Changing to generic formulary: how one fundholding practice reduced prescribing costs

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Abstract

Objectives—To observe one general practice's attempt to reduce prescribing costs on becoming third wave fundholders through the introduction of a generic formulary applied to all new and repeat prescribing. To assess the impact on patients and prescribing patterns.

Design—An observational study using interviews with patients and practitioners; questionnaires for patients and prescribing data.

Setting—One urban general practice with five partners in Scotland. It became fundholding in April 1993.

Subjects—71 searches of the register of repeat prescriptions identified 1274 potential changes in drugs. Questionnaires were sent to a stratified random sample of 280 patients four months after the changes were made; 33 interviews were conducted with 17 patients selected by local pharmacists to represent a wide range of opinion.

Main outcome measures—Changes in prescribing and response and satisfaction of patients.

Results—Of intended changes, 129 (70%) were in place after four months. Thirty three (20%) of the 167 patients who returned questionnaires were "very unhappy," though interviews suggested that this was primarily with the communication they received rather than the change itself. Generic prescribing rose from one in three (37%) to over a half (58%). The volume of treatment dispensed (as treatment days) fell by 67 674 (10.7%), and the average cost per day's treatment fell by 3.1p from 32.3p per day in 1992 (9.4%), producing a total absolute saving of 24% (£137 712) over the first year.

Conclusion—This practice has achieved a large reduction in prescribing costs rapidly. These were tolerated by patients, none of whom is thought to have left the practice for this reason. Great care must be taken to inform patients appropriately.

Introduction

Prescriptions issued by general practitioners accounted for £3.6 billion of NHS expenditure in 1992-3; this continues to rise at 14% a year.¹ It has been shown that fundholding practices are managing to limit this rising cost more successfully than other practices, although interpretation of these studies is complicated by control groups who were about to become fundholding.²⁻⁴ The Audit Commission advocates financial incentives as a promising way to encourage "rational prescribing" yet there is little information on how practices respond to such incentives or what impact this may have on patients. We describe one practice's experience of reducing prescribing costs while it became a third wave fundholder. The data reported here describe the methods it

used, the savings made, reactions of patients, and the resultant changes in prescribing patterns.

We aimed to observe one practice's attempt to reduce prescribing expenditure; to assess the outcome of their actions; and to understand why they succeeded or failed.

Subjects and methods

One urban third wave fundholding practice agreed to cooperate fully in the study. In 1993 the five full time partners shared a list size of 6450. The indicative drug budget of £453 190 for 1992-3 was overspent, the actual budget for April 1993 to March 1994 was therefore increased to £573 802; equivalent to £89 per capita.

The study was conducted by JSD, who had no previous connections with the practice. All aspects of the changes considered relevant were included, resulting in the four parallel studies outlined below. All appropriate practice information was made freely available.

The steps taken and the reasoning behind them were clarified through interviews with all practice doctors, relevant practice staff, and local pharmacists. Non-participant observation was conducted for two sessions at the practice's prescriptions desk and at one practice meeting devoted to refining the new formulary.

A personalised, anonymous questionnaire was sent to a stratified random sample of 280 patients four months after their repeat medication had been altered. This ascertained who had tried the new treatment, who was still taking it, how they had been informed, and their opinion of the change.

The practice prescribing data were converted to defined daily doses for more detailed analysis than that currently available through Scottish prescribing analysis.³ This allowed the volume of treatment dispensed to be accurately compared as well as the cost, irrespective of prescribing interval or changes to alternative preparations within the same therapeutic group.

Semistructured interviews were conducted with 17 patients within one week of their repeat prescription having been altered by the practice. Sixteen of these were interviewed again six months later. These patients were purposefully selected by two local pharmacists to sample a wide range of opinion.⁵ Patients who showed particular anger, confusion, or acceptance of the change were asked if they could be contacted by the researcher. Interviews were confidential and subjects were strongly reassured that their doctor would not find out who had been interviewed.

Results

The most important background information and identifiable stages in the process were that the practice considered its management of changes to be efficient;

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all partners agreed to fundhold; success was seen to depend on improving services; improved services required funds to be released; historically high prescribing costs gave an opportunity to save; and the partners accepted that some patients would be unhappy about changes in their prescriptions.

A rapidly introduced change to prescribing habits in the practice was seen as essential to reap a one off saving from the prescribing budget. The following steps were taken to achieve this: a generic formulary was developed; desktop prescribing was started to ease introduction of the formulary; patients receiving repeat prescriptions not included in the formulary were identified (1187 patients were selected for transfer to the formulary alternative and 87 treatments were stopped outright); communication strategies were developed to inform patients; and changes in prescriptions were introduced within two months of fundholding.

This process took no more than six months and produced an acceptable workload for the general practitioners concerned. The development of the formulary proved surprisingly easy, essentially because it was viewed as necessary by every partner, was negotiated between them, and could be modified if necessary. Introduction of the formulary to all acute prescribing was eased by the use of desktop computers.

TABLE I—Summary of patients' feelings in response to changes in prescribing. Values are numbers (percentages) of patients

Opinion	About change (%)	About communication (%)
Very happy	8 (5)	17 (10)
Quite happy	25 (15)	20 (12)
Not bothered	50 (30)	54 (32)
Slightly unhappy	44 (26)	44 (26)
Very unhappy	33 (20)	29 (18)
No reply	7 (4)	3 (2)
Total	167 (100)	167 (100)

Its application to repeat prescribing produced a considerable administrative burden. Searches were carried out for preparations not listed in the formulary and each reviewed by one partner. The records of patients were then changed to the formulary alternative. At the reviewing partner's discretion some patients were sent an explanatory letter; most were first informed when collecting their repeat prescription from the practice. Those unhappy about the change were asked to consult their doctor. This process created a lot of work for the receptionists and computer operator but did result in some tightening up of the register and some additional recalls for clinical review.

TABLE II—Practice prescribing compared with health board averages before and after changes in prescribing

Detail	Before	After
Items per 100 patients	8%	1%
Cost per patient	20%	-8%
Cost per item	11%	-9%

TABLE III—Practice prescribing data for June to November 1992-3

Drug category	Defined daily dose 1992	Change in volume of defined daily dose (%)	Change in cost in pence per defined daily dose (%)	Total change in cost in £ (%)
Musculoskeletal	61 713	-16 039 (-26.0)	-8p (-26)	-£8 714 (-45.3)
Antacids	5 820	-856 (-14.7)	-0p (0)	-£210 (-14.4)
Gut motility	5 819	-2 319 (-39.9)	-8p (-16)	-£1 420 (-49.9)
Ulcer healers	54 155	-4 525 (-8.4)	-11p (-12)	-£9 337 (-18.8)
Laxatives	23 039	-9 949 (-43.2)	3p (27)	-£722 (-27.7)
Loop diuretics	93 635	-4 513 (-4.8)	-4p (-67)	-£3 595 (-63.9)
β Blockers	28 433	-5 045 (-17.7)	-6p (-25)	-£2 816 (-40.5)
Antihypertensives	15 780	-917 (-5.8)	0p (0)	-£611 (-5.4)
Vasodilators	85 239	-17 399 (-20.4)	-3p (-10)	-£7 267 (-28.3)
Asthma treatments	92 410	1 895 (2.1)	2p (6)	£1 970 (6.8)
Sedatives	34 717	-11 067 (-31.9)	-6p (-55)	-£2 785 (-71.8)
Antidepressants	18 495	1 496 (8.1)	-25p (-45)	-£4 058 (-39.4)
Analgesics	43 101	-2 255 (-5.2)	-4p (-17)	-£2 116 (-20.5)
Antibiotics	23 228	888 (3.8)	-14p (-31)	-£2 900 (-28.0)
Antifungals	1 028	-255 (-24.8)	128p (82)	£594 (37.1)
Antivirals	244	-84 (-34.5)	-26p (-5)	-£465 (-37.8)
Diabetes treatments	17 726	-744 (-4.2)	2p (9)	£203 (5.1)
Hormone replacement	28 819	4 014 (13.9)	0p (0)	£1 161 (13.8)
Total	633 401	-67 674 (-10.7)	-3p (-9.4)	-£43 087 (-23.99)

No patients are known to have left this general practice because of these changes. Total list size is increasing. Overall the partners considered the effort invested to be well worth while.

DATA FROM QUESTIONNAIRE GIVEN TO PATIENTS

Of the 280 questionnaires sent, 167 (60%) were returned adequately completed. An additional 18 were marked as having "no change made." Analysis with χ^2 showed no significant differences between those patients whose treatment was stopped, generically substituted, or changed with respect to success rate, how the patient was informed, or the patient's opinion of the change so they are reported together.

The overall success rate was 70% (129/185), success being classed as a patient remaining on the new preparation or having ceased a "stopped treatment" without the substitution of an alternative. Of the 56 remaining patients, 37 (20%) were known to be taking their original treatment, seven were on other prescribed treatment, seven had stopped all treatment, and five bought their own alternative.

Respondents were asked if they were informed about the change and their opinion of it. In total, 122 of 167 (73%) patients could recall being informed of the change in at least one way, 39 (23%) stated they had not been told at all, and six (4%) failed to respond. Table I gives details of patients' satisfaction.

Satisfaction with communication received was closely correlated with satisfaction about the change (Spearman $r_s=0.81$). There was no significant difference, however, in success rate between those who had or had not been informed. Ten patients reported needing to make an extra consultation with their doctor because of the change; eight patients required two consultations. Extrapolated to the practice as a whole, this equals 198 additional consultations. Hence, for every 100 intended changes there were 70 successes and 16 additional consultations were generated.

PRACTICE PRESCRIBING DATA

Scottish prescribing analysis data showed that the practice had been prescribing above the health board average. The practitioners intentionally timed their attempt to reduce their costs to maximise the savings from the 1993-4 drug budget. Table II shows the success achieved in becoming average volume prescribers (8% to 1%), and below average prescribers for cost (20% to -8%) from before to after the introduction of fundholding. The proportion of generic prescribing rose from 36.8% to 57.6%.

Detailed analysis of the data available in defined daily dose form (which covered 90% by cost) revealed more about the nature of the changes which had occurred. Table III shows volume dispensed, cost per defined daily dose, and total cost for the comparable six month periods June to November in 1992 v 1993.

The total number of treatment days fell by 67 674 (10.7%). Although the repeat prescriptions intentionally stopped could account for 16 000 days (2.5%) at most, an additional 51 674 days' reduction occurred. Some of the fall was due to the adoption of shorter courses of treatment, especially non-steroidal analgesics for acute injuries, but it seems there has been an unplanned swing towards tighter prescribing in general.

The change in average cost per day's treatment is shown in the third column. This shows the savings made through the use of cheaper preparations after the introduction of a generic practice formulary. The average cost per day's treatment fell by 3.1p from 32.3p per day in 1992 (9.4%). This figure excludes the impact of a reduction in the volume dispensed.

The total cost of dispensed medication included in the defined daily dose calculations fell by £43 087

(24%) between the two periods analysed. The fourth column shows that the greatest savings were made from ulcer healing (£9337), musculoskeletal (£8714), and vasodilating drugs (£7267). Expenditure in some drug groups increased—notably, hormone and asthma treatments.

PATIENT INTERVIEWS

A total of 33 detailed interviews were conducted with 17 patients whose treatment had been changed or stopped altogether. These highlighted those aspects of the experience which had been upsetting. Although therapeutic problems were sometimes uppermost (for instance, the stopping of Zovirax cream for cold sores), more commonly it was a failure of communication which underlaid any annoyance. Almost all patients interviewed were aware that saving money was at least part of the reason for the change; none, however, felt that a trial of a cheaper alternative was unreasonable. The outcome was much more likely to be a willing trial of the new treatment if patients thought that they understood the reason for the change.

Discussion

The practice studied has proved to be an extreme example of the changes in prescribing habits which can be achieved. At a time when NHS drug expenditure is increasing at 14% a year it has achieved an absolute saving of 24%, moved from high to below average cost prescribing, and caused less upset to patients than it expected. These changes are considerably in excess of other reported practices, few of which achieved any absolute saving.^{2,3} Three questions must be considered: were they abnormally high prescribers before the change; has their prescribing become unsafe; and should others try to emulate them?

It has been suggested that practices may attempt to maximise their drug budgets through generous prescribing in the run up to fundholding.^{4,6} This practice consciously decided to delay introduction of measures to save costs until becoming a fundholder and knew that as a high prescriber (around 20% above health board average) it had room for manoeuvre. Indeed, this was seen as the prime incentive to join the scheme through which improvements in service could be funded, and the local medical prescribing adviser's previous efforts to reduce costs had been resisted. Historical data are difficult to compare because of changes in the practice's prescribing interval and health board's systems for collection of data so it is unclear whether an unusual rise occurred during the budget setting period. The agreed budget, at £88·96 per head, is generous by comparison with others reported but the Tayside average actual expenditure in 1993-4 was £81 for fundholders and £91 for non-fundholders (Tayside Health Board, personal communication). The absolute saving of £137 712 should be seen in this light.⁷ It is impossible to say precisely which service improvements were funded through this saving but additional staff costs included increased psychology (£20 000), occupational therapy (£17 000), physiotherapy (£13 000), and chiropody (£12 000). About £94 000 was invested in practice improvements, minor surgery, and ophthalmology and audiology equipment. Future developments include plans for purchasing in 1995 a vehicle for transporting patients.

In the absence of any accepted standards for appropriate prescribing by general practitioners it is not clear whether this practice's prescribing has deteriorated or improved. The number of items prescribed remains 1% above the health board average and the proportion of generic prescribing increased from 36·8% to 57·6% in line with Audit Commission recommendations

Key messages

- General practice prescribing accounts for 10% of NHS expenditure (£3·6 billion in 1992-3)
- Financial incentives are increasingly being used to encourage cheaper prescribing
- It seems that patients will accept large scale changes, at least within the context of fundholding
- The introduction of such changes should be carefully planned, particularly the way in which patients are informed
- There is a need for more research into the balance between prescribing expenditure and the provision of other services

(Scottish average in 1991, 34·7%). The new prescribing level seems to be clinically reasonable.

The dissatisfaction expressed in the questionnaire was explored at interview and seemed to reflect two related issues. Firstly, power—patients feel impotent if they perceive a change has been forced on them. Secondly, communication—patients want to feel cared for by their general practitioner. They will accept major change if it is delivered in a manner which makes them feel valued. Such an approach also helps to avoid much of the negative feeling generated by the change itself and is a wise investment for the future doctor-patient relationship, which can easily be damaged through these manoeuvres.

Should other practices follow suit? The motivation for this practice to succeed was undoubtedly financial and the workload generated was judged by it to be worth while in the context of becoming a fundholder and producing a considerable saving. Non-fundholding practices should consider carefully the timing of any such moves with this in mind.

This practice may have been atypical. It has been extremely successful in introducing many changes rapidly and is now confident about doing so. As a result a clinical pharmacist is now working within the practice as part of a research project to investigate the impact of such collaboration. The rapid pace of developments has produced a feeling of "being on the winning side," which has itself enhanced morale and encouraged further progress, such as the introduction of bar codes for patients' notes.

There is increasing evidence that fundholding practices do limit prescribing costs more successfully than non-fundholders, although this effect may be an artefact as a result of other practices maintaining traditional prescribing patterns in case a drug budget is forced on them. There is also some evidence that the quality of prescribing improves with fundholding—for example, greater use of inhaled steroids. The experience of the practice observed in this study has indicated what it is possible to achieve. Considerable financial savings were made at an acceptable cost in terms of effort and upset caused, although the latter could be reduced considerably with care. Without accepted standards, however, it is not clear when rational prescribing would become cheap prescribing if the financial incentives become too great and no standards are set.

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General practitioners' attitudes to patients with a self diagnosis of myalgic encephalomyelitis

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Interest in the symptom of tiredness has increased with the suggestion of a syndrome of prolonged fatigue caused by infection. The syndrome is referred to as myalgic encephalomyelitis, even though no evidence exists that sufferers have encephalitis or myelitis. Active support organisations encourage self diagnosis¹ and advise how to approach a general practitioner who "doesn't believe in ME."² Problems in doctor-patient relationships may be a factor in persistent disability in fatigue states.³ We therefore used a case vignette method to examine how self diagnosis of myalgic encephalomyelitis could influence general practitioners.⁴

Subjects, methods, and results

We randomly selected 200 general practitioners from the Scottish Office register and allocated them to be sent one of four case descriptions (see below). Information was deliberately kept sparse to force respondents to call on general attitudes.

Case 1—Mrs M is a 28 year old personnel officer for a computer firm who has previously been in good health. She attended the surgery complaining of general malaise which had lasted for six months. The malaise had increased in severity and by the time she had presented it was accompanied by intermittent abdominal pains, severe tiredness, insomnia, and crying easily for no good reason. She denied any serious financial, social, or marital stressors. She had read newspaper articles about chronic fatigue syndrome/myalgic encephalomyelitis and believed that this was her problem. Physical examination, full blood count, urea and electrolytes, liver function tests, and thyroid function tests showed no abnormalities.

Case 2—This was the same as case 1 except chronic fatigue syndrome myalgic encephalomyelitis was not mentioned.

Case 3—This was identical to case 1 except that the patient was an office cleaner.

Case 4—The patient was an office cleaner but the self diagnosis was not mentioned.

The questionnaire contained nine items examining management issues and attitudes to the patient (table).

Level of agreement was indicated on a six point scale and responses to the cases were compared by the Mann-Whitney U test.

We received 132 (66%) usable replies: 37 (74%) for case 1, 35 (70%) for case 2, 29 (58%) for case 3, 31 (62%) for case 4 ($\chi^2=3.6$, $df=3$; $P=0.31$). Respondents were more likely to refer the personnel officer than the office cleaner for counselling (mean score 3.4 v 4.2; $P=0.011$); this was the only significant effect of occupation. The table shows the influences of self diagnosis on the mean scores.

Comment

Doctors were more likely to refer the personnel officer than the office cleaner for counselling. This supports previous findings on the social class of people receiving psychological treatment.⁵

The decision to use antidepressants for someone with abdominal pains, fatigue, and weepiness was unaffected by mention of myalgic encephalomyelitis. Opinions on aetiology were also not significantly influenced. However, self diagnosis led general practitioners to consider the patient less likely to comply with treatment, more likely to pose difficult management problems, and more likely to take up a lot of time. Perhaps as a consequence, the doctors would rather not have such patients on their lists and are more likely to refer for a second opinion. These factors could be partly responsible for patients' numerous accounts of dismissive encounters with general practitioners and hospital doctors.^{1,2}

The differential diagnosis of myalgic encephalomyelitis mainly consists of conditions defined by symptom patterns—for example, irritable bowel syndrome, fibromyalgia, atypical chest pain syndrome, and affective disorders. Self diagnosis adds to difficulties in communicating the nature and management of these poorly understood illnesses.

Our results suggest that it is not in patients' interests to suggest to doctors that they may have myalgic encephalomyelitis. Because of media interest self diagnosis of myalgic encephalomyelitis will continue, and doctors should remind themselves that resulting attitudes could lead to unsatisfactory consultations, resentment, and perhaps even unnecessarily prolonged disability.

We thank the general practitioners who took time to complete and return the questionnaires.

Mean scores (95% confidence intervals) on questionnaires for case histories mentioning and not mentioning myalgic encephalomyelitis

	Myalgic encephalomyelitis mentioned (n=66)	Myalgic encephalomyelitis not mentioned (n=66)	P value
This patient is likely to comply with treatment	3.9 (3.6 to 4.2)	4.3 (4.1 to 4.6)	0.017
I would not want to have this patient on my practice list	2.1 (1.8 to 2.5)	1.5 (1.3 to 1.8)	0.014
This patient poses difficult management problems	4.5 (4.2 to 4.9)	3.7 (3.3 to 4.1)	0.001
This patient is likely to take up a lot of one's time	5.0 (4.8 to 5.2)	4.6 (4.4 to 4.9)	0.023
I would refer this patient to hospital for a second opinion	3.0 (2.6 to 3.4)	2.5 (2.2 to 2.8)	0.049
I would prescribe antidepressants for this patient	4.1 (3.8 to 4.5)	4.2 (3.9 to 4.5)	0.99
This is likely to be caused by psychological factors	4.4 (4.1 to 4.7)	4.7 (4.5 to 4.9)	0.33
This is likely to be caused by physical factors	2.7 (2.4 to 3.0)	2.5 (2.3 to 2.8)	0.49
I would refer this patient for counselling	3.4 (3.0 to 3.7)	2.9 (2.6 to 3.3)	0.07

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