to their traditional providers in the first year of the scheme. This restriction was relaxed in the third year. It was necessary therefore to extend the dataset in order to analyse the longer term impact of the fundholding scheme in the light of these developments. We report here a further follow up in the same practices (10 fundholding practices and six non-fundholding practices) to examine trends over time from 1990/1 (the year before the scheme was introduced) to 1993/4, when the first wave fundholders were in their third year of budget holding.

Health Services Research Unit, Department of Public Health and Primary Care, University of Oxford, Radcliffe Infirmary, Oxford OX2 6HE

Rebecca Surender, research officer

Helen Doll, statistician

Sarah Stewart Brown, director

Unit of Health Care Epidemiology, Department of Public Health and Primary Care, University of Oxford

Jean Bradlow, honorary research associate

King's Fund Development Centre, London W1M 0AN
Angela Coulter, director

Correspondence to: Professor Coulter.

BMJ 1995;311:1205-8

Methods

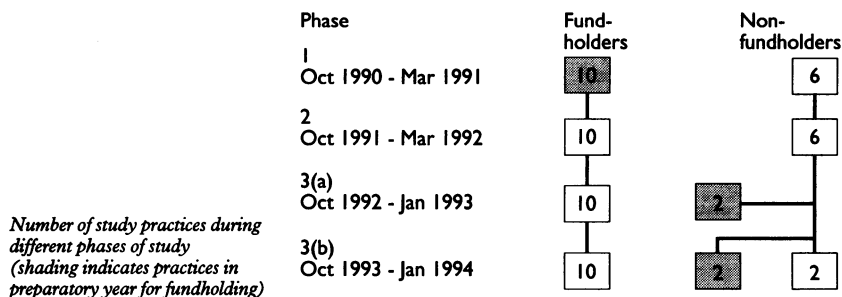
A detailed description of the methods was included in our previous paper, which reported on referrals in the preparatory year, 1 October 1990 to 31 March 1991 (phase 1), and the first year after the reforms, 1 October 1991 to 31 March 1992 (phase 2).⁴ This paper extends the results to the third year of fundholding, 1 October 1993 to 31 January 1994 (phase 3). The study practices were based in Berkshire, Buckinghamshire, Northamptonshire, and Oxfordshire, and all were recruited in 1990. The fundholding and non-fundholding practices were reasonably well matched in terms of size, location, distance from provider unit, population prosperity, and rural and urban mix. By phase 3 of the study the total practice population of the fundholding group was 130 437 (mean list size per practice 13 044). The combined practice population of the control group was 91 406 (mean list size 15 234). During the three study periods a total of 38 682 outpatient referrals were recorded.

COLLECTION OF DATA

During phase 3 we revisited all 16 practices that participated in phases 1 and 2 of the study and we used the same methodology to collect data. The referral data, which were checked and verified, included details of referring general practitioner; patient's sex and date of birth; and the consultant, specialty, and hospital to which the referral was made. As previously, the aim was to monitor only those referrals to outpatient clinics that incurred a charge against fundholding budgets and the corresponding referrals in control practices.

Detailed analysis of that data in phase 3 focused on a four month period (October to January) rather than six months (October to March) as in the earlier two phases. This was because the researcher responsible for collecting data (JB) was absent during February and March. Outpatient referral rates in the Oxford region show little seasonal variation during February and March.⁵

Analysis of phase 3 was complicated by the fact that two of the control practices became third wave fundholders in April 1993. To allow these two practices to remain in the study we analysed data collected from them during the same period in the previous year—



Number of study practices during different phases of study (shading indicates practices in preparatory year for fundholding)

TABLE I—Standardised referral rates to NHS specialists (per 1000 population a year) from fundholding practices and controls by specialty. Values in parentheses are 95% confidence intervals

Specialty	Fundholding practices			Non-fundholding practices		
	Phase 1	Phase 2	Phase 3	Phase 1	Phase 2	Phase 3
General surgery	21.0	22.8	23.3	18.2	21.3	23.8
General medicine	18.4	16.6	19.5	15.5	19.0	22.1
Gynaecology	14.7	14.7	13.0	12.1	11.8	13.7
Orthopaedic surgery	10.4	12.0	11.5	10.2	11.9	12.4
Ear, nose, and throat	11.9	12.6	12.3	11.5	11.7	11.9
Dermatology	7.9	8.4	9.7	7.8	9.9	10.7
Ophthalmology	8.4	8.7	9.1	7.3	8.1	8.3
Psychiatry	4.7	5.8	7.1	5.0	5.9	7.9
Rheumatology	3.7	3.2	2.8	2.6	3.8	3.9
Paediatrics	3.4	4.1	4.0	2.7	4.2	4.3
Plastic surgery	1.6	1.6	2.6	1.2	2.1	1.7
All specialties	107.3 (106 to 109)	114.4 (110 to 113.1)	115.4 (113.6 to 117)	95.0 (92.9 to 97)	112.0 (110 to 114)	120.3 (118 to 122)

that is, the year before they became fundholders. Additionally, two other control practices became fourth wave fundholders in April 1994. Four of the six control practices therefore contributed data while in their preparatory year for fundholding (figure).

ANALYSIS

We calculated annual referral rates for each practice using the practice population as the denominator. We obtained population figures direct from the practice computer systems. Annual referral rates for each practice were standardised for age and sex by the direct method with the total study population as the standard. Proportions were compared with the χ^2 test. Confidence intervals for proportions and standardised rates were derived with the software package CIA.⁶ Owing to the number of comparisons performed, significance was taken at the 1% level ($P < 0.01$).

Results

Fundholders' NHS referrals showed a small but significant increase between phase 2 and phase 3 of the study (table I). Referrals to four of the 11 NHS specialties increased significantly: referrals to general medicine increased by 2.9 per 1000 patients (95% confidence interval 1.9 to 3.9, $P < 0.0001$); dermatology by 1.3 (0.6 to 2.0, $P < 0.001$); psychiatry by 1.3 (0.7 to 1.9, $P < 0.0001$); and plastic surgery by 1.0 (0.6 to 1.4, $P < 0.0001$). The only significant decrease in fundholders' NHS referral rates occurred in gynaecology, which decreased by 1.7 (0.8 to 2.6, $P < 0.001$).

The non-fundholders' NHS referral rates showed a larger increase overall than fundholders between phases 2 and 3. Rates increased to all specialties apart from plastic surgery, significant increases occurring in general surgery (2.5 (0.1 to 3.8), $P < 0.001$); general medicine (3.1 (0.2 to 4.4), $P < 0.0001$); gynaecology (1.9 (0.9 to 2.9), $P < 0.001$); and psychiatry (2.0 (1.3 to 2.8), $P < 0.001$).

Referral rates in non-fundholding practices were lower than those of the fundholders in phase 1 but by phase 3 were significantly higher (table II). Whereas the fundholders' NHS referrals had increased by 8.1 per 1000 patients (5.7 to 10.5, $P < 0.0001$), a 7.5% increase, the non-fundholders' referrals had increased by 25.3 (22.5 to 28.1, $P < 0.0001$), an increase of 26.6%. Between phases 1 and 3 referrals to private clinics decreased among fundholders by 2.4 (1.2 to 3.6, $P < 0.001$), an 8.8% decrease, but increased among non-fundholders by 3.4 (1.9 to 4.9, $P < 0.0001$), a 12.2% increase.

Practices' referral rates to private clinics continued to vary much more than their rates to NHS clinics. There was twofold variation in total referral rates (NHS and private) between the practice with the lowest rate (fundholding practice 4) and that with the highest (non-fundholding practice 2).

Four of the 10 fundholding practices (practices 3, 5, 8, and 9) and four of the six non-fundholding practices (2, 4, 5, and 6) had significantly increased their NHS referral rates between phases 2 and 3 (table II). Our data allowed us to look in some detail at what happened to the referral patterns of the four control practices that eventually assumed fundholding status, during their preparatory year. Between phases 1 and 2 little difference existed between the referral rates of the practices that remained non-fundholding (1 and 6) and those which went on to become fundholders (2, 3, 4, and 5). In phase 3, however, the two practices that became third wave fundholders (2 and 5) and one of the two practices that entered the fourth wave (4) increased their referral rates quite dramatically in the preparatory year over those in phase 1.

To examine whether the 1991 reforms had

TABLE II—Standardised referral rates (per 1000 population a year) in individual practices. Values in parentheses are 95% confidence intervals

Practice No	To NHS specialists			To private specialists		
	Phase 1	Phase 2	Phase 3	Phase 1	Phase 2	Phase 3
Fundholding:						
1	89.0	110.1	107.3	85.5	89.5	86.1
2	92.1	93.9	103.8	13.6	10.6	10.2
3	92.9	102.7	131.1	50.2	45.1	54.4
4	99.1	108.3	89.9	15.9	13.4	11.3
5	104.6	100.5	124.8	31.3	30.7	34.0
6	109.2	94.1	96.8	11.3	6.2	8.8
7	110.8	115.9	109.0	15.2	15.8	17.8
8	111.4	113.1	139.5	22.2	15.5	11.0
9	142.5	158.6	173.4	25.4	20.9	22.1
10	145.0	131.9	119.3	23.6	18.5	15.6
All fundholding practices	107.3 (106 to 109)	111.4 (110 to 113)	115.4 (114 to 117)	27.2 (26.3 to 28.2)	24.6 (23.8 to 25.5)	24.8 (24.0 to 25.6)
Non-fundholding:						
1	90.5	132.9	108.2	20.0	21.5	22.6
2	91.4	98.8	164.7	31.6	27.4	37.8
3	93.7	160.2	126.5	27.4	29.2	25.3
4	98.0	116.3	144.4	36.0	46.1	52.4
5	99.0	118.1	135.9	37.4	35.7	34.2
6	117.7	106.2	117.1	13.7	12.7	15.4
All non-fundholding practices	95.0 (92.2 to 97.0)	112.0 (110 to 114)	120.3 (118 to 122)	27.8 (26.7 to 29.0)	27.8 (26.7 to 28.9)	31.2 (30.1 to 32.3)

TABLE III—Percentage of referrals to NHS hospitals outside district health authorities in which practices were located

Specialty	Fundholding practices			Non-fundholding practices		
	Phase 1	Phase 2	Phase 3	Phase 1	Phase 2	Phase 3
General surgery	5.8	10.2	3.8	1.8	1.0	1.1
General medicine	10.3	10.2	9.1	3.5	2.5	3.0
Gynaecology	9.3	6.1	5.8	3.0	3.8	3.2
Orthopaedic surgery	4.9	7.2	3.7	2.8	1.9	2.1
Ear, nose, and throat	7.1	8.1	5.6	0.5	0.8	1.1
Dermatology	5.7	4.6	3.2	2.1	0.9	0.7
Ophthalmology	6.6	7.1	2.4	1.1	2.5	2.6
Psychiatry	21.6	12.8	11.1	0.5	1.1	1.3
Rheumatology	4.6	8.1	10.2	6.3	1.7	0
Paediatrics	1.7	6.5	1.0	2.2	1.1	0
Plastic surgery	7.9	15.5	10.7	10.5	7.5	8.1
All specialties	7.7	8.4	6.0	2.3	1.9	2.1

constrained the ability of non-fundholding practices to refer beyond their district boundaries we monitored the proportion of referrals that crossed district boundaries in both groups of practices (table III). The only significant change in out of district referrals among the non-fundholding practices occurred in rheumatology. Fundholders' out of district referrals increased in phase 2, but by phase 3 they had decreased in all specialties except rheumatology. The most significant changes between phases 2 and 3 occurred in general surgery, ophthalmology, and paediatrics. Consequently, although fundholding practices continued to have higher overall rates of out of district referrals than non-fundholders, the gap between the two groups had narrowed.

Discussion

Most of the suppositions which this study set out to investigate have been shown to be unfounded. NHS referral rates from the fundholding practices did not decrease over the four year period; on the contrary, they showed a small but steady increase. The rate of referrals to private clinics from fundholding practices also decreased, instead of increasing as expected. These findings suggest that financial pressures had little effect on general practitioners' referral decisions once practices had entered the scheme.

The non-fundholders' rate of out of district referrals remained low throughout the three phases of the study and showed little change, lending no support to the view that their referrals would be more restricted after

the NHS reforms. The fundholders, who had a higher rate of out of district referrals (primarily because several practices straddled the boundary between two districts), increased these slightly in phase 2, but by phase 3 their out of district referrals had dropped to below the baseline level. Most of these general practitioners probably wanted to maintain good working relationships with local providers rather than cultivate those further afield.

PREPARATORY YEAR

Our results provide support for the hypothesis that the historically based system of budget allocation provides an incentive for practices to increase their rate of referral during the preparatory year. This would account for the steeper increase in rates among three of the four practices who were in their preparatory year for fundholding during phase 3 of the study. If this artificial inflation had been a feature of the first year of fundholding, we might have expected to see a reduction in rates from the fundholding practices in phase 2. We did not observe this, which may confirm our previous hypothesis that the general practitioners who entered the scheme in the first wave were atypical.⁴ Third and fourth wave fundholders may have been more aware of the potential to inflate their budgets by high rates of referral in the preparatory year. If so, this further confirms the need to move towards capitation based budgets, although finding a satisfactory formula will be difficult.⁷ Our results provide further evidence of unexplained variations between practices and year on year fluctuation in individual practices' rates, both of which compound the problem.

This also illustrates one of the problems of evaluating the introduction of a fundholding scheme. Our study practices were recruited in 1990 before anyone had experience of fundholding. It proved impossible to predict which practices would stay outside the scheme and thus remain relatively uncontaminated "controls." The fact that four of our non-fundholding controls eventually decided to enter the scheme was an unavoidable but nevertheless serious limitation of our study design, as we could not be sure that they provided a representative measure of the underlying trend in referral rates. The fact that referral rates, however, had increased in this group of practices between phases 1 and 2 before any of them entered the preparatory year suggests that the underlying trend was indeed upwards.

BUDGETARY SAVINGS

Most fundholding practices in the Oxford region and elsewhere made savings on their hospital costs which they reinvested in their practices. These savings were achieved by a variety of means including reducing the number of follow up consultations, increasing use of day case surgery, contracting for the same volume

Key messages

- NHS outpatient referral rates have increased since 1990
- Fundholders' use of specialist consultations has not decreased
- Fundholding has not led to an increase in referrals to private clinics
- The NHS reforms in 1991 have had little impact on out of district referrals
- Investment in primary care has not reduced the demand for secondary care

of services at a lower price, and choosing cheaper providers. This means that hospitals lost money, despite the demand for specialist services having increased. It is on the whole reassuring that referral rates seem relatively immune from financial pressures as it suggests that fundholders' patients are not being deprived of the level of specialist attention afforded to those whose general practitioners are not fundholders. It may be disappointing, however, to those who hoped that the fundholders' scope for reinvesting savings in new practice based facilities would encourage a shift away from dependence on specialist hospital services. Our results show no such shift, at least in terms of initial outpatient referrals.

We are very grateful to the general practitioners and their

practice managers and support staff, without whom this study would not have been possible.

Funding: Oxford Regional Health Authority.

Conflict of interest: None.

- 1 Coulter A. Evaluating general practice fundholding in the United Kingdom. *Eur J Public Health* (in press).
- 2 Roland M. Measuring appropriateness of hospital referrals. In: Roland M, Coulter A, eds. *Hospital referrals*. Oxford: Oxford University Press, 1992.
- 3 Glennerster H, Matsaganis M, Owens P. Implementing GP fundholding: wild card or winning hand? Open University Press, 1994.
- 4 Coulter A, Bradlow J. Effect of NHS reforms on general practitioners' referral patterns. *BMJ* 1993;306:433-7.
- 5 Bradlow J, Coulter A, Brooks P. *Patterns of referral*. Oxford: Health Services Research Unit, 1992.
- 6 Gardiner M, Altman D. *Statistics with confidence*. London: *BMJ*, 1990.
- 7 Sheldon T, Smith P, Borowitz M, Martin S, Carr-Hill R. Attempt at deriving a formula for setting general practitioner budgets. *BMJ* 1994;309:1059-64.

(Accepted 18 October 1995)

Urinary incontinence: long term effectiveness of nursing intervention in primary care

James O'Brien, Helen Long

Department of Public Health Medicine, Somerset Health Commission, Taunton TA1 7PQ
James O'Brien, consultant
Helen Long, research and evaluation officer

Correspondence to:
Dr O'Brien.

BMJ 1995;311:1208

In the United Kingdom regular urinary incontinence affects over 2 000 000 women and costs the NHS about £70 million a year on aids and appliances. The assessment and treatment services lack a coherent plan for its recognition and treatment, and where and from whom care is best received is debated.¹ Few of the current management strategies (pelvic exercises, appliances, drugs, and surgery) have been the subject of well designed randomised controlled trials in primary care, and few studies have reported long term results.²⁻⁴ Thus lack of evidence combined with poorly trained primary care physicians and nurses has meant that fewer than one in three patients are recognised and fewer still are appropriately managed.¹

In 1991 we reported the results of a randomised controlled trial of the management of incontinence in primary care using a nurse trained in simple assessment and management techniques.⁵ The results after 12 weeks were promising: 68% cure or improvement in the intervention group compared with 5% in the controls. If these outcomes are maintained in the longer term then this model of service provision may have much to offer. This report details the four year follow up results of that study.

Subjects, methods, and results

In the 1990 study, 292 women suffering from validated regular incontinence, with two or more leaks a month, were randomly assigned to immediate assessment and treatment by a nurse or were left for 12 weeks (historical controls), after which they followed the same intervention plan. Intervention consisted of four sessions of pelvic floor exercises or bladder retraining, depending on the dominant symptoms. Women were encouraged to continue the management plan at home and were not offered further intervention. At the 12 week follow up in 1990, 276 women reported their continence status (cure, improvement, the same, or worse). Those remaining the same or deteriorating were referred back to their general practitioner.

Four years later we contacted all these women, using a similar questionnaire asking about continence status, use of pads, exercises, or any further treatment. In the intervening four years, 18 women had died with conditions unrelated to their incontinence, 23 could not be traced, and six failed to respond. The continence status in 1990 of non-responders after treatment did not differ from that of those who responded to the

Four year follow up of women treated for incontinence by pelvic floor exercises or bladder retraining. Values are numbers (percentages)

Status after treatment	At follow up			
	Maintained benefit or improved further	No benefit	Deteriorated	Total
Cured	19	0	8	27 (12)
Improved	124	0	18	142 (62)
Same	15	33	10	58 (25)
Deteriorated	0	0	2	2 (1)
Total	158 (69)	33 (15)	38 (16)	229 (100)

questionnaire. Results are available from 229 women (89% of surviving women).

In 1994, 69% (158) of women had either maintained their original improvement or cure or had improved further. Sixteen per cent (38) had deteriorated and 15% (33) neither benefited from the original programme nor changed since then (table). Of the 60 women referred back to their general practitioner in 1990 and wanting further treatment, six had surgery, three were considering it, 11 were taking antimuscarinic agents, and four were receiving outpatient treatment. Only 27% (61) of women continued exercising for more than a year; 61% (141) exercised for less than a year and 12% (27) stopped immediately. Pelvic floor exercises for one year or more was strongly associated with improvement or maintenance of benefit (56/61) compared with exercises for less than one year (102/168; $P < 0.001$).

Comment

Our 1990 study showed that a short, three week training course for a nurse in the assessment and management of incontinence in primary care can offer the NHS a practical, accessible, and acceptable service for all women with urinary incontinence. This follow up study shows that this strategy is effective in the longer term. This model of service provision will also benefit secondary care by ensuring that patients are appropriately managed in primary care before possible referral.

Funding: None.

Conflict of interest: None.

- 1 Department of Health. *An agenda for action on continence services*. London: HMSO, 1991.
- 2 Hahn I, Milsom I, Fall M, Ekeland P. Long-term results of pelvic floor training in female stress urinary incontinence. *Br J Urol* 1993;72:421-7.
- 3 Largo-Janssen TLM, Debruyne FMJ, Smits AJA, van Weel C. The effects of treatment of urinary incontinence in general practice. *Fam Pract* 1992;9:284-9.
- 4 Mouritsen L, Frimodt-Moller C, Moller M. Long-term effect of pelvic floor exercises on female urinary incontinence. *Br J Urol* 1991;68:32-7.
- 5 O'Brien J, Austin M, Sethi P, O'Boyle P. Urinary incontinence: prevalence, need for treatment, and the effectiveness of intervention by a nurse. *BMJ* 1991;303:1308-12.

(Accepted 3 August 1995)