

Prescribing – a case for prolonged treatment

CONRAD M. HARRIS, MEd, FRCGP

JOHN FRY, PhD

BRIAN JARMAN, PhD, FRCGP, MRCP

ELIZABETH WOODMAN, BA

SUMMARY. *In an earlier study it was shown that general practitioners changed some of their prescribing habits when they were given detailed analyses of their prescriptions every six months for two years and provided with opportunities to discuss the information with participating colleagues. A follow-up study of the same doctors two years later revealed that most of the effects of the intervention had disappeared, though the increase in generic prescribing persisted. It is concluded that a more sustained intervention is needed to bring about more lasting change.*

Introduction

In 1979 and 1980 we studied the extent to which general practitioners changed their prescribing habits when they were given analyses of their prescriptions every six months and then brought together in small groups to discuss their reactions to the information with each other. A detailed account of the methods and findings was presented in *Prescribing – a suitable case for treatment*.¹

We looked at the prescribing of the same doctors again in 1982 to see if the changes they made in the course of the first study had persisted. The present paper is a shortened version of a report to the Department of Health and Social Security called *Prescribing – the natural history after treatment*.

Our earlier work showed that, following our intervention, doctors in 10 randomly selected practices in two Family Practitioner Committee (FPC) areas reduced their prescribing rate by 8.5 per cent while the rate of a control group of doctors decreased by 3.0 per cent — a difference which was not regarded as statistically significant.¹ The cost per item dispensed by the intervention group went up by a smaller amount than the controls (22.7 per cent compared with 33.0 per cent in the control group), a difference which was significant. The doctors' rate of prescribing by generic name rose by 42.6 per cent compared with a 16.4 per cent rise for the controls, and this difference too was significant.

We also studied five self-selected practices in the same areas, and they showed a different pattern of change. Their prescribing rate dropped significantly by 15.4 per cent compared with the control drop of 3.0 per cent, but the 30.0 per cent increase in cost per item prescribed was only marginally less than that of the controls (33.0 per cent). An 18.0 per cent increase in generic prescribing was not found to be significantly different from the control group's rise (16.4 per cent) though it had started from a much higher level.

Trainees in the study practices found that the personal tables of prescribing statistics we sent them brought out many important issues for discussion with their trainers. The meetings, which

everyone seemed to enjoy, were appreciated particularly by the more isolated doctors taking part. The demand for a follow-up study arose spontaneously from these meetings.

Method

The month chosen for the study was November 1982, exactly two years after the final study month of the earlier project, though only 18 months after the doctors had received their analyses of prescribing for November 1980. As before, doctors gave us written permission to obtain their prescribing figures from the Prescription Pricing Authority (PPA) without knowing which month would be studied, and we again arranged with the PPA that the data for controls would be sent to us with the doctors' names deleted. The information was received on magnetic tape.

In the original study the randomly-selected group initially contained 23 principals looking after 59 000 patients; the control group 22 principals and about 60 000 patients and the self-selected group 14 principals and about 35 000 patients. The doctors were in practices situated in two FPC areas — Kensington/Chelsea/Westminster in the North-West Thames Region and Camden and Islington in the North-East Thames Region.

The data for the randomly-selected practices (the random group) and the self-selected practices (the record group) were tabulated as in the earlier study. They gave details for individuals and practices of the numbers of the most frequently used individual drugs and minor therapeutic classes of drug (for example, antidepressants, diuretics, penicillins); the costs of the most expensive individual drugs and minor therapeutic classes of drug; total number and cost of the items prescribed with size of drug repertoire; and percentage of non-proprietary items prescribed. There were also tables in which each doctor was compared for use of drug classes with his or her own practice, with either the random or record group, with all participating doctors, and with all other doctors of equivalent status (principal, assistant, trainee or other); and a large table giving many of the above figures for all participating doctors, anonymously, for both November 1980 and November 1982. We used net ingredient costs in our calculations and made no attempt to standardize for cost-inflation.

The analyses which we performed to assess the changes in our study groups and controls were similar to those of the earlier research. Some of them are shown below.

The meetings

'Information packages' like those of the previous study¹ were sent to the practices at the beginning of July 1983 and the meetings started about a week later. For these meetings the doctors were again split into small groups, mixing members of the random and record practices. Only one meeting was held for each group, but, with many doctors already on holiday, attendance was poorer than on earlier occasions. We had not completed our analyses of the data as a whole and therefore could not announce our conclusions.

The topics discussed covered many of the same areas as before, though a few differences were noted. There was some interest in the idea of similar information being provided by the PPA when it had been computerized; several doctors expressed pleasure at having maintained policies they had set for themselves, such as giving up prescribing cough medicines; everyone agreed that any confusion experienced by patients when

Conrad M. Harris, Brian Jarman and Elizabeth Woodman, Department of General Practice, St Mary's Hospital Medical School, London; John Fry, Consultant Statistician, London.

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their prescriptions were changed to generic preparations seemed to be short-lived; and the use of practice computers to print repeat prescriptions was debated at length.

The most noticeable difference from before was one of atmosphere. The doctors were much less emotionally involved in their figures; they showed their interest more by being reflective. They usually spoke of their prescribing in terms of personal habit and were less inclined to defend it as a logical clinical response. Nearly all the doctors felt sure that the earlier intervention had changed their habits permanently, and many thought that further follow-up studies should be made.

The practices

Between November 1980 and November 1982 one of the random group practices had a change of partner and another had a change of assistant. In the same period one of the record group practices took on an extra partner and another lost one. More importantly, the PPA was unable to provide us with data from one of the largest practices in the record group, as its main premises were just outside the two named FPC areas. The record group had never represented anything but itself so that no generalizations were possible from its behaviour. No detailed analyses were made of the record group changes in *Occasional Paper 24*, and so, with its numbers greatly depleted, the results have been omitted from the presentation which follows.

One of the control practices also had its main premises just outside the two named FPC areas, and its data were unavailable too. To allow fair comparisons to be made, we calculated what the November 1980 data would have been without this practice's figures. In addition, the 1982 figures supplied by the PPA in-

cluded those of a doctor who had left his partnership but was still practising from the same address with a small list. His data were subtracted from the totals we received. We are grateful to the PPA for giving us sufficient additional information to make corrections to our three major variables possible, but we have not been able to amend either the generic prescribing figures or the tables showing frequency of use of minor therapeutic classes of drugs.

Results

The data allow us not only to see if the changes made in the earlier study have persisted, but also to compare the situation in November 1982 with that in May 1979 before the intervention started.

Table 1 displays the basic prescribing data for the random and control groups for November 1980 and November 1982, with May 1979 for comparison. Table 2 shows the percentage changes which took place in the three major variables — items per 1000 patients, cost per item and cost per 1000 patients — during both the follow-up period and the total period May 1979 to November 1982 for the random and control groups, the two FPC areas and the corresponding two regions.

Prescribing rate

The random group had previously reduced the number of items prescribed per 1000 patients by 8.5 per cent in the period of intervention (May 1979 to November 1980), though the reduction was not regarded as significant.¹ In the follow-up period (November 1980 to November 1982) the prescribing rate went up by an almost exactly equivalent amount (9.0 per cent), the

Table 1. Basic prescribing data for the random and control groups in November 1982 with November 1980 and May 1979 data for comparison.

Group	Number of patients	Number of items dispensed	Net cost of items (£)	Items per 1000 patients	Net cost per item (£)	Net cost per 1000 patients (£)
<i>Random</i>						
May 1979 ^a	56 613	19 292	35 608	341	1.85	629
November 1980 ^a	63 933	19 956	45 230	312	2.27	707
November 1982	69 182	23 505	71 214	340	3.03	1029
<i>Controls</i>						
May 1979 ^a	58 550	21 397	40 985	365	1.91	698
November 1980 ^b	52 344	17 438	45 096	333	2.58	861
November 1982 ^b	50 712	16 966	57 618	333	3.41	1136

^a Data from *Prescribing — a suitable case for treatment*. ^b Figures corrected for missing data.

Table 2. Changes in three prescribing variables in the follow-up study (November 1980 to November 1982) and over the total period (May 1979 to November 1982) for the random and control groups, the two FPC areas and the two regions.

Group	Percentage increase in items per 1000 patients		Percentage increase in cost per item		Percentage increase in cost per 1000 patients	
	Nov 1980–Nov 1982	May 1979–Nov 1982	Nov 1980–Nov 1982	May 1979–Nov 1982	Nov 1980–Nov 1982	May 1979–Nov 1982
Random	9.0	-0.3	33.5	64.0	45.5	63.6
Control	0.0	-2.6	32.2	76.0	31.9	71.3
Kensington/Chelsea/ Westminster	9.2	-2.1	24.9	63.2	36.2	60.5
Camden/Islington	6.3	5.0	23.8	64.4	32.1	73.0
NW Thames	9.7	2.7	24.8	65.1	36.7	69.5
NE Thames	9.1	3.0	24.9	63.5	36.4	68.5

increase being similar to that of the Kensington/Chelsea/Westminster FPC area but more than that of the Camden and Islington area (Table 2). The net effect over the whole period is clearly no change, a result which lies within the range set by the two FPC areas.

The control group presented a problem of interpretation because its prescribing rate was unaltered in the follow-up period, unlike either of the FPC areas or the two regions which it should have resembled. No explanation for this idiosyncratic behaviour — reasonable as it may be in itself — has been found.

Cost per item

During the intervention period (May 1979 to November 1980) the random group showed a significantly smaller rise in cost per item than the control group, but caught up in the follow-up period (November 1980 to November 1982) with an increase in cost per item much greater than anything found in the FPC areas or in the regions. The result over the whole period is one of no change if the areas and regions are taken as the standard for comparison.

The control group again showed surprising results, with an increase in cost per item in the follow-up period similar to that of the random group and much greater than that of either the areas or regions it might be expected to resemble. It is probably wise, therefore, to discount the fact that its increase over the total period is so much higher than that of the random group.

Cost per 1000 patients

Cost per 1000 patients is a function of the other two variables, so it is not surprising that the increase shown by the random group was greater in the follow-up period than that of the control group, the areas or the regions (Table 2). Over the whole period the figures for both groups lie within the range set by the two FPC areas.

As far as all the three above variables are concerned we must

conclude that the effects of the original intervention on the random group practice had disappeared between November 1980 and November 1982; the situation was presumably just what it would have been had the original project never taken place. With regard to generic prescribing, however, we did find a powerful residual effect of the intervention.

Table 3. Non-proprietary preparations dispensed as a percentage of all items dispensed: random and control groups, with comparative national data for May 1979, November 1980 and November 1982. (Control data uncorrected; figures for England published by DHSS.)

Group	May 1979	November 1980	November 1982
Random	16.2	23.1	20.2
Control	13.4	15.6	13.7
England	14.7	16.2	15.5

Generic prescribing

Table 3 shows the number of non-proprietary preparations dispensed as a percentage of all items dispensed for the random and control groups, with comparative figures for England as a whole. Both random and control groups reduced the extent of their generic prescribing a little in the follow-up period, but the difference in their reductions was not significant. The net effect for the whole period was that the random group finished with a higher level of generic prescribing from the start in May 1979 (20.2 per cent from an initial level of 16.2 per cent) than the controls (13.7 per cent from a level of 13.4 per cent) — and the difference between them in November 1982 was highly significant. The equivalent rise for England was also small (15.5 per cent from 14.7 per cent), suggesting that here there was no unusual behaviour by the control group.

It is impossible to be sure what the persistence of the higher

Table 4. The eight most frequently dispensed drugs in the minor therapeutic class for the random and control groups in November 1980 and November 1982 (uncorrected data).

November 1980			November 1982		
Minor therapeutic class of drug	Percentage of items	Items per 1000 patients	Minor therapeutic class of drug	Percentage of items	Items per 1000 patients
<i>Random group</i>					
Topical/skin	7.97	24.4	Topical/skin	7.65	26.0
Sedatives and tranquillizers	7.06	21.6	Diuretics	6.66	22.6
Hypnotics	6.23	19.1	Heart	6.02	20.5
Diuretics	6.03	18.5	Sedatives and tranquillizers	5.79	19.7
Penicillins	5.47	16.7	Hypnotics	5.59	19.0
Minor analgesics	5.24	16.0	Penicillins	5.25	17.8
Heart	4.93	15.1	Minor analgesics	5.19	17.6
NSAI	4.32	13.2	Asthma	4.33	14.7
<i>Control group</i>					
Topical/skin	8.03	27.7	Topical/skin	8.43	28.8
Sedatives and tranquillizers	6.42	22.1	Penicillins	5.88	20.1
Penicillins	5.48	18.9	Heart	5.84	20.0
Diuretics	5.38	18.5	Diuretics	5.54	18.9
Hypnotics	5.01	17.3	Sedatives and tranquillizers	5.07	17.3
Heart	4.94	17.0	Minor analgesics	4.94	16.9
Minor analgesics	4.83	16.7	NSAI	4.60	15.7
Expectorants and cough syrup	4.68	16.1	Asthma	4.34	14.8

NSAI = non-steroidal anti-inflammatory drugs.

level of generic prescribing means. If it is now a matter of principle and policy for the random group of doctors to prescribe generically more often, the intervention may be said to have had a major effect on them. The record group practices were well above the national average in May 1979 and made no significant change thereafter, so we can infer that their habits in this respect were dictated by such a policy. On the other hand, it is possible that the random group doctors are doing no more than continuing to use the generic names of a few specific drugs which they prescribe frequently at the moment, but which will disappear from their repertoires in the course of time. The rapid increase in their cost per item despite the high level of generic prescribing may be a sign that a process of attrition has already begun, though we have no direct evidence that this is the case.

Use of minor therapeutic drugs

Table 4 shows how the use of minor therapeutic classes of drug changed for the random and control groups respectively over the follow-up period.

It is interesting to note that the use of tranquillizers decreased in both groups, in line with national trends; drugs for heart problems on the other hand were dispensed considerably more often.

Discussion

This follow-up study showed that only 18 months after receiving the final analyses of the first study, the general practitioners showed prescribing habits similar to those before the intervention. The exception was an increase in generic prescribing, the meaning of which is not clear. It seems as though doctors' prescribing habits are in a state of dynamic equilibrium which is disturbed only when some strong new force is introduced, such as the motivation aroused by our information and discussions about prescribing.

At the time of the intervention the doctors' changes in prescribing habits were the expression of personal decisions freely reached; the rapidity of their reversal is therefore an indication of the power of whatever forces are counter-acting them. To support more lasting changes in the way doctors prescribe it looks as though a more sustained intervention is required, and perhaps an educational component should be added to harness the motivation for change which the doctors so clearly demonstrated.

Reference

1. Harris CM, Jarman B, Woodman E, *et al.* *Prescribing — a suitable case for treatment. Occasional paper 24.* London: Royal College of General Practitioners, 1984.

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Address for correspondence

Dr C.M. Harris, Department of General Practice, St. Mary's Hospital Medical School, Lisson Grove Health Centre, Gateforth Street, London NW8 8EG.

TRAINEE PROJECTS

Occasional Paper 29

What subjects are suitable for trainee projects? Do many get published? How should a research protocol be constructed and what are the characteristics of trainees who complete projects?

These and other topics are considered in *Trainee Projects, Occasional Paper 29*, which not only gives examples of actual projects (three prize-winning essays in the National Syntex Award Scheme and nearly 50 summaries of local award-winning papers) but also includes advice from Professor J. G. R. Howie on constructing a research protocol, Dr. D. J. Pereira Gray on encouraging project work, and Dr Michael Mead who writes from experience of carrying out projects as a trainee.

Trainee Projects, Occasional Paper 29 is available from the Publication Sales Office, Royal College of General Practitioners, 8 Queen Street, Edinburgh EH2 1JE, price £4.50, including postage. Payment should be made with order.

PRESCRIBING — A SUITABLE CASE FOR TREATMENT

Occasional Paper 24

General practitioner prescribing continues to attract attention, both in relation to quality and to costs. Quality concerns safety, relevance and effectiveness, while the cost of the average general practitioner's prescriptions now exceeds the cost of his income and expenses combined.

Prescribing — A Suitable Case for Treatment reports a study which examined both these factors. Prescriptions returned from the Prescription Pricing Authority were used to analyse the prescribing of a study group and of a group of matched controls; this was backed up by an educational programme involving discussions between members of the study group. The results suggest that with this kind of encouragement practitioners could reduce both the level and the cost of their prescribing.

Prescribing — A Suitable Case for Treatment, Occasional Paper 24, is available from the Publication Sales Office, Royal College of General Practitioners, 8 Queen Street, Edinburgh EH2 1JE, price £3.75, including postage. Payment should be made with order.