

**Title :**     *Attempts to control general practice prescribing costs from 1975 to 1993 with particular reference to the impact of GP fundholding*

**Author :**     *Maria-Benedicta Edwards*

**Degree :**     *PhD (1994)*

**College :**     *London School of Economics & Political Science*

UMI Number: U074543

All rights reserved

INFORMATION TO ALL USERS

The quality of this reproduction is dependent upon the quality of the copy submitted.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if material had to be removed, a note will indicate the deletion.



UMI U074543

Published by ProQuest LLC 2014. Copyright in the Dissertation held by the Author.  
Microform Edition © ProQuest LLC.

All rights reserved. This work is protected against  
unauthorized copying under Title 17, United States Code.



ProQuest LLC  
789 East Eisenhower Parkway  
P.O. Box 1346  
Ann Arbor, MI 48106-1346

THESES



F

7184

x210795084

## **ABSTRACT**

Under the 1991 NHS reforms some GPs have, for the first time, been given the opportunity to manage their own practice funds which includes an amount set for prescription drugs. This new budgetary scheme puts a ceiling on spending and gives practices the incentive to save on drugs and spend the money elsewhere. This study seeks to determine whether a series of measures, including the latter, have had any impact on prescribing trends. Prescribing trends of eight firstwave GP fundholding practices were compared with Family Health Service Authority (FHSA) averages. The study examines quarterly Prescribing, Analysis and Cost (PACT) data provided by the Prescription Pricing Authority (PPA) and sent to practices and FHSAs for at least one year prior to fundholding and two years post.

From this data measurements for overall expenditure, number of items prescribed, average cost per patient, generic percentages and practice list size were recorded. Trends in national data were reviewed including overall net ingredient costs, total number of items prescribed and average cost per patient from 1975 to 1992 inclusive. Interviews with practices and FHSAs were conducted to determine what policies had been implemented to manage the drugs budget more effectively.

The data indicates fundholding is broadly more successful than non-fundholding in restraining the drugs budget. Disaggregated data found the Indicative Prescribing Amount Scheme had not had the same impact as the GP Fundholding Scheme. GP fundholders did exceed their drugs budgets but, these overspends were less than for non-fundholding practices. Prior to fundholding few practices had implemented cost-containment strategies. Most had a general policy of generic prescribing but, pursued this more rigorously and introduced a whole range of other cost-containment strategies after fundholding. Cash limited budgets and financial incentives appear to have been sufficient to encourage GPs to seriously consider their prescribing costs.



## Contents

	<u>Page No</u>
Abstract	2
Acknowledgements	8
Introduction      What is this thesis about ?	9
Chapter 1          Why is the social market for pharmaceuticals so problematic ?	15
Chapter 2          How has the Government sought to contain the drugs bill ?	41
Chapter 3          Methodology	71
Chapter 4          Controlling prescribing costs from information and advice to cash limited budgets : 1975 to 1993	89
Chapter 5          Adapting to a cash limit for drugs	112
Chapter 6          Results Part I The National Picture	135
Chapter 7          Results Part II Family Health Service Authorities	148
Chapter 8          Results Part III Fundholding Practices	162
Chapter 9          A review of the past and a look to the future	188
References	205
Appendices :	
(A)    Practice profiles	219
(B)    Interview schedule I - Fundholding General Practices	237

(C)	Interview schedule II - Family Health Service Authorities	239
(D)	Figure (i) - calculating the percentage generic prescribing (prescribing & dispensing figures combined)	240
(E)	Tables i-iii : ranking practices according to their average cost per patient and per prescribing unit	241
(F)	Glossary of terms	242
(G)	Data collection sources	244
(H)	List of interviewees and contacts	245

## **List of Tables**

<b>Table</b>	<b>Title</b>	<b>Page No</b>
1.1	Real expenditure by UK General Practitioners on pharmaceuticals 1978-88	18
1.2	Share of drug reimbursement expenditure to total drug consumption costs in Denmark, Finland and Norway 1965-1980	19
1.3	European comparison of 1988 prescription drug consumption	20
1.4	Prescriptions by UK General Practitioners 1978-88	23
4.1	Prescribing unit values	97
5.1	Factors affecting prescribing choices	114
5.2	Expensive patients : Practice 1 (1991/92)	115
5.3	Expensive patients : Practice 3 (1991/92)	120
5.4	Expensive patients : Practice 5 (1991/92)	125
5.5	Expensive patients : Practice 8 (1991/92)	131
6.1	Number and net ingredient costs of prescriptions in England	142
6.2	Total share of net ingredient costs (£millions)	145
6.3	Total share of items (millions)	146
7.1	Number and net ingredient costs : Family Health Service Authority 1	154
7.2	Number and net ingredient costs : Family Health Service Authority 2	157
7.3	Number and net ingredient costs : Family Health Service Authority 3	160
8.1	Summary table of practice policies adopted after becoming fundholders	165
8.2	Prescribing data : Practice 1	168
8.3	Prescribing data : Practice 2	171

<b>Table</b>	<b>Title</b>	<b>Page No</b>
<b>8.4</b>	Prescribing data : Practice 3	174
<b>8.5</b>	Prescribing data : Practice 4	176
<b>8.6</b>	Prescribing data : Practice 5	179
<b>8.7</b>	Prescribing data : Practice 6	181
<b>8.8</b>	Prescribing data : Practice 7	183
<b>8.9</b>	Prescribing data : Practice 8	185
<b>9.1</b>	ASTRO-PU	198
<b>(i)</b>	Appendix E - Average cost per patient	241
<b>(ii)</b>	Appendix E - Average cost per prescribing unit	241
<b>(iii)</b>	Practice rank for average cost per patient & per prescribing unit	241

### **List of Figures**

<b>Figure</b>	<b>Title</b>	<b>Page No</b>
1.1	Chemico-pharmaceutical patents in five-yearly periods, 1910-1966	22
1.2	The market for prescription drugs	27
2.1	NHS prescription charges and items dispensed by chemists in the UK	53
2.2	NHS exempt prescription items dispensed by chemists and appliance contractors, UK	55
2.3	Prescription charges 1969-86	58
4.1	Purchasers and providers, the internal market	93
9.1	The 1994/95 formula (budget-setting)	197

## **Acknowledgements**

I would like to thank those GPs and especially the practice managers from the ten fundholding practices who agreed to cooperate in this study. I thank them for their help in my data collection and, for finding time in their very busy schedules to talk to me at great length.

My thanks to the medical and pharmaceutical advisers of the three Family Health Service Authorities who also agreed to cooperate in this study. They generously assisted in my data collection and, aided my understanding of the structure and application of the Reforms at Primary Health Care level.

I would also like to thank Mrs Diane Collier, Business Manager, Norfolk Family Health Service Authority who was an enormous help in the early days of data collection and, to my understanding of the structure of Family Health Service Authorities.

My appreciation is also extended to Misses J Wakefield and V Peel of the Prescription Pricing Authority, who provided me with the national annual prescribing data and other bits of information.

My very special thanks goes to Dave Roberts, the Manager of the Leeds University Prescribing Research Unit, for his patience, understanding, input and help in sorting out my ideas.

To Howard Glennerster, Professor of Social Policy at the London School of Economics & Political Science, I offer my utmost thanks for being an excellent tutor.

To Grant Curtis, a very special friend. I thank him for his emotional support and unending patience. For his encouragement and his unfaltering belief I could do it.

## **Introduction**

### **What is this thesis about ?**

This is a study of government attempts to control the growth in expenditure on general practitioner (GP) generated prescription drugs, particularly in the UK and especially since 1975. Particular attention is focused on the most recently implemented methods of cost-containment under the 1991 National Health Service (NHS) Reforms.

**Chapter 1** examines the reasons behind government attempts to curb expenditure on prescription drugs. We see that primary health care is one of the fastest growing elements of the NHS and that within primary health care, prescription drugs are rising the fastest. This rapid growth in drug expenditure resulted from a combination of factors. These include an 'explosion' in the pharmaceutical industry's output brought about by the scientific revolution at about the same time the demand for health care increased rapidly as a result of the introduction of the NHS. In addition, changes in social and demographic trends, patterns of illness and attitudes towards therapeutic delivery have contributed to the expansion of the industry.

The problem is further complicated by the unique structure of the pharmaceutical market which is dominated by a three tiered system. Within this market structure both the primary and secondary consumers are not accountable for the cost of their actions. This responsibility is attached to a third party payer who has little or no input about the type of purchase or its cost. The market is therefore relatively inelastic to price. This rapid growth in drug expenditure was sustainable whilst the economic boom of the 1950s/60s continued. However, with the economic crisis of the mid 1970s the government had to seek ways to cut back on public spending.

**Chapter 2** examines three ways in which the government tried to contain drug costs : regulating industry prices and profits, curbing patient demand by the use of prescription charges and, influencing prescribers' attitudes and choices through persuasive mechanisms. The role of the government in the pharmaceutical industry is twofold. On the one hand, as the monopsonist purchaser of a privately produced product it seeks to keep prices down. Conflicting with this need is the need to maintain a lucrative UK export industry which requires prices to be kept at a profitable level. To circumvent this problem, the government seeks to regulate industry profits rather than product prices thereby safeguarding its dual role. Each year companies have to negotiate with the government the amount of profit they will be permitted to keep. They are however, allowed to set their own prices for new products but require official approval for any subsequent price increases.

Attempts to curb patient demand have proved relatively unsuccessful despite a policy of regular increases in prescription charges. This results from increases in the number of exempt categories which have severely restricted prescription charges' ability to restrain volume demand. Attempts to influence prescribers' attitudes have also failed to produce the hoped for result. Given the lack of any real incentive to encourage GPs to prescribe more cost-effectively, the results are perhaps not surprising. Thus, this failure by successive governments to satisfactorily contain drug expenditure led to the revision of the existing methods of regulation and the subsequent reforms.

**Chapter 3** discusses the different types of methodology employed in the study and outlines the study's aims and objectives. A brief description of each of the sample practices is provided and a description given of the type of analysis undertaken.



**Chapter 4** illustrates how the focus of government regulation moved from the industry and patient to the profession. Up until 1985 the government had concentrated on regulating industry prices and curbing patient demand. GPs had experienced very few constraints on their 'freedom' to prescribe. Those controls that did exist proved largely ineffectual in encouraging GPs to prescribe more cost-effectively. Thus, the government reassessed the mechanisms employed to influence GPs' choice of drug therapy based on cost. The outcome of the NHS Review of the late 1980s was, a redistribution of NHS funds away from central provision to the grassroots level and, a restructuring of the main element of NHS primary health care services. GPs who met a fixed set of criteria were offered the opportunity to manage their own practice budget, which included an allowance for drugs.

The 'carrot' used to entice GPs to become fundholders was the opportunity to keep any savings they made within the practice budget to re-invest in other areas of the practice. However, this also meant practices were faced with immediate penalties should they overspend on any element of their budget. Thus, faced with a cash limited budget practices were forced to make choices and agree priorities about the use of financial resources they had at their disposal. Those practices who were not fundholders remained essentially uncash limited and, although they were notified of a target budget (Indicative Prescribing Amount (IPA)), they faced few 'real' sanctions should they exceed their IPAs. With the introduction of this new system regulation is moving away from the use of persuasion to actual cash limits.

**Chapter 5** examines the approaches adopted by eight GP fundholding practices in their attempts to adapt to the Reforms and manage their own budgets. It also looks at the problems they face in respect of prescribing. GPs are faced with a range of intractable problems which makes the task of

developing and implementing a strategy to counteract their effects very difficult. Some of these problems have a long history and relate to the social and demographic factors which practices can do little about. Others are of a more recent making and appear to relate directly to the NHS Reforms. Most practices cited examples of hospitals shifting some of their prescribing costs over to them; new requirements in the GP contract to screen patients were identifying more and more patients requiring expensive and long-term treatments.

Despite these problems, practices were tackling them head on. The majority of fundholding practices sought to increase their rate of generic prescribing in conjunction with a range of other strategies and, to review their progress at regular practice meetings. Despite the small sample size and absence of a matched control group, the evidence presented suggests this group of fundholding practices is indicative of others and, their intensity of action is not being matched by non-fundholders.

**Chapter 6** describes the impact of cost-containment mechanisms instituted between 1975 and 1992 on national prescribing trends. 1983 appeared to be the turning point both in terms of expenditure growth and government's approach to policy. Government regulation of industry profits brought about the most change in expenditure growth up to 1983. Since then the government embarked on a policy of regularly reviewing drug expenditure in respect of the industry, profession and the patient. This had the effect of slowing the rise in drug expenditure at a time when the rate of inflation was increasing. Although these policies have failed to reduce GPs' overall rate of prescribing, they have successfully changed the nature of that prescribing. GPs are now employing a greater number of generic preparations. Patient demand has however continued to prove more difficult to control mainly because of, the disproportionate increase in

the number of exempt prescriptions compared with those where a charge is levied.

**In Chapter 7** the prescribing trends of three Family Health Service Authorities (FHSAs) are examined for the period immediately before and after the reforms. The chapter endeavours to determine whether these FHSAs have managed to contain their drug spend within a firm budget (ie. cash limited) and, what impact the two GP schemes had on overall FHSA drug spend. In terms of total drug spend, the reforms appear to have done little curb expenditure. Only one FHSA demonstrated an ability to contain spend within its firm budget. The other two FHSAs overspent on their budgets annually and, both increased their percentage overspend in the second year of the reforms. However, the disaggregated data revealed that the IPA Scheme was responsible for the level of overspend displayed by the FHSA. The GP Fundholding Schemes did overspend on their budgets but, these were nearer to their budget limits compared to the IPA Schemes. This result supported the government's contentions that direct incentives and cash limits would motivate GPs to modify their behaviour.

**Chapter 8** analyzes the prescribing trends of the eight GP fundholding practices in an attempt to understand the process by which they achieved their levels of prescribing. Practices had introduced a range of cost-containment strategies mostly after they had become fundholders. In combination these measures seemed to have reduced the rate of expansion below that found in the FHSA as a whole. The research method could not indicate which of these measures proved the most successful.

**Finally, Chapter 9** summarizes the study and its findings. It examines the proposed amendments to certain areas of the reforms in respect of GP fundholding. At the moment the system is unfair to fundholders who are constrained by

financial boundaries which non-fundholders are not. To secure the future success of fundholding requires cash limited budget to be extended to all practices. However, the question we should be asking is : 'should we be putting a cash limit on drugs at all and, what are the implications for patient health ?'. There is little or no research evidence on this and without it, we cannot make a final judgement on fundholding and cash limits.

## Chapter 1

*Why is the social market for  
pharmaceuticals so problematic ?*

## Introduction

During the 30 years prior to the mid 1980s expenditure on health care rose faster than Gross National Product (GNP) in most industrialised countries. Rapid economic growth made it possible for real disposable income to increase rapidly despite parallel growth of public expenditure in many social programmes. However, the oil crises of the 1970s, rising unemployment and inflation, nil or low growth at a time of declining GNP resulted in social security schemes facing a crisis in financing. Many countries showed clear signs of tax resistance which brought about political response. Income was no longer growing in real terms and at the same time, provision had to be made for the growing number of unemployed as well as the rising numbers of pensioners. Thus, within this wider context a search for a means to contain the cost of health care had to be sought.

This chapter describes the factors which have contributed to the expansion of the pharmaceutical industry and its output and, why these subsequently led to the government seeking ways to curb drug expenditure. The chapter begins by looking at the size of the problem and how the 'scientific' revolution, demographic and therapeutic changes have contributed to the growth in output of the industry. The second part of the chapter focuses on the nature of the problem and examines the demand for and supply of pharmaceuticals and discusses how these have influenced the market.

## The size of the problem

Primary health care is one of the fastest growing elements of the UK National Health Service (NHS) spending and, until recently it was not cash limited unlike hospital and community services. Within primary health care,

pharmaceutical (<sup>1</sup>) costs were rising the fastest. Since the introduction of the NHS, the pharmaceutical bill rose nearly fivefold from £40m to £180m or £3.25 per capita per annum (Dunlop 1971). This escalation of costs has continued and between 1978 and 1988 for example, UK spending on pharmaceuticals at manufacturers' prices was in excess of £3 billion. £2.4 billion of this bill was accounted for by sales to the NHS of which, GPs' prescribed medicines accounted for 82% of this figure compared to hospital prescribing at 18%. The rise in real terms was £696 million with an average annual rate of increase of nearly 5%. Less than one-quarter of this was due to the increase in the number of prescriptions ie. in the number of individual items prescribed, and about three-quarters to the increase in their unit price (ie. cost per item) relative to other prices.

During the same period sales of over the counter drugs (OTC) amounted to £650 million (Burstall 1990a). However, within the context of total NHS spending expenditure on pharmaceuticals this is only marginal. As a proportion of the total NHS budget, expenditure on medicines by GPs rose from 6.8 % to 7.9% between 1978 and 1988 (Table 1.1). This trend has been moving steadily upwards throughout the decade.

Moreover, during this period spending on this account increased in real terms from 0.36% to 0.46% of Gross Domestic Product ((GDP) (Table 1.1)).

---

<sup>1</sup> Pharmaceuticals in the context of this discussion are defined as drugs prescribed by the general practitioner.

**Real Expenditure by UK General Practitioners  
on Pharmaceuticals 1978-88**

Year	Prescrip- tions (m)	Unit Cost (1988 £)	Total exp. (m)	Expenditure in 1988 prices Per capita	As % NHS budget	As % GDP
1978	378.1	3.09	1167	20.80	6.8	0.36
1979	375.1	3.14	1178	20.90	6.7	0.36
1980	374.0	3.32	1241	22.00	6.5	0.39
1981	369.9	3.38	1289	22.90	6.6	0.41
1982	383.3	3.61	1385	24.60	7.3	0.44
1983	389.1	3.85	1497	26.60	7.2	0.45
1984	395.6	3.85	1525	27.00	7.4	0.45
1985	393.1	3.86	1517	26.80	7.3	0.44
1986	397.6	4.03	1601	28.20	7.5	0.44
1987	413.6	4.18	1728	30.40	7.7	0.45
1988	427.2	4.36	1863	32.60	7.9	0.46
<b>% growth</b>						
1978-88	13.0	41.1	59.6	56.7	16.2	30.6

**TABLE 1.1**

Source: Compendium of Health Statistics, HMSO, Economic Trends 1989, Annual Supplement table 25, 128)

Reference: (Taken from Burstall 1990a)

Notes: All figures are at manufacturers' prices and exclude dispensing doctors and have been deflated using the retail price index.

Other countries have also witnessed an increase in government and third party payer expenditure for drug reimbursement over the years even where total drug consumption relative to GNP and total health care costs have been decreasing. In the Nordic countries for example, the scale of drug subsidies in relation to total drug expenditure rose, between 1965 and 1989 from 27% to 34% (Denmark), 17% to 38% (Finland) and 13% to 33% (Table 1.2). In comparison, UK spending on pharmaceuticals in relation to its European colleagues is less, with the exception of Spain (Table 1.3)



Share of drug reimbursement expenditures to total drug consumption costs in Denmark, Finland and Norway 1965 - 1980 (with VAT)

Year	Denmark (%)	Per Capita	Finland (%)	Per Capita	Norway (%)	Per Capita
1965	27.0	73	17.0	90	13.2	54
1966	-		18.3		15.3	
1967	30.9		20.3		17.0	
1968	31.8		22.7		18.2	
1969	32.5		22.7		19.2	
1970	34.0	128	25.0	118	19.3	103
1971	34.7		28.3		20.9	
1972	35.5		31.9		22.0	
1973	33.5		33.9		23.6	
1974	33.7		37.1		26.3	
1975	32.0	237	38.0	229	38.3	216
1976	31.6		39.1		29.5	
1977	32.8		39.8		30.8	
1978	31.2		38.8		32.0	
1979	33.1		38.9		33.2	
1980	34.0	452	38.0	384	33.0	382

TABLE 1.2

Source : See reference

Reference : Lindgren & Silverberg (1985) <sup>2</sup>

In 1980 the conversion rates of the nordic currencies to UK pounds were as follows :

	£
Danish crown (DKK)	13.110
Finnish mark (FM)	9.216
Norwegian crown (NOK)	11.513
Swedish crown (SEK)	9.850

<sup>2</sup> Drug reimbursement here refers only to refunds made by the national health insurance of the respective countries and does not refer to the total public expenditure on drugs.

### European comparison of 1988 prescription drug consumption

Country	Per capita drug spending £
-----	-----
Belgium	73
France	80
FRG	87
Italy	74
Netherlands	47
Spain	38
UK	42
USA	75
-----	-----

**Table 1.3**

Source : BEUC, Glaxo, national sources

Adapted from Burstall (1990 Table 4)

Expenditure and price levels at manufacturers' prices

### The pharmacological revolution

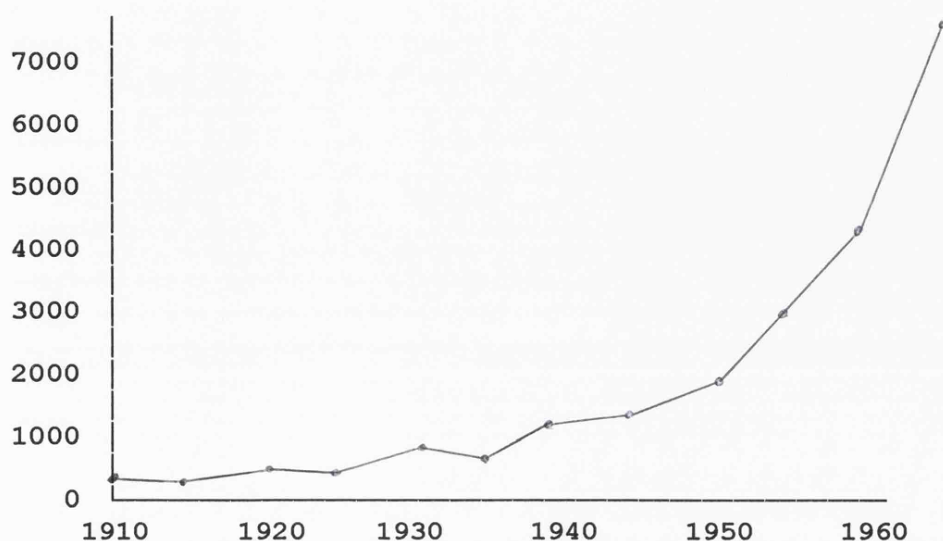
Prior to the 1950s the drug industry was virtually non-existent. Pre 1935 manufacturers of medicines were still mainly concerned with the manufacture and sale of galenical medicines derived from naturally occurring animal and vegetable ingredients such as, vitamins, quinine, digitalis, ipecacuanha, mercury and salvarsan; of which salvarsan was the only truly modern preparation 'capable of attacking causes'. However, 1935 heralded the start of the 'scientific and therapeutic revolution' of medicine and pharmacology with the discovery of the antimicrobial qualities of Prontosil (a red dye) and, the subsequent establishment a few years later that sulphonilamide, the active constituent of the dye, was the active therapy. Following the discovery of Prontosil a new generation of medicines derived from specific active chemical ingredients synthesized by new large-scale industrial pharmaceutical research laboratories started to emerge.

Although penicillin was originally discovered in 1928 it only first became available for practical purposes after 1940.

This was followed three years later (ie. 1943) by the discovery of a new and effective drug, known as streptomycin, used in the treatment of tuberculosis. By 1949 the first of a broad spectrum of antibiotics (chloramphenicol) had been introduced and by 1950 corticosteroids, antihistamines, anti-depressants, diuretics and many other preparations had been discovered. Finally, 1953 saw the first antibiotic whose chemical formula was already known prior to the drug itself being produced (ie. tetracycline) (Reekie & Weber 1979).

Patent activity data on pharmaceuticals in London from 1900 shows a tremendous upsurge of patenting after 1935 reflecting the dynamic discoveries of the 1940/50s (Figure 1.1). As a consequence of this scientific revolution combined with an increasing demand for the benefits of good health brought about by the NHS, there was a steady expansion in the output of the industry by existing companies, by entrants from other industries and by immigrant subsidiaries bringing with them discoveries and products unique to themselves. The implications for the medical profession were significant. The pre 1940s restrained commercial atmosphere and the modest sales promotion activities of the small traditional 'ethical galenical houses' changed. Suddenly full force of the professional marketing activities of the new large-scale international pharmaceutical manufacturers bore down on GPs.

**Chemico-pharmaceutical patents in five-yearly periods, 1910-1966**



**Figure 1.1**

Source : 'Patent Data as a Guide to Industrial Activity',  
Research Policy, 2 (1973) p.249

Reference: Reekie WD. Weber MH. (1979)

Notes : The 1910 observation is based on ten years  
preceding data

**Demographic and therapeutic changes**

Other predisposing factors were at work creating a potential demand for the new products, notably demographic trends. UK figures during the ten year period 1978-88 show a rise in the population of just over 1% with a 9% (Burstall in Culyer 1990) rise in those of pensionable age ie. men over 65 and women over 60, and a 30% rise in the over 75s. Even within this group a sub-group exists with more acute needs. It is estimated that 80-85 year olds consume between five and ten times the value of pharmaceuticals as the 60-64 year old age group. This implies that, not only do the elderly need more health care of all kinds but, that this need increases exponentially with age. Indeed, 41% of the total prescriptions written by GPs ie. more than half the rise in the GP drugs bill during this decade, can be accounted for by

the elderly. This shows that on average this section of the population received nearly four times as many prescriptions per capita as other adults in comparison to a slight drop during the decade for other age-groups.

These figures imply that changes in the national age structure influence patterns of prescribing and reveal a change in attitude towards therapeutic delivery which now favours more intensive forms of treatment. During 1978-88 for example, there was an increase in the number of prescriptions written for the cardiovascular system, anti-asthma drugs, anti-inflammatories and for H-2 antagonists to treat peptic ulcers. All of these account for 90% of the net increase in prescriptions (Table 1.4) (Burstall 1990a).

**Prescriptions by UK General Practitioners 1978-88**

Category	Prescriptions (m)		Unit Cost (1988)		Expenditure (1988 £m)	
	1978	1988	1978	1988	1978	1988
<b>Central Nervous System</b>	<b>94</b>	<b>84</b>	<b>2.07</b>	<b>2.18</b>	<b>195</b>	<b>183</b>
- sedatives & tranquillisers	26	12	1.65	1.34	43	16
- hypnotics	18	17	1.71	1.23	31	21
- minor analgesics	24	26	1.71	1.20	41	31
- major analgesics	4	6	2.31	4.10	10	25
<b>Cardiovascular system</b>	<b>53</b>	<b>73</b>	<b>4.98</b>	<b>5.70</b>	<b>264</b>	<b>416</b>
- heart drugs	18	32	5.72	6.47	103	207
- diuretics	21	26	3.23	2.58	68	67
- antihypertensives	7	10	7.63	10.13	53	101
<b>Gastrointestinal system</b>	<b>28</b>	<b>33</b>	<b>3.11</b>	<b>6.84</b>	<b>87</b>	<b>226</b>
- H-2 antagonists	2	10	14.22	16.02	33	159
<b>Respiratory system</b>	<b>41</b>	<b>38</b>	<b>2.47</b>	<b>4.94</b>	<b>101</b>	<b>188</b>
- asthma preparations	14	28	4.53	6.37	63	172
- cough suppressants	21	8	1.14	0.73	24	6
<b>Rheumatic preparations</b>	<b>18</b>	<b>25</b>	<b>6.72</b>	<b>8.44</b>	<b>118</b>	<b>211</b>
Anti-inflammatories	16	23	6.52	8.41	104	192
<b>TOTAL</b>	<b>234</b>	<b>253</b>	<b>3.27</b>	<b>4.84</b>	<b>765</b>	<b>1224</b>

**Table 1.4**

Source : Author's estimates based on own study

Reference : Adapted from Burstall 1990a p70

Notes : Excluding dispensing doctors, costs and expenditures at manufacturers' prices

This growth appears to be related more to the wider use of expensive drugs than increases in unit prices (ie. cost per item). Where unit prices have risen substantially (anti-asthma and antihypertensive drugs) the cause is the replacement of older, cheaper products by newer, more expensive and much more effective alternatives. Indications are that some of these changes are the result of the impact of an ageing population in particular need of treatment for circulatory problems and arthritis and, is reflected by the increase in prescriptions written for cardiovascular medicines and anti-inflammatories. However, it must be said that some conditions are increasing in the population as a whole such as diabetes and asthma. In the latter case for example, consultations doubled between 1971/2 and 1981/2.

It is important to note that the growth in prescriptions is not due to an increase in what might be considered 'comfort' drugs. Evidence shows a sharp fall in prescriptions of tranquillisers, vitamins and gastro-intestinal sedatives with most of the drugs listed in Table 1.4 being used to treat conditions which are an actual or potential threat to life or, which cause considerable suffering (Burstall 1990a).

### **The nature of the problem**

#### **A demand model for pharmaceuticals**

In many respects the pharmaceutical industry is unique. Ideally a market model is determined by the process of competition and the economic interplay between the forces of demand and supply. Price is determined by the consumer's willingness to pay for the final product supplied. The desire for prescription drugs may be perceived as a desire for a 'normal good' ie. health stock (Grossman in Cullis & West 1979). In an event, such as sickness or accident, a consumer's health stock is reduced below his desired level he will seek to increase his health status by combining health

care inputs, such as doctor visits, prescription drugs and his own time according to a health production function. Economic theory also predicts that if the price of one health care input increases relative to others demand for that input will fall. Thus, as the price of substitute medical care inputs, such as over the counter medicines (OTC) purchased without prescription increases (falls) the demand for prescription drugs will also increase (falls) ie. substitute inputs display a positive cross-price elasticity.

This conventional demand model is seen to work for everyday goods and services. The consumer has full sovereignty and is able to assess the quality of goods and/or services he/she is purchasing by referring to a number of media such as, promotional and sales literature, previous purchases, family, friends, sales assistants and professionals. By pooling these sources of information the consumer is able to make a choice about the purchase. However, characteristics of the health care market make it difficult for the consumer to purchase for himself. The first problem the consumer faces is information failure. The complexities of medical science and medical care make it impossible for a consumer, with no or little training, to have full knowledge of the situation and be able to make a rational decision about diagnoses and treatments. In addition, for reasons of safety, time and economy the practice of medicine is restricted to those able by law to practice.

The role of professional advisers in the UK is taken by the general practitioner (GP). The GP is the best qualified person to advise on whether or not the patient needs to go to hospital, which hospitals can offer the best service and who are the best specialists to consult. In instances where patients require hospital treatment it is more often than not the GP who refers the patients. The GP is the patient's key adviser and, acting on his/her behalf the GP is the gatekeeper to the NHS as a whole. Thus, the consumer's sovereignty is displaced to this agent who institutes demands

on his/her behalf. The demand for pharmaceuticals, although in the first instance initiated by the consumer, is primarily determined by the GP unless the consumer is demanding non-prescription, over the counter (OTC) drugs. Hence, we have moved from the traditional market with a single sovereign consumer to a two consumer market, that of the consumer and the agent (Figure 1.2).

This model is further complicated by the addition of a third party that of the purchaser (Figure 1.2). This purchaser is unlike any other. It is responsible for paying for other peoples' choices but has little or no influence over the type of purchase or the cost. It isolates both the primary and secondary consumer from the source of payment thus removing any direct interest in either economy or cost of their actions. The industry is therefore relatively insensitive to price (Teeling-Smith 1987).

Consumer ignorance is further compounded by uncertainty; uncertainty about the irregularity and unpredictability of illness episodes and, the amount of health care and drug treatment likely to be demanded (Layard 1972). The market solution to uncertainty is insurance but insurance schemes, like other third party payment systems such as the NHS (UK) and Health Maintenance Organizations (USA), are isolated from the demander and are subject to inefficiency. The probabilities relevant to health care insurance are generally estimatable. Problems such as adverse selection and moral hazard can lead to the market either providing an inefficient quantity of insurance or, failing to provide it at all. Devices like coinsurance, deductors and inspection are used to counteract the worst effects of moral hazard. They are at best however, only partial solutions and are generally insufficient to curtail demand to an efficient level as they focus on the consumer rather than the secondary demander.



### The Market for Prescription Drugs

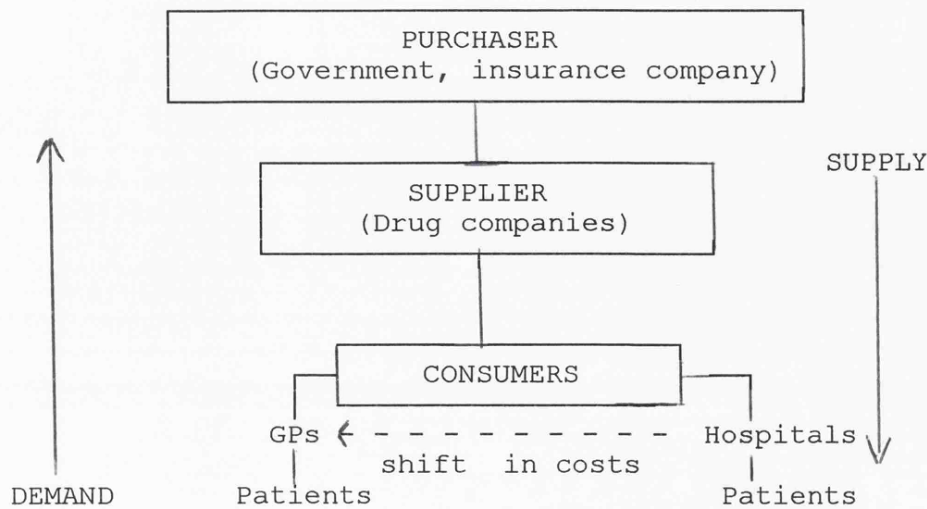


Figure 1.2

#### The supply of pharmaceuticals

It is not only the demand model for pharmaceuticals which is unusual, the supply side model of the market has its own 'peculiarities'. Firstly, unlike other industries the pharmaceutical industry has a rather unique relationship with the consumers and purchasers of its products. As a result of information failure most medicines, with the exception of OTC drugs, are 'sold' not to those who take them but to the doctors who prescribe them. Therefore, special and often expensive forms of marketing are necessary and as a result, the industry spends heavily on research and marketing.

Secondly, it has a unique relationship with a purchaser who is not the consumer (Figure 1.2). In the UK this relationship is further complicated by the purchaser's, ie. government, dual role within the industry. As a monopsonist purchaser of a privately produced product the government wants to keep prices and subsequently costs down. On the other hand, it is responsible for maintaining a lucrative UK export industry requiring prices to be kept at a profitable

level. Consequently, the industry is subject to quite an unusual degree of government regulation.

Despite these differences, the pharmaceutical industry is nevertheless like other industries in many ways. For example, its companies seek to maximise profits through increased sales turnover and achieve maximum market share. Moreover, they endeavour to introduce new products quickly in order to obtain rapid returns on heavy research investment via the development of multinational markets. However, the 'necessity' value of drugs lead many<sup>to</sup> see an industry selling drugs for profit as unethical. The industry is frequently accused of selling its products at highly inflated prices thereby making unacceptably high profits. This perception is in contrast to that of other types of markets where price competition is regarded as important and virtuous.

When economists examine the structure of any industry they measure the size of the competition within the markets by the concentration ratio ie. number of competing firms. A high concentration ratio suggests the market is controlled by a single (monopoly) or few (oligopoly) members. Consequently, there will be little competition and a greater opportunity for firms to collude with each other to set prices (Scherer in Feldstein 1988). In contrast, a low concentration ratio implies smaller market shares and thus greater competition.

During the mid 1960s a committee commissioned by the then government to examine the relationship of the pharmaceutical industry in Great Britain with the NHS estimated that, 120 firms were engaged in the manufacture and distribution of ethical, ie. prescription, drugs. Of these, 60 accounted for more than 95% of all sales to the NHS whilst 53 supplied approximately 90% (Sainsbury Committee 1967). Six years later (1973) it had been estimated that the leading 20 firms accounted for 75% (Blum 1981).

USA research findings during the early 1970s noted the existence of approximately 1,000 drug firms with a four firm concentration ratio of 28% with no one firm accounting for more than 8% of the total drug sales. When these figures are compared to those for cars (99%), cigarettes (84%), soaps and detergents (62%) it seems that the pharmaceutical industry is highly competitive by comparison. However, the studies cited examine concentration ratios with respect to total pharmaceutical sales as though they reflect a single product market like steel, cars and chemicals. In fact, the pharmaceutical industry comprises a number of individual sub-markets with higher concentration ratios than is shown in the overall pharmaceutical market as Walter S Measday (Blum 1981) illustrates :

"the overall drug market is fragmented into a number of separate, non-competing therapeutic markets; antibiotics are not substitutes for anti-diabetic drugs, and tranquilizers are not substitutes for vitamins. Manufacturers do not compete on an industry wise basis and hence, concentration must be evaluated within the various therapeutic groups of drugs in which competition does occur".

Measday's observations illustrate the need for caution in measuring competition within the industry. However, he fails to define the criteria for determining a therapeutic market. A number of researchers have directed their attention to this issue focusing primarily on demand side substitutability ranging from, the therapeutic effects of drugs on specific illnesses to, physicians' prescribing habits ((Hornbrook (<sup>3</sup>) in Blum 1981; Schwartzman 1976 (<sup>4</sup>)). In comparison, supply sided criterion, as defined by Stigler (1955 (<sup>5</sup>) in Blum 1981) are more likely to result in lower concentration

---

<sup>3</sup> Hornbrook's criteria centred on whether drugs produced had essentially the same therapeutic effects

<sup>4</sup> Schwartzman's definition of therapeutic markets was evaluated by examining physicians' prescribing habits.

<sup>5</sup> Stigler - when a producer in a market shifts, on a large scale, to producing another product both should then be combined into a single market. For example, if a firm producing antibiotics can quickly shift and produce anti-arthritis they should be included in a single market definition.

ratios. Thus giving rise to a possible misrepresentation of the size of the market and the number of competitors.

The use of concentration ratios as a measurement tool of competition and market power within the pharmaceutical industry is questionable. It is a 'static' measure of market power and, although therapeutic markets may show a high concentration ratio at a given point in time, there is a high turnover rate in market shares indicating fairly 'dynamic' competition (Blum 1981). Nevertheless, concentration ratios are perhaps the most comprehensive measurement tool available to determine market power and competition. The evidence put forward suggests that competition for particular products is less than it seems at first sight. Where competition is dynamic is in the production of established drugs. This has however led to the pharmaceutical industry developing strategies to limit that form of competition.

#### **Patents and promotional expenditure**

There are natural and man made reasons for limited competition in any market. Economies of scale for example, are a national feature of the any industry. However, industries deliberately employ a number of strategies aimed at preventing new entrants into the market place. Patents and expenditure on advertising are for example, often seen as the most restrictive. The issue of patent rights in any industry is shrouded by controversy. On the one hand, industries argue patents are a necessary protection against the loss of large stakes invested in research and development of new products. Once in the market place these new products are easily copied. Thus, without patent protection the necessary outlay of resources could not be justifiably invested in inventive activity unless, the potential returns were commensurate with the technical risk and effort involved.

Others argue that patents are an unnecessary incentive for innovation because innovators are already protected by other barriers. These include, lack of appropriate technology and service organizations and, customers' dependence on the technical services supplied with the products which other companies may find difficult to match in quality of services (Schwartzman 1976). A major criticism of the patent system however is, it is effective in creating monopoly power within an industry and thus restricts competition. Lack of competition is achieved by guaranteeing the innovator the exclusive legal right to the invention for a specified number of years. Thereby inhibiting free competition and promoting monopolistic pricing by discouraging innovation and encouraging only minor modifications in order to provide patentability. Contrary to this view Davis (1976) argued, patents actually stimulate rather than hinder competition. Patents are published and are therefore publicly available. This results in competitors frequently adopting applied research into new compounds in order to develop significantly more advanced products by 'inventing' round the basic patent.

The pharmaceutical industry perhaps receives more criticism of its use of the patent system than any other industry. Critics argue the industry exploits patents and/or high promotional expenditures to differentiate brand name drugs in the mind of physicians. This in turn acts as to prevent new entrants entering into the market place. Walker (1971) observed for example, the seemingly indiscriminate patenting by large firms of single chemical entities over a given period of time. During 1950-60 the mean number of single chemical entities introduced per year in the US was 41.8. In 1961, of the 970 patents granted on medicines, 67.8% or 658 were granted on single entities ie. single chemical compounds, vaccines, serums, and extracts from plant and animal sources. The fact that 15.7 times more patents were granted on these single entities during one year led him to suspect that patents were being used as a vehicle for

excluding smaller firms from the second-best products and processes.

Whilst many of these patents were undoubtedly granted to individuals unconnected with the drug industry, such recipients would most likely eventually turn to the drug industry for profitable use of their products. Therefore, the assumption is that most of these patents were eventually assigned to large firms. More importantly, once in the hands of a large firm product patents restrict entry into the market by forcing a potentially smaller competitor to either remain out of the market, seek a license from the holder to produce the product or, produce the product without a license under the threat of legal action.

Reekie (1975) noted that 72% of the market is accounted for by patented products. Hence, given the high degree of concentration in therapeutic sub-markets, it is likely that the market will adhere more to a theory of oligopoly which predicts price inflexibility. Thus, for the industry to maintain its profits firms are more likely to adjust their pricing strategies according to the actions of those rivals whose products are close substitutes (Feldstein 1988) and, that price competition could effectively be precluded because licenses are usually only granted at royalty rates ensuring almost equivalent pricing (Reekie 1975). Although, it must be noted that where the concentration ratio is low, as in the overall market, this situation may not necessarily apply.

Critics argue that these favourable market conditions are ripe for exploitation by the pharmaceutical companies who have little or no incentive to engage in price competition in order to gain a larger share of the market (Taylor & Maynard 1990). The industry counter claims these accusations of collusion and price setting and argues that, prices must be viewed in the context of uncertainty about how well a product will do in the market and, whether this will be sufficient to cover fully allocated average costs. Original prices of

drugs tend to be fixed on the basis of uncertain sales forecasts and competitive product prices already available. Firms therefore fix prices at a level which is more or less equal to those of competitive products and, if the product is to be one of several in the same therapeutic class then prices may be marginally less than those of earlier products.

Price reduction of an original drug is unlikely after the entry of small generic producers because smaller competitors have little chance of increasing their market share. Therefore, larger manufacturers realise it is not worth risking immediate loss of income by cutting price when reduction in quantity sold owing to new entry is gradual. In contrast however, the entry of major firms producing a generically similar drug and selling it at a lower price will have a greater impact on the price of the original product and will usually force the original firm to cut its own price.

A patented product usually exhibits only a limited monopoly power over production and price as close substitutes enter the market and subsequently introduce competition pushing prices down. In other cases, improvements occurring in competing drugs selling at similar prices to existing drugs mean in essence that their quality-adjusted prices decline. It therefore appears that, over time both the number and closeness of substitutes within a therapeutic market increase thereby changing the price elasticity of demand. This change in price elasticity reveals greater price competition and historically it has been shown that no leading product has maintained its market share position for more than a limited number of years. 'In essence, preeminence is temporary'. Again therefore, the capacity of the industry to restrict competition is real but time is limited (Feldstein 1988).

## Innovation and the patent system

More than two-thirds of prescription drugs have patent protection making entry into therapeutic markets dependent upon some kind of chemical product differentiation. Indeed, unless a firm pursues an innovative strategy it must cut prices in an attempt to gain a significant share of a market.

Patent protection and restricted price opportunities (<sup>6</sup>) and, sales of old unpatented drugs which have usually been too small to be attractive, has led most large pharmaceutical manufacturers to rely on innovation (Schwartzman 1976).

Innovation is perceived as an effective entry barrier because, it places a great financial burden on the manufacturer to invest heavily in research and development programmes in order to discover and develop new products which may or may not win large sales. Research and development innovation however, effectively sows the seeds of its own destruction by alerting potential competitors, via the patent system, to the potential profitability of a new or improved method of therapy offered by a new drug. This exposes the 'product' company to an increased risk of pre-emption to the market by a similar or more advanced compound.

Even after years of resource input and empirical research a product may not pass the legal and safety requirements which allow it to be marketed. Thus, for firms without large budgets and resources to invest in the risk and uncertainty stakes this strategy may not be feasible and consequently may result in there being fewer competitors.

The pharmaceutical industry is characterized by a high level of innovation of highly differentiated products. New product competition through product innovation is one of the dominant forms of competition within the pharmaceutical industry (James 1977). In fact, an indication of the importance of product competition and innovation in the drug industry is

---

<sup>6</sup> Few important drugs have been unprotected by patents during most of the period since World War Two.



its expenditures on research and development. Estimates of research and development expenditure are the around 15% of sales with the percentage varying between 10.5% and 15.0% since 1965. At 15% of sales, the pharmaceutical industry's research and development expenditure is exceeded by only two other industries, information processing and semiconductors (Feldstein 1988).

Research and development in the pharmaceutical industry is no different from research and development in any other kind of discipline in that it possesses a record of absolute successes, failures and 'non-successes'. Furthermore, the very existence of even minor modifications, such as the removal of some side-effects of toxicity from existing drugs or, the modification of an injectable drug to permit oral self-administration has an important role to play in economic as well as medical advancement. This gives some justification for the existence at least, of the much disparaged technique of molecular manipulation. Historical advancement of biological and technical research and development in the 1940s and early 1950s has meant that most diseases and illnesses can now be treated effectively in some way. Thus, current technology may have reached a point where only marginal improvements will be made in areas such as delivery systems and formulations. Parallels exist in the automotive industry where marginal changes are being made constantly although major innovations, such as the Wankel engine and fuel injection, come at infrequent intervals.

Research and development may be viewed as the cornerstone of the pharmaceutical industry since the extent and success of a company's research and development activities largely determine the future pattern of corporate earnings and growth. For this reason pharmaceutical companies often have large research and development efforts enabling them to produce streams of new products and engage in innovatory competition. But this form of competition exposes the company to the perils of constant innovative rivalry which

ensures that large market shares do not necessarily give rise to market dominance. Successful competition is not just about cheaper prices or newer and better products but is also about influencing the consumer. Therefore, we need to address the issue of how companies influence consumer demander choice.

#### **The interaction of supply and demand :**

##### **Sales promotion and the demander**

The normal model of a consumer market assumes the consumer is sovereign. He/she uses product information and personal preferences to make a choice about which product to buy. Information failure (Barr 1992) is a major drawback in many markets, health being an example. Suppliers in such a market therefore have considerable power. Drugs are namely a special case. The sale of OTC drugs is straightforward. They are freely available and can subsequently be advertised in the usual media and sold like other consumer products. In the case of prescription drugs however, the situation is very different. The doctor rather than the patient is the consumer thus, the objective of marketing becomes to influence the doctor.

In a market where there is a multiplicity of choice and where new drugs, modifications, and changes in dosage are constantly entering the market doctors are faced with a formidable task of familiarizing themselves with an appropriate and reliable pharmaceutical armamentarium. Therefore, they require a great deal of specific information.

There are a number of ways in which this can be done. Advertising for example, has a vital role to play in informing physicians about the properties and uses of the different therapies, especially since little can be learnt about the quality of a tablet simply from its appearance. Peltzman for example, illustrated this point using his

examination of the consequences of delayed use of the drugs used to counteract the effects of Tuberculosis (<sup>7</sup>).

A doctor's prescription for a drug may increase with the quantity of information he receives about a drug and, its range of alternatives for any given level of quality and price. Thereby manufacturers are provided with an incentive to supply information. With a good outcome and the favourable opinions of colleagues and other sources, a doctor will be more likely to respond to an advertisement by prescribing the advertised drug than if his observations have been unfavourable. Although physicians differ in what sources of information they rely upon they are able to distinguish between claims for the various drugs (Sainsbury 1976). The demand for information concerning the quality of drugs is much greater than the demand for information from consumers concerning the quality of other products (Schwartzman 1976). Consequently, drug companies have to provide a good deal of quality information.

Another method of marketing prescription drugs is via company representatives (ie. drug reps). They will visit a doctor regularly to up-date him/her on the latest current trends in therapy. Drug reps must be well educated, well informed and able to interact with doctors on more or less equal terms. Consequently, they require extensive training and can command good salaries. Doctors come to rely heavily on them and, a skilled one is able to influence a doctor's preference of possible alternatives. It is therefore not surprising drug reps account for one-half or more of the marketing budget (Burstall 1990b). In essence, the promotion of prescription drugs costs money.

Critics of the industry's advertising campaigns argue that like patents advertising is a 'natural' barrier to

---

<sup>7</sup> Peltzman in Feldstein (1988) - Failure by physicians to adopt drugs due to a lack of information estimated that, in the case of Tuberculosis (TB), 80,600 lives would have been saved if the use of TB drugs had spread as rapidly as the Salk vaccine.

competition. Those firms with larger promotional budgets are more able to create product differentiation and brand loyalties in the minds of physicians. The effect is to limit the field of competition and subsequently affect the potential 'best' treatment for patients. They argue that as a result, this type of promotion is unethical and unequitable. Schwartzman (1976) however argued the need for such campaigns declaring that, if all promotional expenditures were eliminated the amount of the savings eventually passed onto consumers would represent approximately 5% of their drugs bill. However, this potential saving must be offset by a cost to physicians and ultimately, the cost to patients of replacing the information previously provided by the drug companies. Further costs would be incurred by delays in introducing new products as new product marketing declined without promotional expenditure and finally, both nominal and quality-adjusted prices would remain high with less product competition.

### Summary

This chapter examined the question of why there is a need to address the issue of the cost to governments and insurance companies of prescription drugs. In addition, it looked at the characteristics of the prescription drug market to determine what distinguishes it from other markets and, why this might bring about a need for some form of government regulation. This investigation noted that primary health care is one of the fastest growing elements of NHS spending and within primary health care, pharmaceutical costs were rising the fastest. The rapid economic growth of the 1950s/60s made it possible to support such spending. However, the ensuing change in the economic climate led the government to seek ways to cutback spending and contain expenditure growth on public and social programmes, including health care.

This rapid increase in drug expenditure resulted in part from the 'explosion' of the pharmaceutical industry brought about by the apparent scientific revolution. This occurred at about the time of the introduction of the NHS in the UK which in itself, brought about an increasing awareness and demand for the benefits of good health. Patterns of illness, changing social and demographic trends and, attitudes towards therapeutic delivery are also considered as equally important in influencing spending on pharmaceuticals. Consequently, all these factors have given rise to a tremendous expansion in the output of the industry.

The problem is complicated by the unique structure of the pharmaceutical and prescription drug market. Demand for prescription drugs is very specific and, because of information failure the industry's products are only available on a doctor's prescription. Thus, the primary consumer forfeits his sovereignty to an agent who demands on his/her behalf. As a consequence, this secondary consumer's beliefs become paramount. The inclusion of a third party payer further complicates the demand model because it removes the responsibility of the cost of their actions from the primary and secondary consumers. The purchaser is left to pay for other people's choices and has little or no input/influence over the type of purchase and the cost. Subsequently, the market becomes relatively insensitive to price.

The relationship between the industry and the purchaser in the UK has led to further complications. On the one hand, as a monopsonist purchaser of a privately produced product the government wants to keep prices down. In conflict with this need is the need to maintain a lucrative UK export industry which requires prices to be kept at a profitable level. As a result of this dual role and of other market imperfections, the government is challenged with changing consumer attitudes towards prescribing and somehow regulating the industry. This dilemma is a warning to anyone who thinks that the

regulation of a private market in the welfare field is an easy one. The following discussion will therefore focus on what measures the government has undertaken to achieve these goals.

## Chapter 2

**How has the government sought to contain the drugs bill ?**

## **Introduction**

The structure of the prescription drug market, its insensitivity to price and the government's dual role in the pharmaceutical industry makes regulation difficult. It is not simply enough to target one level of the market and attempt to control either industry prices or change consumer attitudes. To successfully reduce expenditure growth and contain spending the government must target for control each stratum of the market. In doing so, it must try to find the most effective way to regulate industry prices, change prescribers' attitudes and influence patient demand.

This chapter looks at government attempts, from the early 20th Century to the NHS Reforms of 1991, to achieve these aims and why they proved unsuccessful in terms of influencing prescribers' preferences. The chapter begins by looking at government regulation of the industry and moves onto discuss its attempts to influence patient demand via a patient cost-sharing scheme. The chapter ends by examining government attempts to change prescribers' attitudes and why a new approach was required.

## **Regulating the industry through price controls**

Chapter 1 mentioned how the government's dual role in the pharmaceutical industry created a conflict of interests. Price controls are particularly tempting. In a market which is sensitive to price, to cut prices is to cut expenditure. However, because of market imperfections prescription drugs are fairly insensitive to price changes. Moreover, to cut prices also means to reduce profits, this is contrary to the government's role of maintaining and promoting a lucrative national export industry. So what is the solution ?



Most members of the European and Economic Community (EEC) regulate the prices of individual products by one of three methods : cost-plus, internal comparison and external comparison. The cost-plus system bases the price on the costs of production with an allowance made for expenditure on marketing and research and development. The internal comparison system sets prices by reference of comparable drugs already on the national market. Under this scheme, concessions are made for innovative products which have therapeutic advantages. The third scheme, external comparison, sets product prices by comparing the price of that particular medicine in other countries.

Not all countries in the EEC however fix the price of individual drugs. The Netherlands and Denmark for example, operate a free market and rely on other means to control total pharmaceutical spending. Germany, which previously operated a system of free pricing, now restricts reimbursement under the national health insurance system to a fixed sum for multi-source products with identical active ingredients. From January 1989 restrictions were extended to products which are therapeutically equivalent and to those with comparable pharmacological profiles. The reimbursement levels chosen are related to those of the generic equivalent. Reference prices for products with identical substances were set in July 1989. However, in order to protect research based companies these prices could not be fixed until three years after the expiry of the relevant patents.

The regulation of the industry in the UK is uniquely British. It seeks to control profits rather than product prices. Each year the industry negotiates with the Department of Health (DoH) the permitted rate of return of capital based on the previous year's sales to the NHS. This rate of return is fixed on a company by company basis according to the individuals company's relevant investments and associated long term risks. Provided the company does not systematically exceed its permitted rate of return it has the

freedom to set prices of new products on entry to the market. It does however, require official approval for any subsequent price increases.

This system of price regulation was first introduced in 1957 and was known as the Voluntary Price Regulation Scheme (VPRS), although it was neither 'voluntary' nor a price regulation scheme but a profit regulation scheme. Throughout the life of the VPRS, later changed to the Pharmaceutical Price Regulation Scheme (PPRS), certain features have remained broadly constant. These features have included the Ministry of Health (MoH) and Department of Health & Social Security (DHSS) being responsible for price regulation through negotiation with the industry's representatives ie. Association of British Pharmaceutical Industry (APBI). In addition, successive governments have retained statutory powers, under NHS legislation, to determine the maximum prices of pharmaceutical and medicinal products supplied to the NHS. Under more general legislation the government has the power to refer any suspected abuses of market monopoly for scrutiny by the Monopolies Commission. To date however, this has not yet happened.

Negotiation for the first VPRS got underway in 1954. These resulted from the Cohen Committee's (see regulation of the profession) recommendations that 'existing drugs not therapeutically superior to standard preparations should be prescribable in the NHS subject to satisfactory price arrangements with the manufacturers'. However, the discussions between the MoH and the APBI were long and protracted as the government sought to accommodate acceptable prices whilst, maintaining a highly valuable export trade which in turn, helped to keep home based pharmaceutical prices comparatively lower and pay for essential research and development.

Finally, an agreement was reached which gave manufacturers the power to set prices for the first three years of life of

a new product after which, the following three specific and alternative pricing routes were to be available, the export criterion, the standard equivalent criterion and the trade price formula <sup>(1)</sup> (Luce 1987). The scheme included a provision which gave any manufacturer the option to negotiate the price(s) of all or any of his products directly with the MoH without reference or with only partial reference to these pricing formulae. For manufacturers not exercising this option, products meeting the 20% export quota had to be negotiated under the export criterion. Products with less than 20% exports had to be dealt with under the 'standard equivalent criterion' if generic equivalents existed or, under the trade price formula if they did not.

Estimated savings of the first VPRS were up to £750,000 a year achieved through the reduction of product prices although, the primary aim was 'not to reduce prices generally but to curb excesses where they existed' (Luce 1987). These estimates proved somewhat optimistic as the Hinchcliffe Committee (see regulation of the profession) reported in 1959. The Committee's Report noted that by early 1959 three hundred preparations had been reduced in price at an estimated saving to the Exchequer of just over £400,000 per annum. However, shortly after the publication of the Committee's Report two main events ensured the industry's pricing levels and practices remained in the forefront of British political debate. The first event, which was

---

<sup>1</sup> **Export criterion**, applicable to proprietary products where not less than 20% of the manufacturers's output was exported. In these cases, the NHS price should not exceed the weighted average FOB or net wholesale price in the company's six most important overseas market.

**Standard equivalent criterion**, for use where there were generic equivalents of proprietary products and requiring the proprietary price to be no greater than that of the generic.

**Trade price formula criterion**, a form of 'cost-plus' calculation in which a final price was built up from ingredient costs, a fixed 12.5% 'on-cost' allowance and allowances for processing, packaging and wholesale discounts.

extensive publicized in the UK press, was the Kefauver Committee's investigation in the United States which examined individual products and more specifically, several which were showing profit margins at a selling price of more than 90% over factory costs. This was followed by the widely reported disagreement and ultimate legal battle between the American firm Pfizer and the NHS over the price charged for the antibiotic tetracycline.

The publicity surrounding the Kefauver Committee findings served to prompt more examination of what was happening in the UK. In 1961 a situation arose which highlighted the general unease about the industry's profits and prices. DDSA Pharmaceuticals Limited offered to supply tetracycline to the NHS for 6-10 shillings per 1000 tablets. Pfizer who, at that time, held the patent on the product had a selling price for the same volume of tablet of 60. In an attempt to force Pfizer to reduce its price, the then Minister of Health gave authorization for the drug to be imported for use in the hospital services of the NHS. He justified the legality of his action by claiming that hospital services were Crown users and as such he, as a Minister for the 'Crown' could invoke Section 46 of the 1949 Patents Act (<sup>2</sup>). This claim was upheld by the House of Lords despite fierce opposition by the firm.

The first VPRS was remarkably unrestrictive perhaps because it hoped to be able to exercise an acceptable degree of control over all the industry's activities under indirect rather than direct methods of control, (ie. believing that the MoH and the APBI would be successful in establishing a voluntary system of self pricing within the British based pharmaceutical sector). In 1961 and 1964 the VPRS was renegotiated but retained the basic framework and most of the provisions of the 1957 version. Most of the changes of

---

<sup>2</sup> This section permitted any government department or person authorised by the same, to work any patent 'for the services of the Crown'.

detail focused on the circumstances in which the 'freedom period' for new product pricing could be enjoyed or, the export pricing criterion applied and resulted in tighter and fuller definitions being brought into force. Two new concepts were introduced in the 1961 version.

The first was the option, applicable to the MoH and available under the original scheme only to companies, of insisting on direct price negotiation instead of pricing by the export formulae. The MoH's freedom to use that option was however limited to products with annual NHS sales of £500,000 or more. Even in such cases it was obliged to take account of any evidence of effective price competition in external markets for the product concerned and, take into account, on request, a manufacturer's **overall profitability on medical specialty products or on the whole range of drugs he supplied to the National Health Service**'. This concept is the first reference in the scheme's documentation to an aggregated approach to pharmaceutical price regulation.

The second feature which related to aggregates rather than individual product costs was added to the 1964 version. This imposed the inclusion in the 'Basic Pricing Formula', itself a combination of the original 'trade price formula' and 'standard equivalent criteria, of a **research and development allowance** to be added to the various cost allowances (for net ingredients, processing, packaging and wholesale discounts) from which final product prices were built up. Despite the aims of the VPRS the first decade of its life saw little change and in essence, NHS expenditure on medicines continued to grow at a slightly inflated rate of NHS spending in general, while exports increased rapidly.

In 1967 the Sainsbury Report recommended a further revision of the VPRS was necessary and argued that company costs, profits and prices should undergo much more rigorous scrutiny than had been customary. It further argued that because

negotiation of prices sometimes failed to result in agreement 'a procedure must be available to which Ministers may have recourse'. The VPRS was subsequently amended and the specific Sainsbury recommendation that Section 46 of the 1949 Patents Act be widened to embrace not only hospital services but also the much larger drug market of General Medical and the Pharmaceutical Services was adopted. In 1968, the Health Services and Public Health Act extended the 'Services of the Crown' provision to include explicitly the prescription of drugs by GPs and the Banks Committee which reported in 1969 proposed reforms of the earlier patent system and recommended that Section 46 should be retained as a 'sanction' if the DoH was of the opinion that a patentee's prices were too high.

In 1969 the fourth, and what some consider to be the most far reaching revision of the VPRS was published. Although sharing the same goals as past VPRSs, this version differed significantly in that for the first time, it put the concept of an aggregated approach to individual companies' profits and costs at the centre of the price-regulatory arrangements. It required each company involved to submit detailed Annual Financial Returns (AFR) to the DHSS. These were to include breakdowns of sales, costs and capital employed. This would allow the government to make a rational assessment of the 'reasonableness' of pharmaceutical prices and profits by taking into account items such as promotional outlays and transfer costs between affiliated concerns. If, after reviewing the prices charged, the DHSS was still unsure about their acceptability it could apply one of two further supplementary tests.

Consequently, this revised VPRS gave the government greater powers to influence both product prices and aggregated company profits from sales to the NHS. Moreover, it meant they were no longer heavily reliant upon the ABPI using its influence to encourage companies to co-operate and supply information to the DHSS in a voluntary manner as previously undertaken. Subsequently, the rate of growth of NHS

pharmaceutical spending and the proportion of health service money being spent on pharmaceuticals declined. Not surprisingly, many companies soon expressed their concerns about the new scheme's regulations. Many felt that by agreeing to supply AFRs its decreased rate of earnings increase during the early 1970s, when the rate of increase in health service spending and inflation generally was rising rapidly, was an excessive price to pay.

The 1972 revision added little to the existing VPRS but, the 1977 revision had a direct effect on the relationship between the UK pharmaceutical sector and the NHS. Firstly, the government re-established its statutory powers to fix the price of products, including medicines supplied to the NHS if this were proved necessary. It required companies to provide forecasts of sales for a year ahead as well as returns for the last accounting period. In addition, the renegotiation of the VPRS resulted in a title change to the Pharmaceutical Price Regulation System (PPRS) 1978)). Like the VPRS it reflected the lack of 'voluntarianism' which existed given the 'sanctions' and procedures of the last recourse and aimed to control profits rather than prices. Thus, if historic profitability was regarded as too low (or too high) by one of the parties involved in the negotiation, then efforts would be made to try and raise (or lower) prices.

During the 1980s the government's dual interests in the pharmaceutical industry led to a straining of the relationship between the two. More specifically this was brought about by the government's reactions to the diminishing domestic incomes of the UK based industry. This occurred at a time when there was an increase in the national drugs bill promoted by increasing imports encouraged by the strength of sterling. In response to this situation the government invoked a freeze on medicine prices and introduced selected price cuts in 1983. This strategy, together with the introduction of a limited list in 1985, was seen to directly interfere with the normal activities of the running

of the PPRS. By not consulting ABPI before acting publicly the government was in effect implying that it would in the future act unilaterally to set national pharmaceutical prices. The industry registered its objections to this arbitrary government intervention and in 1986 renegotiation of the PPRS was undertaken.

Essentially the 1986 scheme retained the basic principles and strategies of the earlier schemes giving greater precision and transparency to certain key features (<sup>3</sup>). Nonetheless, a more concrete emphasis on the need to restrain the growth in NHS pharmaceutical supply costs by introducing specific procedures for financial analyses of costs relating to individual companies' administration, manufacture and sales promotion expenditure was applied. In addition, a new and explicit framework for the negotiation of research and development allowances was also introduced. New provisions were added for mutual consultation in the event of the aggregate costs of NHS medicines rising significantly faster than general inflation with limits implied to the DHSS's obligations in respect of cost rises in the industry. Finally, the formula pricing procedures for individuals products which were originally introduced in 1957 were finally dropped.

---

<sup>3</sup> Arrangements for determining average range and target profitability of participating companies was made more explicit. As was the concept of the 'grey area' whereby companies may, in some circumstances, retain profits above target (normally 50% of the target profit where this profit is achieved by the company's own efforts) and the use of a 'return on sales' arrangement in suitable cases.

An external yardstick for determining changes in average pharmaceutical industry profitability is made via reference to changes in the average profitability of British industry generally is introduced.

The position on pricing of new products and of line extensions of existing products are made more explicit. Generic preparations are excluded from the scope of the scheme.



The latest revision of the PPRS was renegotiated at the end of 1992. An agreement was reached in the late summer of 1993 and the revised scheme will operate for the next five years. The new scheme proposes to reduce the maximum profit any company may earn. In addition, the government has introduced an across the board price decrease of 2.5% effective from the beginning of October, 1993 to last for a period of three years (Watts 1993). The industry reluctantly agreed these terms arguing, the imposition of the 2.5% price reduction for three years of the scheme will only act as a further disincentive to future capital and research investment in the UK. Only time will tell how realistic these concerns are.

In addition to government regulation of the industry every health care system incorporates an element of patient copayment. This usually takes the form of either a flat-rate contribution to the cost of the prescription or, requires the patient to meet a proportion of the cost. Most EEC countries favour one or the other of these methods although, Italy uses both. All countries operate a system of exemption from charges for particular groups. These are typically those in hospitals, the chronically sick, sometimes the young, old and the poor. The UK is especially generous in this respect. The discussion will now focus on the different types of copayment/cost-sharing systems and their impact on patient demand. Particular reference is made to patient cost-sharing in the UK.

#### **Influencing patient demand via patient cost-sharing**

The introduction of the NHS in 1948 brought about new methods of funding the drugs bill. Rather than relying on pre-ordained limits as the 'old' National Health Insurance (NHI) Fund did, this system estimated drug spend. Nevertheless, despite these changes there was no real difference in the principles of control mechanisms for prescribing behaviour. Increases in demand for health care resulting from the NHS's

total coverage of the population combined with, doctors' greater clinical freedom to prescribe translated into soaring drug expenditure. Not surprisingly, the government soon realised the need for some form of parallel strategy aimed at curbing prescriber and consumer demand.

Thus, in the early years of the NHS the government set up a number of working committees (see regulation of the profession) to determine the necessity of discouraging what it defined as 'undesirable prescribing by GPs' and, define what measures could be taken to restrict this. At the same time, it tackled the problem of patient demand by introducing (1952) a flat rate nominal charge of 5 pence per prescription form for encashment. This aimed not only to reduce patient demand but also generate additional revenue. However, this method of control failed on both counts. It was subject to gross exploitation by both patient and GPs alike and was wholly inadequate. Thus, in December 1956 the government changed the charge to patients for prescriptions to 5 pence per item. This had the initial effect of reducing demand but by 1958 it had once again begun to increase. The 1960s witnessed some of the most dramatic changes in patient demand and prescription charges.

Patient demand at the beginning of the decade was lower than it had been since the introduction of the NHS and even post the introduction of charges per item (Figure 2.1). After the increase in prescription charges in 1961 to 10 pence per item, demand steadily dropped to its lowest point since 1948. Demand began to rise again between 1962 and 1964 with a sharp rise during 1964/65 and a peak in demand in 1967. This somewhat meteoric rise during this five year period was partly due to the abolition of prescription charges in 1965. However, when prescription charges were re-introduced in 1968 at a charge of 13 pence per item demand fell slightly. Certain groups however were declared exempt from these charges (Figures 2.1 & 2.2).

# NHS prescription charges and items dispensed by chemists in the UK

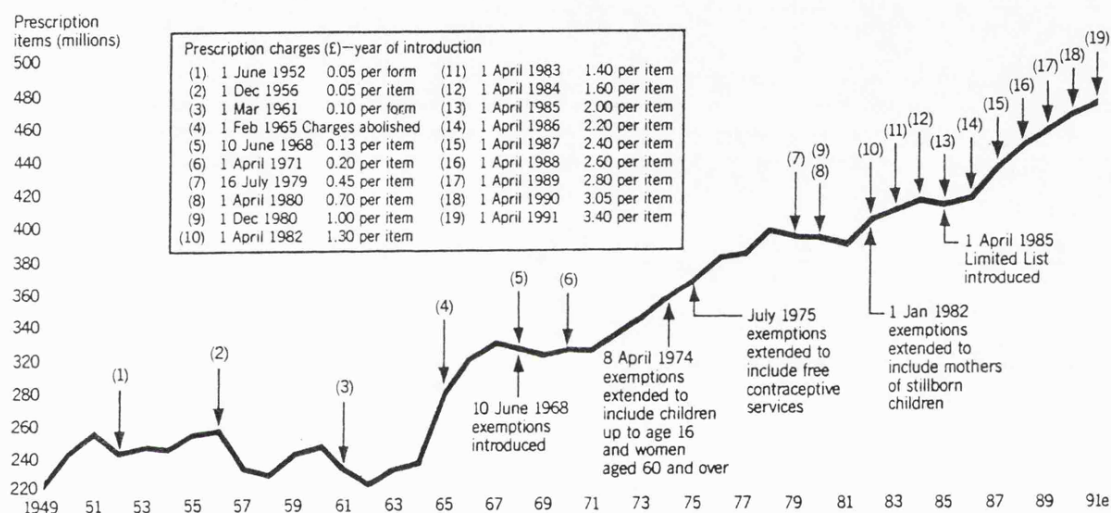


Figure 2.1

Source : DoH

Reference : Pharma Facts & Figures, ABPI 1992

In 1971 prescription charges were increased to 20 pence per item and remained at this level until 1978 at which time extensions to the exemption categories were also made. Examination of prescription charges shows that the nominal rate of increase over this period (ie. 1952-79) was in excess of 300%, real term growth however fell. In support of these

findings, Ryan (1989) found that if charges had increased in line with inflation the actual charge per prescription in 1979 should have been 24 pence rather than the 20 pence charge.

During the 1980s and in conjunction with stricter measures to control prescribers' behaviour (see regulating the profession), the government embarked on a policy of regular increases in prescription charges over and above the rate of inflation. By 1990 with a rise of only 19% in the number of prescriptions issued to patients in 'real' terms this amounted to a staggering 236% rise in prescription charges (since 1980). Thus it appeared neither method of control (ie. of the profession or the patient) had managed to stop the rise in the number of prescriptions dispensed or, growth in drug spend. This is not surprising given the increases in the number of prescriptions exempt from a charge and hence, the subsequent decrease in chargeable prescription items (Figure 2.2).

Between 1982 to 1992 for example, the number of chargeable prescriptions in England fell from 31% to 19% (Statistical Bulletin 1992). Hence, by 1992 over three-quarters of all prescriptions (ie. 81% or 168 million items) were exempt from a patient charge. For a patient to qualify for 'free' prescriptions he/she must be recognised as belonging to one of the following groups :

- 1 the elderly
- 2 the young
- 3 Low Income Support Scheme (formerly DSS exempt)
- 4 'other' category patients ie :
  - (a) war or service pension
  - (b) Family Health Service Authority (FHSA) exempt
  - (c) no declaration and declaration not specific.

# NHS exempt prescription items dispensed by chemists and appliance contractors, UK

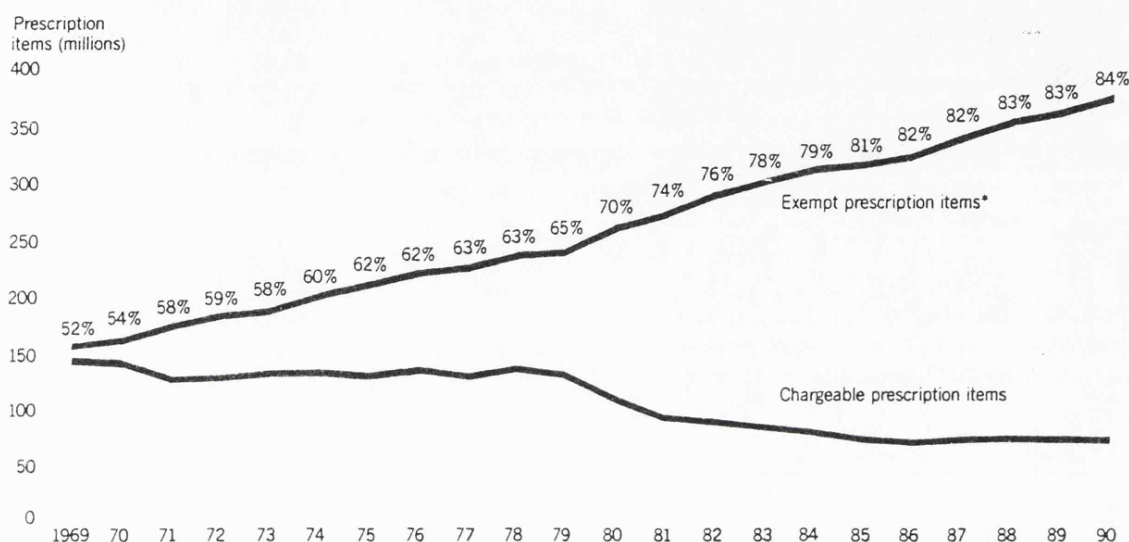


Figure 2.2 (<sup>4</sup>)

Source : DoH

Reference : Pharma Facts & Figures, APBI 1992

- Notes:\*
- 1 10 June 1968 exemptions introduced
  - 2 9 April 1974 exemptions extended to include children up to age 16 and women aged 60 and over
  - 3 July 1975 exemptions extended to include free contraceptive services
  - 4 1 January 1982 exemptions extended to include mothers of still born children
  - 5 April 1988 exemptions extended to include persons under age 19 in full time education

Prescriptions for the elderly account for the largest share of all exempt prescriptions and between 1982 and 1992 increased its share from 33% to 43% (Statistical Bulletin

<sup>4</sup> All figures are based on a sample of 1 in 200 prescriptions in England and Wales, and 1 in 100 prescriptions in Scotland.

\*Figures include prescriptions dispensed via pre-payment certificates.

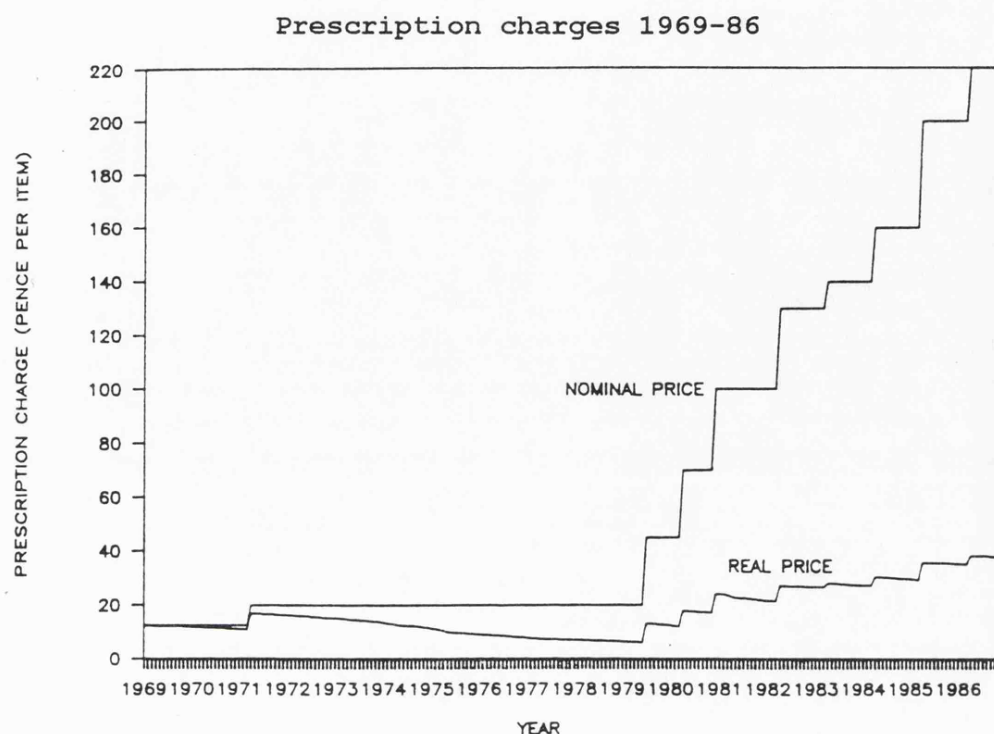
1992). The 'others' exempt category represented the second largest share with 13%. The Low Income Support (LIS) Category and the Young People Exempt Category displayed similar share sizes (Statistical Bulletin 1992). The LIS category demonstrated a reduction in the number of prescriptions exempt from a charge between 1988 and 1989. This was the first recorded reduction in the number of exempt prescriptions in any category since analysis began in 1977. Nevertheless, these increases in the number of prescription exempt from a charge further adds to the market's insensitivity to price. A patient's exemption from cost-sharing only leads to demand being difficult to regulate and, prescription charges' ability to restrain volume demand for medicines is severely limited.

Despite prescription charges' apparent inability to restrain patient demand there is evidence to suggest the contrary. Supporters of the policy argue patient cost-sharing policies effectively reduce patient demand by reducing what the government considers 'frivolous' demand. Others argue however, this policy only acts to deter patients from obtaining the necessary medical treatment. Begg (1984) for example, found that the proportion of prescriptions not cashed was significantly greater for non-exempt groups than for exempt. This suggests the existence of a direct relationship between prescription charges and prescription consumption.

O'Brien (1989) noted a consistent negative relationship between prescription charge and utilization as measured by the volume of non-exempt items dispensed. Moreover, he found gradual changes in elasticities which suggested greater elasticity in charge-utilization. However, his study was later subjected to criticism by Ryan and Birch (1989) because of his failure to distinguish between demand and utilization. They went on to state that the real value of the prescription charge is associated with a reduction in the relative rate of utilization of prescribed drugs carrying a charge (Ryan &

Birch 1989). However, it is difficult to gauge absolutely the effects of such charges in the UK because few studies have sought specifically to explore the impact of prescription charges as a reason for non-compliance.

In the UK there are no official policy guidelines regarding the target relationship between charges and costs. Prescription charges are based on a fixed rate and do not vary by type of pharmaceutical preparation. Thus, items which have a relatively small net ingredient cost (eg. minor analgesics - £1.64 : Office of Health Economics (1987)) are subject to higher percentage cost-sharing than higher cost drugs (e.g anti-inflammatory rheumatic preparations £8.05). Changes in average total cost per prescription relative to the charge in the period 1969-1986 show that the average rate of cost-sharing has varied over time, falling from 21% (1969) to 10% (1978) and then rising sharply to 43% (1986). This suggests that 'pegging' the charge to costs has only been adhered to post 1979 and during the 'charge-freeze' period of 1971-1979 as well as the real value of charges falling, so did the ratio to average cost.



**Figure 2.3**

Source : DoH and author's calculations

Reference : O'Brien B. (1989)

There are few countries in the world which operate a cost-sharing scheme based on a fixed rate. In 1983 for example, the national health insurance scheme operating in the Netherlands introduced a charge for prescriptions of 2.50 guilders per item and in Belgium and Germany prescription charging schemes are based on a fixed charge per prescription. However, many countries have sought to reduce costs to the purchaser by relating cost as a proportion of the total cost of the product. In France from 1982 the share of cost falling on patients for 1258 products was increased from 30% to 60% and in Luxembourg cost-sharing was raised from 15% to 20% (1983). Other schemes have opted however to combine these two strategies, charging a fixed rate plus a proportion of the cost of the drug (Italy and Portugal) (Abel-Smith 1984).



Evidence showing the effects of product proportional cost-sharing (ie. co-insurance, copayment and deductibles) is given from studies in the United States where families were shown to have paid for nearly 75% of the expenses for drugs for people under 65 years of age. Private health insurance paid one-eight and Medicaid and other public and private programmes paid the remaining one-eight. This data indicates that expenditure per person on a free plan is about 60% higher than in a plan with a 95% coinsurance. This represented about the same relative increase for total per capita outpatient and inpatient expenditures as reported by Leibowitz (1985).

Cost-sharing and reimbursement schemes in many countries work in conjunction with limited drug list systems. In the Netherlands for example, prior to the introduction of a 2.50 guilders per item prescription charge, a negative list of drugs was introduced (1982) under national health insurance. A doctor could prescribe a product on this list, but in doing so made the patient liable to pay the full cost of the drug as the health insurance funds were forbidden to do so. Other schemes relate more to a proportional cost-sharing in conjunction with a limited list of one sort or another.

In Denmark patient drug reimbursement is based on a selective system ie. oriented towards selected drugs where selection is product-determined. Drugs eligible for reimbursement are published by the national health authority in a special list. Group I drugs for example, receive a 75% reimbursement and Group II drugs 50%. Fully reimburseable drugs do not form part of the Danish system although they are available under Finnish, Swedish and Norwegian systems of reimbursement. Since the national health insurance programme covers the whole population virtually every member is entitled to the price reduction scheme for listed drugs. The Finnish drug reimbursement on the other hand, is determined by a disease selective scheme which subsidizes in full listed drugs for specific chronic diseases. An unselective scheme also

operates which requires those not covered under the restricted selective scheme to share a certain percentage of the costs of all prescribed medicaments above an amount initially covered by the insurance (Leibowitz 1985).

The various schemes which have been undertaken to curb patient demand for prescription drugs will surely have little effect if the results of such actions are not passed onto those who have a strong influence on that demand ie. GPs. Under the UK system of health care a number of strategies have been initiated aimed at monitoring general practice prescribing costs and patterns and penalising those who vary from the desired norm. The next part of the chapter will therefore look at government's attempts to, influence GPs' attitudes towards prescribing and, increase their awareness of the costs of their actions.

#### **Regulation of the profession 1912-1947**

Regulation of medicines dates back to the early herbal remedies with the establishment of the pharmacopoeias of London and Edinburgh, the subsequent publication of the first British Pharmacopoeia (1864) and eventually the establishment of the International Pharmacopoeia (Dunlop 1971). With the introduction of the NHI Act (1912 (<sup>5</sup>)) came the first real attempts to control drug spend. A new administrative mechanism was established which aimed to increase efficiency of care by identifying and where necessary, penalising cases of 'excessive' and/or expensive prescribing. A Drug Fund with monies arithmetically determined (see also patient cost-sharing) was set up specifically to pay for drugs.

---

<sup>5</sup> 1912 National Health Insurance Act (NHI) was a form of nationalization of club and contract practice and an attempt to eliminate the local influence of employers and trade unions. It extended contract practice to all employed working men up to the lower white-collar level, but excluded their dependents and hospital care

To ensure doctors' expenditure stayed within the boundaries of the Fund panel doctors were issued with a National Formulary and Drug Tariff. In effect, this limited doctors to what they could prescribe and attempted to make them aware of the costs of drugs they prescribed. The Formulary was limited to drugs, items such as toiletries and foodstuffs as defined by the MoH's special 'advisory committee', were no longer prescribable. Disputes regarding classification were solved by classifying the substance according to one of three categories: never a drug, always a drug and sometimes a drug; the latter depending on the purpose for which the item was to be used.

As a matter of routine, each doctor's costs were calculated for one quarter in every three by the Pricing Bureau (<sup>6</sup>). Any unusually expensive prescriptions or any cases of excessive prescribing were reported to the Ministry. The Ministry had to decide whether or not to initiate an investigation. An analysis of the doctor's prescriptions together with any explanations for apparent causes of the high costs was prepared by the Bureau. A statement was then sent via the Ministry's Region Medical Officer to the practitioner who was given the opportunity to explain his case. After consideration of all the facts the Minister could, in a few of the worst cases, refer the matter to the Panel Committee.

This Committee was responsible for examining all the facts and making a decision on whether there was evidence of 'extravagance'. They would submit their findings and recommendations to the Minister who was ultimately responsible for determining the course of action. In extreme cases this could mean directing the Committee to withhold the

---

<sup>6</sup> Calculation was based on a fixed ratio of individual doctor's prescription costs in comparison with the appropriate average for the area in which he practised

GP's remuneration (<sup>7</sup>). Critics of this system argued it was however ineffective. Moreover, it caused constant anxiety to doctors who were fearful of overstepping the narrow limits of too much or too little (Levy in Martin 1957). On the other hand, others saw it as a gentle form of guidance. The Regional Medical Officer was there to offer support and guidance to the doctor, to advise him of the ways to economize on his prescribing. Nevertheless, the duality of his role was always a discrete but constant reminder that trouble lay ahead for those who might prescribe 'extravagantly' (Martin 1957).

### **Regulation of the profession 1948-1990**

Under the terms of the NHS (1948) the institution of total coverage of the population led to a sudden and rapid increase in the demand for health care and an increased output by prescribers. Ultimately, there was a rapid increase in drug spend which exceeded government expectations. As a result of this, in the early life of the NHS the government realised the need for stricter controls to curb consumer demand (see also patient cost-sharing) and subsequently set up a Joint Committee on Prescribing (<sup>8</sup>) to determine the necessity of discouraging undesirable prescribing by GPs.

By 1953 the Committee had classified all the available drugs and recommended that a small standing committee be set up who would be responsible for adding new products to the list as they became available. In 1954 the Standing Committee on the Classification of Proprietary Preparations (Cohen Committee)

---

<sup>7</sup> Figures to 1951 show the number of doctors referred to the Committee was 1 in 2,000. Data on later years found the number of doctors actually fined each year rarely achieved double figures (Reekie & Weber 1979). NB. The paucity of data may reflect the lack of interest in this type of data collection should it be available. Moreover, it is likely to be a reflection of the difficulty of proving unreasonable prescribing based on only one case (ie. prescription) of the doctor's prescribing.

<sup>8</sup> Joint Committee on Prescribing, 1949 set up by Central & Scottish Health Services Council

was set up. This Committee drew up a 'white list' of proprietary preparations which a doctor would be permitted to prescribe. The Committee however agreed that a doctor should retain his clinical freedom to prescribe a drug 'which in his opinion was necessary for the treatment of his patient'. In conjunction with these controls the government introduced the patient prescription charge (1952) aimed at curbing patient demand (see patient cost-sharing).

Although the Cohen Committee's recommendations were relatively successful they failed to reduce expenditure on general practice prescribing. Subsequently a new committee, the Guillebaud Committee, was convened in 1956 to investigate overall NHS spending and the economic consequences and, to identify areas requiring further investigation. The Committee concluded (1956) that about one-third of the increase in drug expenditure between 1949 and 1953/4 resulted from the introduction of new and expensive drugs which was reflected by the increase of branded products. In December of that year the system of prescription charges was changed to 5 pence per item (see patient cost-sharing).

In 1959 a new committee, the Hinchcliffe Committee, was set up to examine further the increases in drug costs resulting from prescriptions issued under the NHS. Moreover, it was to recommend strategies for cost containment. The Committee found that branded medicines were accounting for an ever-increasing share of the total pharmaceutical expenditure. This provided further evidence to support the Guillebaud Committee's findings and resulted in the Hinchcliffe Committee recommending the use of generic names on prescriptions in preference to brand names.

In 1964 the Cohen Committee, partly in response to the removal of some of its functions to the newly established Committee on the Safety of Drugs, was wound down and replaced by a committee chaired by Professor MacGregor (1965). This Committee published a revised system of classification of

drugs and recommendations on prescribing. The aim of which was to 'help doctors decide which preparation should be used in the treatment of their patients and, to identify those preparations the prescribing of which appears to call for special justification'. The Committee also established a central source of information incorporating the increasing number of advisory publications advising GPs on how to prescribe economically. The published periodical, the Proplis, detailed all the preparations classified and gave articles about new and existing medicines in clinical use. This was then circulated to each doctor.

However, the operations and principles of the Committee raised continuous doubts. Its attitudes were often referred to as 'Doctrinaire' and the inconsistencies in its Proplis and failures to agree with its counterpart (<sup>9</sup>) led to confusion and lessened the effect of its 'advisory' capacity to affect prescribing patterns. In response to these difficulties the Proplis and the Committee stood down in 1969 and, by 1972 the Committee on Safety of Medicines was contemplating assuming the 'educative' role.

Since the Hinchcliffe Report government policy was to encourage doctors, albeit on a modest scale, to prescribe generically. In 1982 the Greenfield Committee which was responsible for identifying ways of encouraging effective prescribing, was set up. The Committee reported that the balance of prescribing remained heavily weighted towards brand name products. In 1980 for example, 20% of prescriptions were written by approved name. Subsequently, the Greenfield Report recommended : pharmacists be able to substitute generic drugs for brand name products on prescriptions; GPs should become more involved in district drug and therapeutics committees and; local formularies

---

<sup>9</sup> Prescribers' Journal, was issued free of charge to all doctors by the Department of Health and offered other semi-official attempts at moulding prescribing patterns.

should be introduced along with the setting up of a national limited list for drugs.

The government however argued such measures would be restrictive towards clinical freedom. Moreover, they would directly affect pharmaceutical profits and subsequent investment in pharmaceutical research. The drugs bill however, reached around £1,400 million a year (1984 (Chapter 6)) compared with £250 million ten years previously, 100 million more prescriptions were written for 17,000 different products, double the range used 25 years previously. Not surprisingly the government recognized the need for action. Thus in 1985, side stepping the controversial issue of 'generic substitution' which was potentially applicable to every prescription, the government introduced a restricted NHS drugs list for eight categories of drugs, for which OTC alternatives were available (<sup>10</sup>) but which were costing the Health Service about £120 million a year (DoH estimation).

The policy was immediately met with vigorous opposition from the British Medical Association (BMA) and the ABPI. They accused it of being a direct challenge to medical authority within the NHS as well as, cutting right across the tradition of negotiation between the trade association and the DHSS established through the VPRS/PPRS (Voluntary Price Regulation Scheme/ Pharmaceutical Price Regulation Scheme). The resulting public dispute was injurious to all parties but eventually, following the move of the then Health Secretary to another post, 'normal relations' were resumed with both sides able to point out some positive outcomes. Indeed, data post limited lists indicates growth in drug spend did not reach the 1975-82 trends and real savings on a recurrent basis were achieved (Taylor & Maynard 1990).

Government regulation of the profession so far, and not just in the UK, has been based on the theory that pharmaceutical

---

<sup>10</sup> The major exception was benzodiazepine sedatives

cost containment may ultimately be solved using indirect controls namely, persuasion or coercion. For political reasons persuasion is often used in the first instance and examples include :

- 1     Circulating periodicals containing information and advice about effective, rational prescribing and information on cheaper preparations.
- 2     The circulation of lists of standard equivalents of proprietary preparations (UK).
- 3     Encouraging limited lists of drugs (UK).
- 4     Financing the continuing education of doctors in therapeutics and so on.
- 5     The use of formularies for specific (Belgium, Denmark, Italy) or recommended drugs to be paid for under social security systems (France, Germany, Netherlands).
- 6     Examination and audit of prescriptions.
- 7     Questioning doctors and arranging visits to discuss clinical judgement on specific items prescribed (Ireland, UK).

Coercion on the other hand appears the more complex of the two and involves more than one method of control although basically it pinches the wallet. Under a coercive system attempts to limit the variety of items prescribed follow one of two paths. Doctors can be penalised for prescribing 'black-listed' preparations perhaps by surcharging the doctor the total cost of supplying the item by withholding that amount from the doctor's remuneration. However, this is unsatisfactory because it requires the lists of prohibited items to be extensive and compilation is never easy. Alternatively, patients may incur some sort of charge for



cashing a prescription or, a purchaser may examine the manufacturers' profits and try to regulate the fees etc. paid for pharmaceutical work whether by professional pharmacists or doctors who do their own dispensing (Martin 1957; Abel-Smith 1984; see regulation of the profession and, patient cost-sharing).

The discussion has so far concentrated on government's attempts to influence GPs' attitudes by providing them with information about drugs in the market. It has not yet discussed the role of feedback as a mechanism for influencing choices and behaviour. Several studies have for example, demonstrated that the feedback doctors receive about their actions can result in changes in prescribing, though this change is liable to disappear should feedback cease (Spencer & van Zwanenberg 1989; Wyatt, Reilly et al 1992). However, it is noted feedback should be combined with other educational measures in order for it to achieve some success in changing practices. It is not sufficient to simply feedback information on performance, as this approach has almost no impact on changing clinical behaviour (Mitchell & Fowkes 1985). This may at least explain in part why, prior to 1988 only a small minority of GPs had requested this information.

Prescriptions which have been cashed by the patient are sent to the Prescription Pricing Authority (PPA). This is the special health authority responsible for authorising payment to contractors for dispensing NHS prescriptions and for providing prescribing and drug information for England. The PPA is able to collect and collate all data with regard to prescribing costs and trends and are in an ideal position to provide GPs with information and feedback about their activities in this field. In the mid 1970s, the PPA undertook a seven year computerisation programme (from 1976) which they believed would result in a more informative and selective information system on prescribing costs available

to GPs. In October of 1988 GPs received their first Prescribing, Analysis and Cost (PACT) data.

PACT aims to provide GPs with reliable, regular information on their prescribing habits and costs and increase awareness of weaknesses and strengths. As such, PACT provides a useful tool for FHSAs and GPs alike in assessing prescribing costs as well as making the use of a formulary and working from a selected list of familiar products attractive. PACT allows the government to identify more specifically where the money is going and permits analyses illustrating the value (versus cost) of prescribing. However, although it provides information on cost and number of items, in various permutations, prescribed by each prescription pad it is at best a proxy outcome measure of the complex act of prescribing and has limitations.

It is unlikely for example, to discriminate between good prescribing and bad prescribing. It is not related to clinical care or consultation rates. Moreover, it provides no clue to the proportion of consultations that end without a prescription being issued. Repeat prescriptions cannot be identified though they may comprise 66% of the total items and make a major contribution to the overall cost (Spencer & van Zwanenberg 1989) and, it also fails to provide any information about patient details. Nonetheless, PACT has already started to influence GPs' choice of drug by putting price firmly on the agenda as an item to consider when choosing between drugs. The industry has responded by marketing several products principally on the basis of their cheapness in comparison to similar products and pricing them to be comparable to generic alternatives or overall low costs (eg. less than 5 pence per day) (Head 1990).

## Summary

The structure of the pharmaceutical market, the market's insensitivity to price and the government's dual role in the industry makes regulation difficult. Nonetheless, the government has attempted to contain expenditure growth by adopting a 'three-pronged attack'. It has targeted all players in the market : the industry, the prescriber and the consumer. The UK government's regulation of the industry is unique to Britain. Unlike other countries, it does not seek to regulate products prices but industry profits thereby safe-guarding its dual role. Each year companies must negotiate with the government about the amount of profit they can keep. However, they retain the freedom to set product prices on entry into the market but, must seek official approval for increases in price thereafter. The first price regulation scheme was remarkably unrestrictive, consecutive revisions have however, witnessed an increase in government powers to determine company profits and prices to the NHS.

In terms of government attempts to influence patient demand and professional attitudes towards prescribing, these have met with only limited success. Historical mechanisms of consumer regulation have been based on the use of deterrents. However, patient cost-sharing under the UK system gives little or no incentive for cost-effectiveness. This results from the increase in the exemption categories for prescription charges which makes regulation of demand difficult as prescription charges' ability to restrain volume demand for medicines is severely limited. Attempts to influence prescribers' attitudes have also failed to produce the much longed for result. This is however not surprising given the lack of real incentives and sanctions to prescribe more cost-effectively. Moreover, the government focused most of its attentions on influencing the industry and the patient although, regulation of the profession has a longer history than either of the other two.

It is this failure by successive governments to satisfactorily contain drug expenditure which led to a revision of the existing methods of regulation in the latter part of the 1980s. In 1988 new proposals were introduced (Working for Patients, 1989) which focus on exerting downward pressure on GPs through cash 'limited' budgets and tighter financial boundaries. For the first time GPs will be given a financial incentive which will include the very real threat of immediate sanctions for failure to prescribe more cost-effectively. This approach is a way of re-addressing the balance of regulation. This arises from a realization that prescribers, rather than the industry or the consumer, are the key to containing costs and reducing expenditure growth on prescription drugs.

The research interest of this project therefore relates to the latest government attempts to influence GPs' attitudes towards prescribing. The study focuses on the use of the government's use of financial incentives and strict financial boundaries to change GPs' prescribing practices. The research question therefore is :

**How effective are the new mechanisms for containing the drugs bill ?**

The next chapter outlines the method used to study the effects of the 1991 NHS reforms on general practice prescribing trends. Thereafter, the study seeks to determine whether the reforms have been successful in reducing expenditure growth and containing drug costs.

## CHAPTER 3

### Methodology

## **Introduction**

This study seeks to determine whether certain policies instituted under the 1991 NHS Reforms have had any impact on general practice prescribing trends and in particular, GP fundholders. The study compares the prescribing trends of eight firstwave GP fundholding practices with local averages for a four year period 1989 to 1993. Trends in national data between 1975 and 1992 were also reviewed. The study employed both qualitative and quantitative methods for research purposes and a case-study approach was adopted. Qualitative information was obtained from semi-structured interviews and interactive research methods in the form of informal discussions. A review of the literature was also conducted.

Quarterly Prescribing, Analysis and Cost (PACT) data were obtained from the practices and FHSAs. In addition, Prescribing Data sheets (PD2), which record annual national prescribing data, were obtained directly from the PPA and reviewed.

## **Literature Review**

The literature was reviewed to determine the research questions, aims and objectives. A review of individual practice reports and business plans was also conducted in order to compile a descriptive profile of the organizational structure and demographic characteristics of each practice. The literature was divided into sections; the first part focused on why governments have sought to curb spending on pharmaceuticals and in particular, prescription drugs issued by GPs. The investigation of the literature focused on the factors which led to the increased demand for pharmaceuticals and, the apparent 'explosion' in drug spend. This entailed examining literature detailing the changes in historical, demographic, therapeutic, economic, social and policy factors

which led to changes in demand between 1948 and the late 1980s.

In order to understand the essence of the problem the literature reviewed included economists and others' work on the pharmaceutical market and the demand for pharmaceuticals.

This work was reviewed in Chapter 1. Chapter 2 reviewed government attempts to contain expenditure growth via regulation of the industry, the profession and the consumer from the beginning of the 20th Century to the early 1990s. Archive and current literature including governmental papers and reports, journal articles and books obtained from a number of sources was thus reviewed. This section concluded that the mechanisms implemented so far achieved only moderate success. Government efforts to influence GPs to modify their behaviour failed because of the lack of incentives or sanctions. Moreover, the government had focused its attentions mainly towards regulating the industry and curbing patient demand.

Regulation of the industry had been the most consistent and rigid and was proving to be the more successful. Changing patient demand proved more difficult because of the existence of a number of exemption categories. The literature concluded the government's use of deterrents had proved unsatisfactory in containing expenditure growth on prescription drugs. This led to new mechanisms of control in the 1991 NHS Reforms. This was the focus of the remainder of the research. The central research question was therefore :

**How effective are the new mechanisms for containing the drugs bill ?**

It could be broken down into a number of more detailed research aims :

- 1 To determine the consequences of the institution of GP fundholding on general practitioner prescribing trends.
- 2 To test a number of hypotheses arising from the introduction of GP fundholding namely :
  - (a) the introduction of the cash limited drugs budget will be a sufficient motivation to influence GPs' to modify their prescribing choices based on cost;
  - (b) the effects of the reforms on non-fundholding practices will be less than fund-holding practices;
  - (c) GPs' strategies of what they say and do will be reflected in their prescribing trends and management of drugs budgets.

**Research strategies :**

- 1 Review published material relevant to the debate.
- 2 Select a case-study sample of GP fundholders and collect data pertaining to their prescribing patterns.
- 3 Conduct semi-structured interviews with relevant professionals and collect information relevant to the aims of the study.
- 4 Analyze the data and use it to test the hypotheses described in the aims.
- 5 Make conclusions about what has been shown through the study in respect of cost containment in GP generated drug expenditure.



## **Study Design :**

### **Case-studies**

Individual practice reports and business plans compiled by each practice in the two years prior to fundholding were reviewed. From this information and, information obtained from interviews and discussions with the practice (Appendix), a descriptive profile of each practice was compiled outlining the organizational and demographic characteristics, a synopsis of which is presented below and in Appendix A. These profiles would be referred to in subsequent discussions relating to prescribing trends and policy initiatives implemented by the practice.

The research sample is concentrated in three regions; the two metropolitan regions of London and The Home Counties and rural East Anglia. The group chosen was also part of a larger study of fundholding conducted by the London School of Economics (Glennerster, Matsaganis & Owens 1992). Practices who indicated an interest in adopting fundholding in the first year were approached about their willingness to be included in the study by their regional medical advisers. An initial list of potentially collaborating practices was drawn up out of which fifteen were chosen. These fifteen reflected a cross-section of types of practices who had opted for fundholding at that time and were included because of differences in size, social situation, geography, the pull of the London teaching hospitals, referral patterns and practice organization. The group were therefore not a random sample but a 'judgement' sample chosen to reflect a variety of situations not a statistically representative group.

During the initial interviews in 1990 five of the practices chose not to proceed in the study. The remaining ten practices therefore made up the initial sample used in Professor Glennerster's study. It was agreed with Professor Glennerster at the beginning of this study that I should,

under his supervision, be entirely responsible for that part of the wider study which concerned the drugs budget of these practices. Although all practices agreed to submit their prescribing data for a period of at least four years, it proved difficult to obtain a complete data span from three practices. By the end of the study two practices had to be totally excluded. Data for the third practice, although also incomplete, was sufficient to provide some description of prescribing patterns post reforms in relation to the practice's prescribing policies.

Thus, eight fundholding practices participated fully in the study. They allowed me access to their drug expenditure data and discussed their management strategies for regulating drug spend. As a result of the stringent entry criteria to the fundholding scheme <sup>(1)</sup> and, the geographical pattern of applications an uneven spread of practices entering fundholding in the research regions emerged. Very few traditional inner city deprived areas entered the scheme, the highest concentration of practices being in semi-rural areas just beyond greater London (see below and also Appendix A).

### **Practice profiles :**

#### **Practice 1**

This is an inner city prescribing practice situated in an affluent part of South West London. As a result of its location in an area where most of the population belong to British social classes I & II, it does not experience many of the problems generally attributed to inner city practices. The practice population, of approximately 9,000, reflects the cosmopolitan nature of the city but has a relative excess of patients aged 18-30 years, many of whom live in flats and

---

<sup>1</sup> Have a registered list size of at least 9,000 and, show an ability to manage budgets (eg. adequate administrative support and IT and information systems).

hostels which partially explains the transient nature of the population.

## **Practice 2**

A small town/semi-rural prescribing and dispensing practice in West Hertfordshire, this practice was first established in 1912 and today has two surgery sites and five GP partners. The practice population of 12,239 reveals 46% aged 15-44 years and 24% aged 45-64 years. Notably, the elderly make up 12% of the list size.

## **Practice 3**

This combined prescribing and dispensing practice, situated about five miles from a new town and growing industrial area, has a catchment area spanning two counties with 60% of its patients inhabitants of Bedfordshire and 40% Buckinghamshire.

The practice was established about 100 years ago and today has 5 GPs caring for the welfare of 9,300 patients. The population remains relatively static at 7% with lower than average mobility. Particular characteristics of the practice population are, a higher than average proportion of elderly (15%) and, the 75 year olds and over represent a slightly higher percentage compared with the younger elderly. In addition, there is a lower than average number of children under 5 despite a fairly recent (1992) increase in the population.

## **Practice 4**

This prescribing only practice was established in 1967 in an essentially very deprived area in north London. The population of the area is predominantly Orthodox Jewish though there is an upward trend of other ethnic minority groups coming to live in the locality. These groups include political and economic refugees from Turkey, Kurdistan and

Zaire. The patient population of approximately 13,000 reflects the deprivation experienced by many inner city areas. It has a high turnover of patients (average 20% per annum) mainly among the young, though in reality the list size remains fairly static. Many of the patients joining the practice have greater health needs than those they replace and include the homeless, those under 'Care in the Community' and, an increasing elderly population, 11.4% of the practice population are over 65 years.

#### **Practice 5**

This small town/semi rural prescribing and dispensing practice in South East Hertfordshire was established in 1981 and today has 9 partners. The area is fast developing and there has been a considerable amount of new housing in the area which in turn, has resulted in an influx of young married couples with small children and a subsequent high patient turnover. There has also been an increase in the stock of sheltered accommodation consequently, there has been a sharp rise in the numbers of elderly residents in the area. There is an upward trend in population growth and of those registering with the practice. The number of new patients registering each quarter is around the 250 mark and there is currently no sign of a slow down in this upward trend.

#### **Practice 6**

This small, thriving market town practice in rural East Anglia is a combined prescribing and dispensing practice and operates from two surgery sites. 7 GPs, 2 part-time assistants and 1 GP trainee work in the practice and look after a practice list size of 13,000 which is essentially unremarkable. The majority of patients are aged 5-65 years old, there is a significant elderly population (20%) and only 5% of the registered patients are under 5 year olds.

## **Practice 7**

This is a large training partnership based on the outskirts of greater London. The practice was established at the turn of the century and today, it operates from only two sites. The area is populated by a predominantly working and lower middle class transient population and is witnessing a rapid increase in the numbers of political and economic refugees from countries such as Turkey, Zaire and Kurdistan. About ten years ago this was a very industrial area since then however, there has been a rapid decline in industry and a dramatic increase in unemployment.

The practice population of 14,823 reflects many of the elements of the overall population. A study carried out by the practice of under 5s registered with the practice found that at least 25% were of ethnic origin as defined by family name. The study did not however, reveal those children whose parents' origins are ethnic such as West Indian, but whose name is English sounding eg. Phillips, Williams etc.

## **Practice 8**

This partnership, in the South East Hertfordshire commuter belt, was established about 30 years ago. It is a small town prescribing and dispensing practice with two surgeries. There are 6 partners. The practice list size of approximately 13,000 is quite unremarkable with respect to demography and reflects the national (?) trends. The practice has however, detected the existence of an exceptional multiple pathology, especially amongst its elderly population (15.4% of list size) and relates this to the area's 'geographical quirk' which demonstrates an uncharacteristically cold and damp climate.

## A basis for comparison

Due to time constraints of the study and the difficulties of finding comparable statistical data on prescribing in non-fundholding practices, the prescribing costs for these eight fundholding practices were compared with prescribing data from all the practices in their Family Health Service Authority (FHSA).

Ideally the fundholders should have been compared with their local FHSA data excluding their own and other fundholders' returns. However, the PACT data could not be disaggregated in this way, the PPA could not or would not do this despite many attempts. This did not however, prove ruinous to this research design for two reasons. First, fundholders in the first wave were for the most part, a small minority group (ie. 5%) and therefore had only a small impact on the FHSA averages (this was least true in Hertfordshire where, in the first wave the percentage of fundholders was over 20%). Secondly, the inclusion of fundholders in the average biased the results towards showing there was no difference between fundholders' figures and the average FHSA.

The nature of the comparison also makes a statistical significance test inappropriate. The results are therefore indicative no statistically conclusive. They are however, in line with others' research which followed a randomized control trial procedure and, reviewed national data covering all practices in the country analyzed by the Department of Health. The statistical material is best thought of as background to these first studies which examine how practices went about containing their drugs budgets.

## **Semi-structured interviews**

Medical advisers from three FHSAs, one located in The Home Counties, one in Inner London and the other in rural East Anglia, who had fundholding practices participating in the study were also interviewed. These three FHSAs were chosen because together, six of the study's practices were accountable to them. FHSAs' prescribing trends were compared with national averages to illustrate how typical they were in comparison to the national picture.

Contact with practices and FHSAs was made initially in writing. This was followed up a week later by telephone. This telephone contact outlined in more detail the research aims and objectives, timetable and what contribution to the study the practice/FHSA could make. An appointment to visit and interview one of the practice team (ie partner and/or practice manager responsible for fundholding/drug budget) or FHSA medical/pharmaceutical adviser was also made at this contact. I conducted all face-to-face interviews.

The purpose of the interviews was to elicit the views of practice and local health authorities about the impact of the new budgetary system on prescribing trends and behaviours. It was also an attempt to define the policy processes and decision-making methods employed by those directly involved in applying the new system (Appendix B & C). Each interview lasted between one and one and a half hours and was usually attended by the partner responsible for managing the drugs budget and the practice manager.

Initially, interviews were to be conducted approximately one year post implementation of the reforms. However, it became apparent nearer the interview time this would not be feasible for either practices or FHSAs. This was because this was one of their busiest administrative times of the year as they undertook preparing their end of year financial reports for

audit. Consequently, the interviews took place 15-18 months post implementation and after practices had produced their first set of end of year returns.

### **Interactive research methods**

These interviews were supported by regular and informal telephone discussions with the practice managers who were contacted approximately once every six to eight weeks.

Through these contacts I was able to successfully build up a good rapport with each practice. These contacts provided regular feedback about how the reforms and any new FHSA or regional directives were affecting the practices in addition to, any in-year changes with regards to demographic, morbidity and practice characteristics.

Other agencies contacted informally by telephone and occasionally by letter, included the Department of Health, The Northwest Thames Regional Health Authority, The University of Leeds Prescribing Research Unit, The Prescription Pricing Authority, The Royal College of General Practitioners, The British Medical Association, The Associated British Pharmaceutical Industry, The Office of Health Economics, The Research Teams of the Conservative, Labour and the Liberal Democrats Parties. From discussions with these professional agencies I was able to ascertain information regarding national and regional policy initiatives as well as prescribing trends.

In general, these agencies were helpful and willing to discuss issues surrounding the reforms and its intended effects. I did however, encounter problems with the larger government department who were severely restricted in what information they were able to discuss. They continuously referred me onto other departments within the institution who then referred me on again. They also refused me access to



their library records and documents. In view of these specific problems I had to rely on the other sources mentioned above eg. Prescription Pricing Authority, Office of Health Economics, Association of British Pharmaceutical Industry etc.

Responses to the questions asked in both the semi-structured interviews and informal telephone discussions were recorded at the time in written note form. They were transcribed fully shortly after completion of the interview/discussion.

### **Prescribing data**

In addition to interviews and informal discussions information specific to prescribing trends was gathered from returns to the PPA from ten firstwave GP fundholding practices and three FHSAs. Annual national aggregated figures for prescribing information was also collected. This information included aggregated quarterly practice and FHSA figures for net ingredient costs, number of items prescribed, average cost per patient, generic percentage and list size. The first two of these measurements were also disaggregated by therapeutic category (ie. cardiovascular, gastrointestinal, musculoskeletal, respiratory, central nervous system, infections and others).

Prior to June 1991 practices which were both dispensing and prescribing and their FHSAs received two set of quarterly PACT data. Though the data recorded the same prescribing variables, as above, it did so according to whether prescriptions had been written for prescribing or dispensing patients. After June 1991, the PPA aggregated this data and practices and FHSAs started to receive an aggregated set of quarterly figures. For the purposes of this research both prescribing and dispensing PACT figures for individual practices and FHSAs prior to June 1991 were aggregated to

give a single figure for each variable. This was achieved by adding the dispensing figures to the prescribing figures except in the case of percentages, such as generic percentage (Appendix D).

The types of questions asked of this quantitative data include :

- a     What assumptions can be made about prescribing trends in terms of expenditure, numbers of prescriptions written, average cost per person, categories of drugs prescribed etc ?
- b     How do fundholding practices compare with their local area averages in terms of prescribing trends ?
- c     How do fundholding practice FHSA's compare with the national average ?
- d     Since fundholding are there any marked changes in prescribing trends at practice, FHSA and national level ?
- e     If so, what might these changes be a result of ? (eg. the introduction of new practice/FHSA policies such as new drug formularies, generic prescribing etc)

The initial request for individual practice and FHSA quarterly PACT data Level 1 for the one year prior to and two years post fundholding was made by post. This level of data illustrated individual practice prescribing compared with FHSA averages and FHSA prescribing compared with national averages respectively. In most instances practices were able to provide this information. Occasionally however, the data had been mislaid and was therefore requested from the PPA, who retain a practice's quarterly PACT for the last six quarters. From April 1991 each practice and FHSA was

contacted quarterly by phone in the first instance, and followed up by post if necessary, for their last quarter's PACT Level 1 data.

Data collection was sometimes slow because there was usually a period of about ten weeks before the PPA received all practice and FHSA prescription returns and before they issued the subsequent feedback to practices and FHSAs. This led to the relevant information only being forwarded onto me approximately twelve weeks after the quarter end. In addition, as mentioned previously, data collection at the year end was further compounded by end of year audits and reports. Consequently, my requests for prescribing data at this time of year were secondary to a practice's/FHSA's other commitments. This delay was between sixteen and twenty-four weeks in total.

#### **Analysis of data**

The quarterly data for each practice and FHSA was aggregated to year end. Trends were produced for total net ingredient cost, total number of items prescribed, average cost per patient and proportion generic prescribing. As a true measure of cost-restraint it was decided to examine the annual growth trends of either average cost per patient or, average cost per prescribing unit (<sup>2</sup>) rather than average cost per item prescribed. This decision was based on the knowledge that average cost per item is an unsatisfactory measurement tool. Until recently volume ie. number of items prescribed) has been presented in two ways.

---

<sup>2</sup> A prescribing unit is a unit which is weighted to take account of the effect of age on demand. In the 1991/92 and 1992/93 budgets, budgets were calculated according to a weighted population whereby a person aged 0-64 years was awarded a weight of 1; persons aged 65+ were awarded a weight of 3. This means persons aged 65 and over are more likely to demand three times more than persons aged 0-64 years

It was either presented as 'prescribed items' which made no allowance for the quantity of drugs in each item or, in the listings of prescriptions by different quantity and strengths which cannot be conveniently aggregated (Maxwell, Heaney et al 1993; Chapter 9). Moreover, any indication of a reduction in the annual rate of expenditure may simply be a reflection of reductions in volume rather than cost-restraint. Therefore, the use of average cost per patient or per prescribing unit which takes into account patterns of expenditure in relation to volume would be more likely to reflect real cost-containment. The next stage was to determine which of these two units of measurement should be used.

It is recognised that the elderly demand and receive more health care and drug therapy than a younger population (Chapter 1). This is taken into account in the health care 'formula' (Chapter 4). It was therefore not enough to choose average cost per patient without reference to the impact of elderly on prescribing costs. The choice of measurement was based on a system which ranked practices according to their total percentage growth in average cost per patient and per prescribing unit (Appendix E). The practice with the smallest percentage growth was awarded a rank of 1 and the practice with the highest overall percentage growth was ranked 8.

Only when the rank for average cost per patient was higher than average cost per prescribing unit was there any suggestion that the elderly accounted for the majority share of the practice's drug spend. Only one practice in the study demonstrated a higher rank for average cost per patient (Appendix E). Therefore, a decision to use average cost per patient as a measurement tool of cost-restraint was made because, there was little evidence to suggest a need to take extra consideration for the age factor.

Practice trends for all these measurements were compared with FHSA average trends in all but average cost per patient due to the lack of FHSA data. The data of three individual FHSAs was also analyzed and trends subsequently produced for total net ingredient cost, total number of items prescribed, average cost per patient and proportion generic prescribing. These were compared with national average trends respectively in all but average cost per patient due to the lack of national data. This was to determine how typical they were of the local average.

In an attempt to obtain a clear indication of potential reasons for prescribing differences between groups, further investigation of the data was carried out. This involved scrutinizing each of the therapeutic categories to see which one(s) might be responsible for producing higher/lower than local/national average differences. These were then reviewed in the light of the information recorded in the practice profiles and with the qualitative data collected to determine whether any significant patterns could be explained.

Annual national data taken from PD2 forms and from the DoH's Health and Personal Social Services Statistics for England for the period 1975 to 1992 inclusive were examined and trends illustrating were produced :

- a) total net ingredient cost
- b) total number of items prescribed
- c) average cost per patient
- d) proportion of generic prescribing

This data was reviewed in conjunction with information detailing national cost containment policies for this period.

## **Presentation of the material**

The succeeding results chapters present first, the national trends in prescription costs followed by, the FHSA data and then practice level material (Chapters 6-8). I begin however, by explaining the 1991 health reforms and GP fundholding.

## **CHAPTER 4**

**Controlling prescribing costs from information and  
advice to cash limited budgets : 1985-1992**

## **Introduction**

Chapter 2 examined government attempts to curb the growth in drug spend of prescription drugs by, regulating industry prices and profits and trying to influence prescribers' choice and patient demand. Essentially, GPs had experienced very few restraints on their 'freedom' to prescribe and, in only a few exceptional cases were GPs asked to justify prescribing particular items. Such controls which did exist were largely ineffective and fell outside the remit of the Family Practitioner Committee's responsibility.

This chapter focuses on the movement away from using only information and advice as a form of control to a method which incorporates these with cash limited budgets, financial incentives and immediate cash penalties. The chapter begins by outlining the origins of the move towards cash limits before discussing the structure of the new budgetary system and how this applies to setting the various budgets at different levels. The chapters moves onto discuss the role of the PACT information and feedback system under the new system of regulation followed by the revised method of referral to the Professional Committee.

## **The origins of the NHS reforms**

In the mid 1980s the Treasury's attention focused on primary health care which, unlike hospital and community services remained uncash limited. It was also the fastest growing sector of NHS spending and pharmaceutical spend generated by GPs was the fastest growing element of spending within this sector. As a consequence, the government was keen to improve the system for monitoring GP prescribing so that it could act



where necessary to control what it defined as unreasonable and/or excessive prescribing. However, a system to allow more rigid and regular monitoring of GPs' prescribing was already being developed by the PPA (Chapter 2). The Treasury's discussions of the mid 1980s also featured an idea of imposing cash limits on GPs' prescribing. The idea was pursued again in new discussions set up by the Thatcher government (1988) proposing much broader reforms of the whole NHS.

Those participating in the discussions were divided on which of two approaches to adopt (Butler 1993; Glennerster 1992). On the one hand, it was argued that District Health Authorities (DHAs) should be given the power to purchase all services in their area on behalf of their GPs. The system should be further modified by forcing hospitals to compete with each other to gain contracts internally (A Enthoven 1985). On the other hand, there were those who wanted GPs to become the purchasers. This model stemmed from two premises. The first was GPs would be better purchasers because they were closer to patients and therefore, more likely to be informed about preferences than remote districts (Maynard 1983; Glennerster 1992). Secondly, GPs should be faced with the financial consequences of their actions. Previously, they referred patients to hospital without any responsibility for the financial consequences of their actions.

By giving them a cash limited hospital budget they would be forced to consider which referrals were most necessary. Subsequently, this might reduce the wide variation in referral patterns which could otherwise not be explained. In exactly the same way, a cash limited drug budget would force GPs to think about their prescribing choices in a serious way. If the two budgets were amalgamated or, if GPs could move money from one budget to another they would have a direct incentive to contain their drug spending for use on other purposes or, stop and re-spend it on reducing their capacity to refer. For these reasons the GP based budget

model was more attractive than the Enthoven model and was subject to achieve wider objectives.

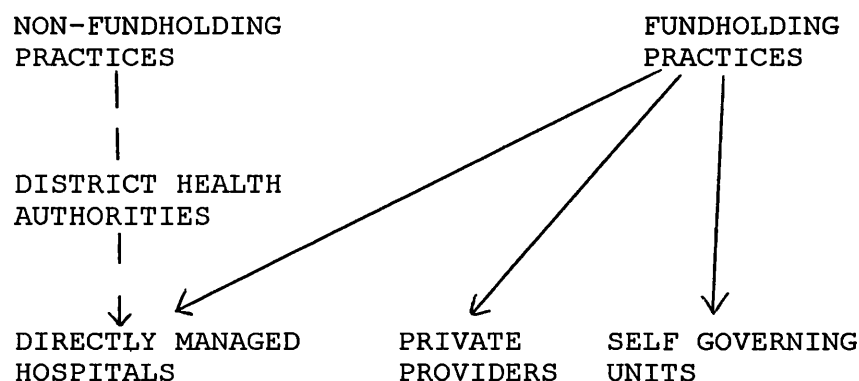
However, obvious problems existed in transposing the Maynard HMO system to the UK. In the first place, under Maynard's system the HMO held a registered patient list size of not less than 50,000 and incentives to discriminate against potentially expensive patients. In contrast, no UK individual practice or even group practice had a list size anywhere near this figure. Moreover, doctors had never had any incentive to discriminate against a patient on the grounds of expense. Despite these problems the government was eventually able to define a number of solutions. Firstly, only practices with a list size of 11,000 and over could become fundholders (Glennister 1992). However, after further discussion it was decided this figure was too high and was subsequently lowered to 9,000.

Secondly, to safeguard against bankruptcy and/or over-spending on annual budgets as a result of expensive patients, a 'ceiling' of £5,000 was placed on how much a practice would have to pay for anyone patient in a single year for hospital costs. A similar but more informal and regionally based 'stop loss' for drugs was worked out. Any expenditure over and above this limit would automatically be paid for by the district. Finally, it was decided that budgets would, in the first instance, only cover standard and relatively inexpensive treatments without open-ended follow-ups. Initially GPs would be able to purchase outpatient treatment, diagnostic tests and certain inpatient and day case treatments. With the publication of the working document came the fuller technical list of the treatments to be included. Spending on drugs prescribed by the practice were included.

After consideration of Maynard's bottom-up funding and Enthoven's secondary level purchaser models, the government

chose to adopt both simultaneously. This led to the new structure of organization as shown in Figure 4.1.

#### Purchasers and providers in the internal market



**Figure 4.1**

'Internal' arrangements  
Contract-based transfer funds \_\_\_\_\_

Reference : Glennerster, Matsaganis & Owens (1992)

#### **The new budgetary scheme**

Under this new structure two types of general practice have emerged, fundholding and non-fundholding. Practices with the appropriate list size can apply for fundholding status for the next financial year at anytime during the current year and fundholders can, if they wish, opt out of fundholding at a later date. Their budgets were originally set by the Regional Health Authorities (RHAs) but in 1991 were later set by Family Health Service Authority (formerly known as the Family Practitioner Committee (FHSA)) within guidelines from the RHA. These practice firm budgets comprised three elements to cover hospital services, practice staff costs and pharmaceuticals. In 1993 Community Health Service budgets were added to the budget.

The practice has the freedom to use this combined budget flexibly. This acts as a powerful incentive for fundholders

to save on one element of expenditure, drugs for example, and spend the money elsewhere. However, the consequences for failure is high. Any budget overspend requires immediate input from another element of the budget. This may involve transferring 'funds' from the prescribing element for example to make up the shortfall on hospital services. Non-fundholders on the other hand, do not have to worry as much about such occurrences.

In contrast to fundholders, non-fundholders are merely set a target rather than a firm cash limit that covers prescribing costs (ie. indicative prescribing amount (IPA)). They are nonetheless expected to keep to their IPAs. The FHSAs have to cover any practice overspend from their reserve budgets. FHSAs have experienced the problems in trying to finance practice overspends from their limited cash resources. They have limited sanctions to keep non-fundholding practices within their drug budgets (ie. referral to the Professional Committee).

One of the major dilemmas facing the DoH was how to set fundholders' practice budgets. The original intention was to allocate the hospital element of the budgets on a weighted capitation formula like DHAs. This however proved impractical (Glennerster 1992). Therefore, in the first years budgets were set based on historic levels of referrals and their costs given correct hospital services. Practices' drug budgets were to be set in the same way as non-fundholders' IPAs. This chapter will now discuss in more detail the process of calculating and monitoring the prescribing part of the practice budget. The process begins with setting the national budget.

### **Setting drugs expenditure at national level**

Each year the DoH forecasts the total national expenditure on drugs, medicines and appliances to be prescribed by GPs and

dentists. This calculation uses a statistical model which takes into account the cost and volume of prescriptions including demographic factors, product mix and expected increases in drug manufacturers' prices. The sum for prescribing amounts set under the non-fundholding scheme (ie. IPAs) is ring-fenced and is not available to finance other areas of the health authority expenditure. The national sum for Family Health Service dispensed drugs excluding the sums for GP fundholders is then distributed as 'firm budgets' to each of the 14 RHAs.

#### **Authority level firm budgets**

Authority level firm budgets represent anticipated expenditure on all prescriptions dispensed by community pharmacists, dispensing doctors and appliance contractors paid for by each authority. As such, firm budgets take account of and include elements for:

- a basic price of the medicines and appliances dispensed;
- b deductions for discounts available to dispensers;
- c additions for container allowances available to dispensers;
- d reimbursement of VAT for dispensing doctors and appliance contractors;
- e prescriptions written by dentists, which are not separately identifiable;
- f prescriptions written by some doctors other than GPs but dispensed in the community.

RHAs are notified of their firm budgets at the same time they are notified of the likely level at which FHSA firm budgets

should be set. These regional firm budgets are flexible enough to allow, if required, FHSA firm budgets to be adjusted according to locally considered factors. The model used to calculate FHSA firm budgets adjusts the total basic prices (net ingredient costs) of drugs paid for by each FHSA in the last calendar year to take account of demographic factors.

The starting point for calculating budgets, taking into account demographic factors, is the age profile of the population. Age is accepted as influencing prescribing costs and an attempt has been made to standardise for the age factor in the formula by estimating a set of expenditure weights which correspond to the prescribing units used in PACT (<sup>1</sup>). These weights (Table 4.1) were then applied to each FHSA's resident population, using Office of Population Census Statistics (OPCS) figures (<sup>2</sup>), to derive a weighted population for each FHSA. The total of net ingredient costs of drugs in each FHSA in the last calendar year is then divided by the calculated age weighted population of each FHSA to yield an estimate of annual basic price weighted for age. This projection of basic price derived is then expressed as a proportion of the total projections for all FHSAs and these proportions are used to divide the total national sum for the coming year into firm budgets for each FHSA. The recommended firm budgets for each FHSA are aggregated to provide the total firm budget for each RHA.

---

<sup>1</sup> Aged 0-64 = weight of 1, aged 65+ = weight of 3. These weights were used for setting budgets between 1991 and 1993 inclusive after which, the new weighted capitation system and the ASTRO PU were used (refer Chapter 9).

<sup>2</sup> Regional PUs are derived using OPCS figures rather than aggregated practice list sizes. This is because the Prescribing Research Unit (Leeds) found that practice list size has a tendency to record large variances eg. -2% to 39%.

## Prescribing Unit Values

Age Group (years)	Men	Women
<64	1	1
>64	3	3

**Table 4.1**

### Local variation

At least one RHA in the country however felt this national formula was too crude. It argued the application of the same increase nationally did not reflect accurately individual FHSA or practice needs. Subsequently, it instructed one of its FHSAs (FHSA N) to investigate alternative methods for calculating FHSA, practice firm budgets and IPAs which could be implemented regionally. After a period of investigation the method finally adopted by the region forecast spending based on, specific practice expenditure data for designated time periods rather than the DoH overall two year annual drug spend. The method examined average cost per PU for the individual practices for a full range of quarters (last four quarters of 1989/90) to determine whether a pattern existed.

It observed there was a clearly defined seasonal quarterly change and an underlying curvilinear trend. Examination of the annual cost per PU for each of the two years showed practice costs remained fairly consistent with ranking amongst other practices remaining unchanged. This observation supported the adoption of some form of forecasting procedure. Thus, if a practice spent on average £3.50 per PU last year and this year, it was likely it would spend £3.50 in the next year plus inflation (<sup>3</sup>; Financial Pulse Feb. 1992). The FHSA used a monetary figure rather than percentages in the equation because they found year on

---

<sup>3</sup> Interview with FHSA N

year it reduced the variation between practices as the percentage becomes less and less.

This regional/FHSA defined formula embodied individual practice costs in association with the FHSA as a whole. It combined a bottom-up strategy which attempted to reduce the level of variation between the practices whilst remaining responsive to individual needs yet at the same time, retaining a uniform overall rate. The success of FHSA N's method was graphically illustrated by its overall end of year spending figures which recorded a 1% underspend in the first year of fundholding (Chapter 8; <sup>4</sup>) compared with an 8%-13% for the rest of the country for the same time period (Doctor, Sept. 1992).

By the time the FHSA received information about a centrally defined method for national implementation they had already won the support of their Local Medical Committee. They were thus able to successfully convince their RHA that their method, rather than any other, was more applicable for their practice population. Consequently FHSA N, in the first year of fundholding, implemented its own firm budget/IPA formula rather than the DoH dictated one.

#### **GP fundholders :**

Under the scheme, RHAs are given separate guidance about calculating amounts for GP fundholders. FHSAs are responsible for recommending to the RHA the size of the drug element of the practice fund. In doing so they have to calculate a drug expenditure for each potential fundholder in exactly the same way as for non-fundholders. The practice firm budget behaves like a RHA and FHSA firm budget in that it is cash-limited and takes account of the national average discount available to pharmacists and an estimate of the cost of containers. Nevertheless, in the first two years of

---

<sup>4</sup> Interview with FHSA medical adviser



fundholding, the methodology used to set fundholders budgets was precisely the same as for non-fundholding and was based on historic prescribing patterns.

#### **Practice level indicative prescribing amounts**

IPAs differ in two important respects from firm budgets at authority level. Firstly, like practice firm budgets these amounts are the result of a 'bottom-up' process which takes full account of the needs and circumstances of each practice. Unlike practice firm budgets and authority firm budgets, amounts set for non-fundholding practices represent only the basic price of drugs prescribed by and dispensed for each practice ie. there are no discounts or container cost allowances. It is clearly impossible to determine precisely what each practice is expected to spend in the coming year. Therefore IPAs represent the best possible estimate of what each practice can reasonably be expected to incur in the forthcoming year. When determining practice firm budgets and IPAs FHSAs must be aware and take account of basic information about practice prescribing costs. This information, which should if possible be quantified, includes a profile of each practices' list size including:

- a forecast changes in the patient list size and age/sex profile;
- b forecast changes in the number of patients requiring particularly expensive medicines;
- c forecasts of changes in services provided by the practice which may have implications for increased drug costs eg. screening for hypertension;
- d any special interests of the practice eg. treatment of drug addicts;

- e whether the practice has in its area a nursing home or other institution where there is a need for particular kinds of drugs or high volumes of drugs;
- f what local hospital out-patient prescribing policy may be;
- g 'neighbourhood' factors about the general area in which the practice is located including the nature of local employment and local economic factors;
- h information about the number of temporary residents as they are thought to significantly impact on the prescribing of particular practices.

The interpretation of all the data available about individual practices and their prescribing patterns requires consideration by the FHSA professional adviser (ie. medical adviser). It is their role to form an opinion as to whether the practice's current level of expenditure can be clinically justified. In some cases, the medical adviser may be able to decide this on the basis of all the information available. However, for the majority of practices it may be necessary to hold detailed discussions with doctors to ascertain the reasons for their prescribing trends which might be unknown to the medical adviser.

However, at least one FHSA in the study reported that not all practices had initially been willing to disclose patient-cost information. FHSA H found some GPs failed to inform them accordingly of expensive patients and treatments which subsequently resulted in a 'shortfall' in allowances and a lower than expected budget for some practices. The medical adviser explained some GPs failed to reveal this information because, they resented being asked to disclose information which they felt was intrusive and somehow intended to undermine their clinical freedom. In the second year of

fundholding however, the FHSA felt that practices had 'learnt their lesson' and readily submitted all the relevant data.

Despite the problems experienced by FHSA H there was an overall agreement that GPs had responded willingly to requests for patient information. FHSAs also agreed that they in turn examined the comments closely in order to determine the extent to which their amounts should be modified. On the whole, they felt they had calculated practice firm budgets/IPAs realistically and few warranted change. FHSA N for example found that only five practices justified amendment.

Estimates of forthcoming drug expenditure are not only based on profiles of the population but also historical patterns of prescribing behaviour. It is important therefore for FHSAs to build up practice data on overall expenditure, expenditure by at least therapeutic group level, prescribing by particularly expensive drugs and the levels of generic prescribing. I noted in discussions with FHSA H that they had chosen to apply practice spending figures for 1990/91 in their calculations of practice amounts rather than the DoH's suggested 1989/90 figures. They explained this was because they believed two year historical spending data gave rise to crude predictions of future spend.

Once practice historic spending patterns have been outlined they are then raised to current cash levels by applying a national figure, ie. uplift factor, for in-year price changes. This figure is supplied annually by the DoH. In the first year of fundholding the uplift was calculated at 13.5% and when changes in volume were added the final uplift was 18.5%. This sum can be adjusted up or down to that level depending on whether the medical adviser thinks it is clinically justified. This adjustment in uplift has been illustrated by an National Association of Health Authorities Trust (NAHAT) survey which found that, although 32% of GPs in the study were allocated an uplift of more than 13.5% more

surprisingly, 9% of practices had to cope with an uplift of less than this figure (Berwick 1992). Explanations for such differences range from price and volume changes to deprivation and a sympathetic FHSA.

FHSA B for example, awarded a 16.5% uplift for their first year of fundholding. This was intended to cover a 14% change in product mix (<sup>5</sup>) and price rises plus, a 2.5% volume change in prescribing as a result of the new screening contracts. Similarly, an FHSA in Merseyside awarded 16.5% uplift explaining that : 'We tried to give a meaningful IPA to our GPs. Last year we gave a 16.5% uplift to practices and a third of them have met that target. We can justify this because of the deprivation in the Wirral, although it may be appropriate to stick to the DoH uplift in affluent areas' (Medeconomics 1992). In comparison, FHSA H calculated their uplift as 14%, only slightly higher than the national average. This was expected to cover an estimated 7% annual increase in inflation and other costs.

In contrast to the DoH's uniform uplift figure, FHSA N again chose to apply its own 'type' of uplift. This was based on its calculations of cost per PU for the region as a whole. Cost per PU translated into percentage terms allowed for practice variation and meant a 12.1% addition to the basic amount in the first year of fundholding. Unlike the national uplift figure which essentially covered two years (ie. based on 1989/90 figures meant it covered 1989/90 and 1990/91) this figure covered only one year. Though this may seem generous in comparison to the national average, the FHSA felt the figure was realistic and was justified by the end of year spending figures.

---

<sup>5</sup> Product mix is simply the extent to which doctors are prescribing one product rather than another as the favoured treatment for a particular condition. Such switching is generally the change from the older, cheaper products to the newer and more expensive ones.

There has been considerable criticism of the 'unrealistically and inadequately low' level of uplift calculated by the DoH (<sup>6</sup>; Medeconomics 1992; Financial Pulse Feb. 1992). However, from the examples given such criticism should perhaps be challenged in view of the fact that, not one of the FHSAs allocated the 18.5% maximum allowed nor did they offer an explanation why.

#### **A separate formula for GP fundholders**

In 1992 the DoH decided that it must move toward formula funding for both the hospital and the drug element in fundholders' budgets. Historic cost budget setting defeated much of the point of the reforms in setting a limit to budgets unaffected by the practices referring and prescribing peculiarities. The Department therefore asked the Leeds University Prescribing Research Unit to work on a drug formula which could be applied to both fundholders and non-fundholders alike, but with the prime factor being the need to set budgets for the increasing number of GP fundholders (Chapter 9).

#### **Containment by regulation**

It is generally assumed that, because relatively few cases of excessive and/or unreasonable prescribing against GPs have been referred to the Local Medical Committee and have been proven (Chapter 2), GPs prescribe sensibly. This however does not mean GPs prescribing should not continue to be monitored. Quite the reverse, regular in-year monitoring of GP prescribing trends is clearly vital to the success of the scheme. A year or two before the reforms health authorities automatically began to receive monthly reports on expenditure in their areas. This provided the basic information needed to monitor the scheme. RHAs receive statements for each of the FHSAs and FHSAs received statements for each of their

---

<sup>6</sup> Interview with FHSA

practices. At all levels the objective was and is to detect early on any movement away from anticipated expenditure and take steps to discover the causes.

Prior to the 1991 reforms the government had announced (DoH Nov. 1987) its intention to make FHSAs more responsible for monitoring individual practices' and doctors' prescribing through the use of PACT data. Subsequently, the 1991 reform package included in the financial allocations to FHSAs funds to employ a full-time medical adviser and pharmaceutical adviser. The medical adviser is initially responsible for advising FHSAs on how to compile prescribing profiles and how to calculate practice firm budgets/IPAs and for each practice as well as, monitoring the practices' performance against these with the aid of monthly PACT expenditure reports and statements.

At grassroots level the medical adviser with input from the pharmaceutical adviser, is expected to discuss with practices their current levels of generic prescribing; the range and nature of products prescribed within particular therapeutic groups; whether they are prescribing drugs in accordance with currently accepted medical knowledge and, whether they are operating effective repeat prescribing systems. In addition to his/her advisory role the medical adviser acts as a liaison officer between the FHSA and practice notifying the FHSA of any unexpected changes in circumstances of the practice in-year.

Quarterly PACT data, provided in three levels of detail and sent to FHSAs, outlines individual practice and FHSA expenditure compared with national average for each of the five therapeutic categories. This and other information received by the FHSA is intended to alert the medical adviser to the fact that a particular practice has expenditure which warrants closer monitoring. In such instances, the medical adviser usually obtains a PACT Level 3 report for the practice and arranges a discussion with the GPs. The aim of

such discussions is to arrive at a shared understanding of the prescribing expenditure of the practice.

FHSA H for example, said that its 'team' inspects each quarter each practice's Level 3 data and pulls out any major and/or noticeable changes in prescribing behaviour. This includes any over/underspend of more than 5%. They explained Level 3 information allows them to closely scrutinise practice prescribing patterns and costs and identify problem areas more easily. Once a 'problem' area is identified the practice is targeted for a visit by the pharmaceutical adviser who reviews the Level 3 data with the practice, together they discuss the 'problem' and the solutions. This method was certainly the most commonly adopted procedure for monitoring amongst the FHSAs interviewed.

FHSAs are expected to exercise other professional and managerial options when examining prescribing. For example, where it perceives generally poor standards of prescribing or persistent prescribing for symptomatic short-lived conditions, an FHSA may prefer to deal with the matter by education, audit and actions of the FHSA medical adviser rather than by reference to the Committee which is seen as a last resort. However, in the event the medical adviser feels there is a case to refer to the Professional Committee, he/she must first satisfy himself/ herself that :

- a discussions between himself and the GP have not resolved the matter to the medical adviser's satisfaction;
- b the GP's prescribing is excessive as defined by the new regulation (<sup>7</sup>) and;

---

<sup>7</sup> Excessive prescribing is defined in Regulation 15 of the National Health Service (Service Committees and Tribunal) Regulations 1992 as :

'Where.... the cost of any drug or appliance.... ordered by a doctor on a prescription form in relation to any patient is, by reason of the character of the drug or appliance in question or the

- c there is documentary evidence, which if necessary can be obtained from the PPA who retain all prescription forms for a period of 21 months.

If all these conditions are met the FHSA is then responsible for making the case at the hearing.

### **Referral to the Professional Committee**

A case of suspected excessive prescribing is referred to a Professional Committee under Regulation 15 of the Services Committee and Tribunal Regulations (1992), announced in 1990 under Section 10, Improving Prescribing, for further investigation (NHS Management Executive 1992). Previously, such cases were referred to the Local Medical Committee only by the Secretary of State. The regulation applies both to fundholding and non fundholding GPs and each case is heard by a three-member Professional Committee. Such committees are however not 'standing' and so one must be appointed by the FHSA. The Committee comprises :

- a a practising GP chosen by the FHSA, though there is no requirement for the GP to be local;
- b a practising GP nominated by the Local Medical Committee;
- c a doctor nominated by the NHS Management Executive. This doctor must be drawn from a panel who has substantial experience of clinical pharmacology and who has been agreed by the General Medical SubCommittee.

Once a case has been referred to the Committee the onus of responsibility for providing all the necessary documentation to the Committee including defensive comments from the GP,

---

quantity in which it was ordered, in excess of that which was reasonably necessary for the proper treatment of that patient....'



arranging the date, time and place of the hearing and acting as liaison officer between the Committee and the practitioner falls on the FHSA.

The Professional Committee in turn is responsible for deciding whether or not there has been excessive prescribing. If it decides the case has been proven it may then decide to withhold remuneration from the doctor concerned. The Committee must notify both the FHSA and GP of its decision and its reasons for its judgement. The GP then has the right to appeal to the Director of the Family Health Services Appeal Unit. However, in the event such an appeal is unsuccessful the amount to be withheld from the doctor, determined by the Professional Committee, must be recovered by the FHSA.

Sanctions such as these are however, seen as a process of last resort and are not expected to be commonplace. In fact, those FHSAs participating in the study said they were very unlikely to impose sanctions. They further argued that in any case it was unlikely such a situation could arise because they conduct regular and thorough monitoring of practices' prescribing patterns. Any 'corrective' action to prevent excessive prescribing would have been taken at an early stage.

In addition to FHSA monitoring of practice expenditure, practices are also expected to conduct their own in-house monitoring throughout the year. To this end, they are provided with monthly statements of expenditure and quarterly PACT data. The format is similar to FHSA data. PACT data presents GPs with information at three levels, depending upon the needs of the practice, and is designed to enable GPs to review their prescribing habits and costs, develop and monitor prescribing policies within the practice, compare themselves with colleagues in the same FHSA and nationally and, to improve cost effectiveness of practice prescribing.

## **Containment by financial incentive**

In an attempt to encourage GPs to adopt effective and economic prescribing mechanisms the reform package includes certain incentives. As previously noted, GP fundholders are allowed to keep whatever savings they make to re-invest in other areas of the practice. However, under the IPA scheme the incentives are not quite so straightforward nor are they designed for individual practice benefit. The emphasis of the IPA incentive scheme is for the development of primary health care projects in the FHSA area rather than those relating to individual practices. The scheme provides for certain incentives where GPs manage to achieve a specific target saving in prescribing costs throughout the FHSA area. This assumes an element of altruism amongst non-fundholding practices.

Any Local Medical Committee may approach its FHSA with a specific target saving in prescribing costs throughout its area. It must first however be satisfied that such a saving is achievable without detriment to patient care. In April of each financial year a specific target saving is agreed with the FHSA. If, and only if that target is achieved half that sum will be made available to the FHSA in the following year to be used on primary health care projects. The payment, for a period of one year only, is spent on projects which have locally been agreed upon. There is however no link between savings which a particular practice may make nor, any benefits its patients and doctors could gain from such schemes. The FHSA is responsible for notifying RHAs, who in turn notify the DoH by the beginning of May each year, of the proposed targets that have been agreed. This allows a decision to be taken nationally on which FHSAs will participate in the scheme.

Though local authorities have in the first instance been encouraged to participate, subsequent feedback suggests

practices have been hesitant to join the scheme. Some have suggested they feel an overall lack of support from the General Medical Subcommittee prescribing subcommittees. In addition, the DoH's intransigence on the rules as illustrated by the following comment have contributed to the scheme's current lack of success :

'You get no accrued savings until you reach your target and if you exceed the amount you don't get any extra. The only modification the DoH has made for next year is that only 60 per cent of practices in the area have to opt into the scheme - this year it was all of them' (Medeconomics 1992).

It must be noted however, incentives are not always financial. FHSA H's medical adviser for example, said that the incentive for many GPs was simply a desire not be different from the others and show up as an 'over' prescribing practice.

### Summary

Previous attempts to contain GP prescribing costs have so far achieved only moderate success. Consequently, there was a clear need for government to reassess the mechanisms it employed to monitor GP prescribing and to influence their choice of drug therapy based on cost-effectiveness. In the NHS Review of the late 1980s two new models were proposed to achieve these aims. The first proposed making District Health Authorities responsible for purchasing all the health care services on behalf of GPs and making hospitals compete internally for contracts. The second model wanted to make GPs sovereign purchasers of its services. In the end both models were implemented in conjunction with one another and only after some modifications.

Under the new system the principle is, that if GPs are offered more freedom in the use of a larger budget they may be more willing to accept a cash limit on the whole allocation of funds, including prescribing costs. The

ability to use this combined practice budget will act as an incentive for the practice to make savings in one element for re-investment in other areas. The extra 'incentive' is the threat of immediate 'pay-back' (sanction) for failing to spend within a cash limited budget. For those GPs who do not 'hold' their own funds, little will change. They will remain uncash limited although they will be notified of a desired target amount for spending within. Nonetheless, they will still not have to bear the ultimate responsibility of their actions in terms of referring to hospital or for that matter, of continuing to prescribe as they have in the past.

Any overspend will be met not by them but their FHSA who will bear the cost of their actions out of the FHSA's firm budget. A practice overspend under this system triggers a contact visit from the FHSA medical adviser who discusses the situation. Although practices/GPs are threatened with referral to the Professional Committee, this appears to be something of a hollow threat. Most FHSAs only consider this as a last resort. The incentive scheme for non-fundholding practices is based on the assumption that GPs will want to make savings for the greater good of the community. This assumption of altruism however appears wide of the mark.

In essence, the redistribution of funds away from central provision to grassroots level has led to a restructuring of the main element of NHS primary health care services. It has, through the use of incentives and cash limited budgets, provided a greater onus on some GPs to think more about their prescribing choices and to examine alternatives in order to prescribe more cost-effectively. In an effort to determine whether the 1991 NHS reforms have achieved their aims this study will examine the prescribing trends of eight firstwave GP fundholding practices. These practices are compared with non-fundholders, as measured by FHSA averages, for at least one year prior to the implementation of the reforms and two years post. In addition, interviews with both general practices and FHSAs are intended to reveal what policies, if

any, have been drawn up and implemented with regards to the management of the drugs budget.

## CHAPTER 5

Adapting to a cash limit for drugs

## **Introduction**

The previous chapter described the latest in a series of methods employed by the government in its attempt to contain expenditure on GP generated prescriptions drugs. The current reforms endeavour to demonstrate that, faced with a cash limit for drugs GPs are having to make choices and agree priorities about the use of financial resources they have at their disposal. The aim of this chapter is to describe the approaches taken by eight GP fundholding practices to adapt to these latest reforms and meet the expectations of government. The chapter begins by outlining some of the factors which practices consider directly affect their prescribing costs. This summary is proceeded by a series of descriptions of the individual practices, the problems they face in containing drug expenditure and, the policies they have employed to counteract these problems.

### **Prescribing problems and policies**

Table 5.1 outlines the factors eight GP fundholding practices believed were responsible for influencing their prescribing trends and sometimes their behaviour in the surgery. The reasons most frequently given for certain prescribing behaviours were : an increase in the elderly population, a high patient turnover and a shift in hospital prescribing to general practice. Other factors relate primarily to the social and economic deprivation of a population and the new contractual requirements of the reforms. The presence of expensive patients, partnership changes and 'underfunding' by the FHSA have also been identified as contributing factors to a practice's ultimate drug expenditure.

In an ideal world a practice's patient population, based on age/sex and demand dictates that it is within the GP's power to affect his/her prescribing. Any suggestion to the contrary is considered a reflection of a GP's lack of responsibility. However, in reality populations are not

'ideal' nor standard but exhibit many idiosyncrasies. It is these idiosyncratic factors which influence doctors' prescribing. There is no 'law of averages' in prescribing, GPs are constantly facing numerous intractable problems which dictate their prescribing. Some practices are faced with problems of a more overlapping nature and complexity than others (Table 5.1). Consequently, it is more difficult for GPs to easily and readily control their prescribing.

### Factors affecting prescribing choices

#### Fundholding Practices

Factors	1	2	3	4	5	6	7	8
Rise in elderly pop		x		x	x	x	x	x
Shift in hospital prescribing	x	x	x	x	x		x	x
High patient turn-over	x				x		x	
Inner city status				x			x	
Greater health demands				x			x	
Unemployment/redundancy				x				x
Influx refugees				x			x	
Cultural expectations				x			x	
Expensive patients		x			x			x
Health promotion		x						
Contractual requirements		x			x			
Partnership changes				x				
FHSA 'underfunding'			x					

**Table 5.1**

Source : study data

#### **Practice 1**

This is the only practice in the study located in and thus defined as an inner city practice. It does not however exhibit the typical problems associated with inner cities. It is located in an affluent part of central southwest London and has a very cosmopolitan population who are predominantly



British social classes I & II. Its population is different in other aspects to other practices in the study; the majority of these patients are aged 18-30 years and many live in flats or hostels. Subsequently, this is a very transient population and this is reflected in practice statistics which display a high annual patient turnover. Indeed, practice and FHSA records demonstrate this practice has the highest patient annual turnover rate within the FHSA and, the FHSA has the highest value for registration transactions of any other FHSA in the country for both internal and external transfers. Moreover, it displays the highest list inflation in the country.

Historically, the practice perceives itself as relatively low spending compared with its FHSA and the national average. This is despite its policy to prescribe newer, more expensive drugs. Since fundholding the practice has expressed a growing awareness that it is being asked to prescribe treatments which have traditionally been the responsibility of hospital consultants such as those illustrated in Table 5.2.

**Expensive patients : Practice 1 (1991/2)**

Drug therapy treatments	N=	Approx average cost/ patient per month £
Cyclosporin A	1	750.00 +
Growth hormone injections	1	875.00
Zoladex	3	125.40 +
Losec	10	36.36 +
Acyclovir tablets	6	28.89
Fertility treatments	N/A	N/A

**Table 5.2**

Sources : Practice 2 & British National Formulary

## **Practice policies :**

The practice explained that its awareness of potentially spiralling drug costs had led it to institute a policy encouraging greater use of generic preparations. In addition it had introduced a set of diagnostic protocols for certain illnesses such as asthma, diabetes and hypertension. Its discussions with hospital consultants about outpatient prescribing had so far not been successful in modifying their attitudes. In any case, the practice suggested that at this stage this was not a priority. However, it envisaged this is something which will become more important in the future.

By the end of the first year of fundholding the practice claimed it had successfully managed to stay within its drugs budget (Chapter 8). However, the partnership agreed this outcome should be looked at in the context of a budget calculated on 'inflated pre-fundholding expenditure'. In an attempt to ensure they received 'a decent budget' and not be penalised for their already good prescribing record, the practice admitted that in the year prior to fundholding they had undertaken to 'push up' their prescribing costs by 'not stinting themselves' when it came to prescribing. This decision was taken in the light of their participation, a few years previously, in an pilot experiment for the Family Practitioner Committee (FPC) to review prescribing practice.

As a result of the experiment the practice explained that it successfully reduced its prescribing costs and had continued to remain a low spending practice since. When fundholding was proposed however, the practice admitted to embarking on a course of action to 'artificially inflate' its prescribing costs. Once the practice's needs had been assessed pre-fundholding and budgets set, the practice said it reverted back to its 'old' prescribing habits.

The response to the second year's fundholding was swifter as expenditure in the first three months was greater compared

with other years. The partnership was unable to offer any reasons for this. Since then, the practice has been keen to keep a check on the progress of spending and welcomes regular visits from the FHSA pharmaceutical adviser who identifies areas of high spend and advises them on alternatives.

Two other practices in the study (practices 4&7 see below) share many characteristics associated with a typical inner city practice. Both however, are situated on the outskirts of Greater London. These two practices, similar in many respects to each other, are located in areas populated by a predominantly working and lower middle class transient population (practice 7 average 20% per) of mixed ethnicity. Both are also currently witnessing a rapid increase in the numbers of political and economic refugees from countries such as Turkey, Zaire and Kurdistan and many of whom have greater health needs than the existing resident population.

## **Practice 2**

This small town/semi-rural practice in West Hertfordshire felt that since fundholding it had not witnessed any changes in prescribing practices. This was despite its awareness of a shift in hospital consultant prescribing (eg. Zoladex at a cost of £125.40 per month) and, underfunding as a result of the FHSA's incorrect assessment of their drug expenditure (Chapter 4). Although the practice has a sizeable elderly population (ie. 12% out of a list size of 12,239) it does not feel they contribute unusually to their prescribing costs (Chapter 8). In the first year of fundholding the practice estimated that it overspent on drugs by £34,453 (ie. 7%, Chapter 8) whilst making savings in other areas to the sum of £2,100. There was little change in terms of prescribing practices in the second year and the practice anticipated another end of year overspend (Chapter 8).

## **Practice policies :**

The practice's perceptions of the continuous underfunding by the FHSA led it to look at ways to keep within, as near as possible, the boundaries of their allocated drugs' budget. One method for containing drug spend was the use of a hospital formulary although, they expressed a keenness to compile their own. Time constraints however proved the largest hurdle to compiling their own formulary. The FHSA had offered the services of its medical/pharmaceutical adviser to help with the task but, the practice declined expressing concerns about loss of clinical freedom to choose a formulary based on their own expertise and choices. Efforts have however, been made to restrict the range of drugs prescribed by the practice by introducing a limited list for antibiotics. This list drawn up using PACT level 3 data to identify the number of brand named drugs in use versus generic equivalents is regularly updated.

To counteract what the practice sees as a move by hospitals to shift their prescribing costs over to general practice and, other problems associated with contracts the practice joined forces with other fundholders in their area. They perceived the benefits of the scheme were that, by pooling together their clinical experience and expertise they would avail themselves with greater negotiating powers. This philosophy has so far achieved some degree of success. The 'firm' managed to negotiate contracts for fertility treatments with the local hospital whereby, practices pay for treatments inclusive of four cycles. This works out cheaper for the practice because it also includes any other treatments necessary within (unexpectedly perhaps) these four cycles.

Not all problems related to a shift in hospital prescribing can however be solved by the 'firm'. The practice found that it is having to seek advice from the FHSA medical adviser about hospital practice to prescribe expensive treatments

such as Zoladex. Other problems encountered by the practice are however discussed only by the doctors at their regular monthly practice meetings or quarterly fundholding meetings.

### **Practice 3**

Practice 3 has a list size of just over 9,100 of which 40% are dispensing patients and the remaining 60% are prescribing only patients <sup>(1)</sup>. The practice is a little unusual compared with the other practices in that, its catchment area spans two counties resulting in 60% of its patients living in Bedfordshire and the remainder inhabiting parts of Buckinghamshire. It has a higher than average number of elderly within its practice population (65-74 years 8%; 75+ 9%) but this is balanced out against the lower than average numbers of children under 5 year (0-5 years 6%).

The practice is about five miles from a new town and growing industrial area. Within its immediate area there are a variety of light industrial companies but on the whole, local employment is fairly low with most people working out of town. There is however, one very unusual aspect to the practice's responsibility. Within the catchment area there is an English stately home which is home to a number of unusual animals and, whose employees fall under the care of these GPs. This has in the past given rise to rather strange complaints such as bits from exotic animals !

---

<sup>1</sup> Prescribing only patients : patients who receive a prescription from the doctor and may only cash this at the pharmacy.

Dispensing only patients : patients who live more than one mile away from the nearest pharmacy and can therefore get their prescriptions cashed by the GP/practice pharmacy.

### Expensive Patients - Practice 3 (1991/92)

Patient type	N=	Approx average cost/ patient per month (£)
Renal transplant	2	750.00 +
Cancer (unspecified)	7	1 on Estrocyte 8 daily £136.00 6 on Zoladex £125.40
Hypertensives	N/A	N/A

**Table 5.3**

Sources : Practice 3 & British National Formulary

Like one or two other practices this practice has an active disease management policy. This has inevitably identified patients who require expensive and long-term drug therapy (Table 5.3). In addition, the practice has noted a shift in hospital prescribing over the last year which they believe has increased their drug spend. Historically, practice prescribing costs have been higher than the FHSA average. This, the practice believes results from their disease management policy of the last ten years which screens patients particularly for hypertension.

#### **Practice policies :**

In line with the partnership's policy for overall good disease management it has investigated ways to regulate drug expenditure. Part of these investigations led to the introduction, six years ago, of its practice formulary with the intention of reducing the range of drugs used. During the last two years, the practice has sought to tighten it up through a process of partnership 'away days' from the surgery. Each partner in rotation, was asked to present his/her findings on a drug audit, using PACT data, for a given diagnostic category. After a short presentation a joint agreement was reached about the drug's inclusion into the formulary based on its cost, efficiency, patient

acceptability and so on. The formulary is now on the computer system and avails each GP quick and easy access to it. It is regularly updated at approximately six monthly intervals.

Despite the practice's strenuous efforts to control its drug expenditure it still encounters problems beyond its control, these include hospital consultant prescribing. Although the practice accepts that little can be done about its problem of expensive patients, it was trying to draw up contracts with hospital consultants. During the terms of this study this approach however met with little success. The practice holds regular weekly meetings to discuss future projects and any problems which have arisen during the week. At one such meeting the issue of moving over to more generic prescribing was discussed. However, this option was rejected because they did not want the safety or legal responsibility as a dispensing clinic for generic drugs which currently have no British generic standard.

#### **Practice 4**

Practice 4 is situated in an essentially very deprived area in north London where the population is predominantly Orthodox Jewish. Its list size of approximately 13,000 revealed a higher than average elderly population (11.4% are 65+ years) which is on the increase. The practice is responsible for providing a service for an increasing number of homeless and those from refuge houses within its catchment area. In addition, it has seen an increase in the number of mental handicap patients it is now being asked to care for under the 'Care in the Community' scheme. The practice also anticipated an increase in future drug spend as a result of its agreement to pilot two schemes.

The first scheme offers early morning surgeries to patients and the second offers Sunday morning surgeries in place of the current Saturday morning surgery. Its decision to

participate in both schemes is a response to the needs of the Orthodox Jewish community whose demands are very high at weekends apart from hours of the Sabbath on a Saturday. In addition, the practice anticipated it would have to treat (1992/93) approximately one-quarter of its practice list size for Hepatitis A, a disease prevalent amongst the population in the area. Traditionally, the practice felt it had been 'conservative' in its drug expenditure despite the recent increase. After reviewing its drug spend information it had identified hospital generated prescribing as the culprit and cited the case of Evening Primrose Oil for mastalgia.

#### **Practice policies :**

This practice felt its traditional 'conservative approach' to prescribing had so far proved adequate. It could therefore see no need to introduce policies to change their prescribing practices. There was however, a general understanding that the partners would follow a procedure for generic prescribing where possible. As a means of ensuring economical prescribing GPs were assisted by a computerised list of the most commonly prescribed drugs used in the practice by diagnostic category. This system GPs with a list of the commonest and cheapest drugs prescribed by the practice.

However, it was suggest the system had a hidden agenda and that was, GPs would not want to differ from their colleagues in terms of prescribing. They would therefore refer to the computer before making a choice of drug therapy. For reasons of cost and effectiveness (?), the practice had agreed not to prescribe certain hospital generated prescriptions which can in some instances, be bought over the counter Evening Primrose Oil was a prime example.

#### **Practice 5**

This is a small town/semi rural practice in South East Hertfordshire. It runs its own preventive care unit,



pharmacy, dental surgery and conducts its own minor surgery and day case operations on site. In addition it has an agreed and established disease management policy. Subsequently, it expected its prescribing costs to reflect this by suggesting that it was becoming less efficient and less well managed when in fact, the opposite was true. The practice also expressed concerns that because of a shift in hospital prescribing, an increase in the numbers of elderly, a high patient turnover, the existence of expensive patients and increased identification of potentially expensive patients as a consequence of the new contractual screening requirements it was difficult to contain growth in drug spend.

The sudden influx of young married couples with small children and a sharp rise in the numbers of elderly resident had resulted from a considerable amount of new housing being built in the area together with an increase in the stock of sheltered accommodation. Cheaper 'starter homes' are plentiful but housing density is quite high. Subsequently, any requirement for increased accommodation by virtue of an increase in family size or improvement prosperity necessitates a move. Consequently, there is a high patient turnover but also an upward trend in population growth and of those registering with the practice. The number of new patients registering each quarter is around the 250 mark with no sign of an apparent slow down in this trend.

In line with its of active disease management policy the practice offers a wide range of clinics and screening programmes (Appendix A). The aim is to identify and detect early on patients requiring potentially long-term and expensive treatments. Screening of the elderly takes place every Tuesday morning in an informal atmosphere lasting about three hours. The practice arranges for patients, and in some instances pet dogs (!), to be collected by minibus and brought to the surgery for the Elderly Circle where tea and coffee is laid on. This provides an ideal opportunity for

regular contact with friends and with doctors and makes it easier for the clinical staff to detect any changes in patient health and welfare. Non-attendance at the Circle is quickly followed up to check the patient is alright.

As well as screening existing patients the practice has a policy to screen all new patients registering so their medical requirements can be identified sooner rather than later. When asked whether this procedure was a way of excluding potentially expensive patients the practice strongly denied this (ie. adverse selection (Scheffler 1989); cream skimming (Glennerster, Matsaganis & Owen 1992)), though they are 'naturally concerned' about future high cost patients. In 1991/92 the practice registered that it had at least six expensive patients (Table 5.4).

A breakdown of these costs reveals, the average monthly costs for each transplant patient is £750 thus, aggregated monthly costs for all transplant patients is £3,750. The average monthly cost for growth hormone injections is £875 bringing the total monthly expenditure for these six patients to £4,625 and the total quarter to £13,875. Though these six patients constitute only 0.0034% of the total patient population of 18,000 they account for 1.93% of the total annual drug spend. Furthermore, in the case of the transplant patients the figures quoted refer only to those drugs associated with the prevention of rejection (ie. cyclosporin and azothiaprime). These calculations make no allowances for the wide range of other drugs taken by three of the patients to combat a range of disorders associated with primary cardiac pathology. The addition of all these drugs would completely cancel any practice overspend.

### Expensive Patients - Practice 5 (1991/2)

Patient type	N=	Approx average cost/ patient per month £
Cardiac transplant patient	3	750.00 +
Liver transplant patient	1	750.00 +
Renal transplant patient	1	750.00 +
Growth hormone replacement therapy	1	875.00

**Table 5.4**

Sources : Practice 5 & British National Formulary

In addition to concerns about the above patient costs, the practice has also expressed concerns about the costs incurred as a result of hospital consultant prescribing. They cite a number of examples within their locality of situations where consultant expenditure is high (<sup>2</sup>). Three typical examples are :

- a a local gastroenterologist who chooses Zantac (ranitidine) for all his patients with dyspeptic symptoms rather than the 40% cheaper Tagamet (cimetidine);
- b a local physician who uses Zestril (lisinpril) for hypertension rather than the cheaper available ACE inhibitors;
- c a local physician who uses Volmax (a slow release formulation for Salbutamol) rather than Salbutamol itself which is a fraction of the cost.

---

<sup>2</sup> This may in some cases, be the result of special arrangements with pharmaceutical companies resulting in cheap contract agreements for a particular drug which, though cheaper for the hospital may be considerably more expensive when prescribed on an FP10 by the GP.

The practice explained that when a patient has either been referred to a consultant or is an emergency hospital admission it is very difficult for GPs to modify or change the medication on which the patient is discharged.

#### **Practice policies :**

The practice's heightened awareness of the mounting costs of its prescribing led it to and scrutinize its own drug expenditure between 1988 to 1991. This exercise revealed, their strenuous efforts to reduce expenditure on pharmaceuticals was moderately successful. This had been achieved through, their use of a formulary to reduce the range of drugs used within the practice, an increase in the use of generic preparations, a reduction in the quantities per prescription to no more than 28 days unless in exceptional circumstances and, the use of drug regimes for commonly occurring conditions. Regular monitoring of expenditure through PACT data helped the practice to identify any areas of unnecessarily high prescribing (Table 5.1).

Nevertheless, even though the practice has made every effort to prescribe conservatively it estimated that by January 1993 their overspend was in the region of 20% (Chapter 8). Regular weekly practice meetings are held to discuss matters arising from the week and future projects. All meetings are minuted so that all GPs are kept up-to-date on progress. Drug representatives are allowed in at the end of these meetings for only 15 minutes, after which short discussions follow between the partners and a practice decision is taken about trials of the product.

#### **Practice 6**

This is a small thriving market town in rural East Anglia not far from the coastline. It has a higher than average elderly population (20%) but this is balanced out somewhat by the lower than average numbers of children below the age of 5

years (5%). The practice population displayed no other features of note.

#### **Practice policies :**

The practice expected its data to show that traditionally it had prescribed more, though generally less expensive items than its FHSA average. It explained that as a dispensing practice it was acutely aware of the costs of drugs and so tended to prescribe conservatively. In an effort maintain its low drug spend the practice introduced its own practice formulary (1990) with the intention of reducing the range of drugs used and to make those on the list the most efficient.

The formulary was compiled over a period of a year during regular partnership meetings. During these meetings each GP, in rotation, was asked to present an audit of commonly occurring illnesses and drug regimes implemented to treat them. A short period of discussion followed before a joint decision was taken about which drugs based on cost, effectiveness, patient acceptability, GP preference etc. were to be included in the formulary. The formulary is updated six monthly. Any minor changes during the intervening period tend to be made by the dispensing manager and the partner responsible for managing the drugs budget.

As well as the institution of the formulary, the practice also agreed on a move towards more generic prescribing where possible. It soon become apparent however, that a number of problems existed in the implementation of the policy. Firstly, patients are divided in two categories, prescribing only patients who receive generic products and, dispensing patients who are prescribed proprietary drugs. When a prescribing only patient is discharged from hospital in most cases they are given a prescription for a proprietary product. GPs thus find it difficult to modify hospital consultant discharge prescriptions and are left with the

cost, not only for the immediate prescription but also for the long-term costs (?) of moving this patient over to the dispensing list. Despite this problem, during the study period the practice had not approached their local hospitals to discuss the problem.

Elderly patients as well as dispensing patients are also exceptions to the generic 'rule'. In the majority of cases prescriptions for the elderly are for proprietary products. This stems from the practice's discovery that there is less patient acceptability of generic drugs by elderly patients. The consequence of this is, extra cost for the practice for wasted untried drugs and new prescriptions for traditional drugs. The dispensing manager oversees all drugs dispensed by the practice and is therefore able to monitor practice behaviour. Through close liaison with the partners she is able to keep them informed about trends and suggest cheaper alternatives where she feels it may be appropriate.

## **Practice 7**

Practice 7 is a large training partnership with a current population list size of approximately 14,823, 25% of whom are aged under five years (<sup>3</sup>). It is situated in an area which has, in the last ten years, seen a rapid decline in local industry and a dramatic increase in redundancy and unemployment. As a consequence, the practice has noticed a steady but rapid increase in the numbers of patients presenting with depression. The practice has described its population as : 'one of being very demanding, tending only to register with the practice when there is a problem then demanding more than the average number of out of hours and home visits, presenting as emergency cases, unwilling to follow the appointment system and so on'. One partner explained that this 'demanding nature' placed enormous time constraints on the doctors and as a result, it was 'easier to

---

<sup>3</sup> This was noted in a study conducted by the practice (about two years ago) of registered patients.

prescribe just to get the patients out of the door'. This perceived high rate of prescribing heightened the partners' awareness of the potential costs of their actions and the need to keep costs down. This had led therefore to a tendency amongst the doctors to prescribe cheaper items (Chapter 8).

The practice described its historical prescribing as higher than FHSA average in terms of number of items prescribed although, these tended to be cheaper. The practice explained that a visit of the Regional Medical Officer about ten years ago revealed, there was a line of practices along the Old Cambridge Road, of which this practice belonged, which all had higher than average prescribing. Thus the practice appeared to be fairly typical of the area. By way of explanation, the practice felt its prescribing was reflective of the deprivation in the area and, the cultural expectations expressed by the increasing ethnically mixed population.

It was anticipated that the end of year prescribing figures in the first year of fundholding might highlight some minor differences in comparison to previous years. This was likely to result from a recent partnership change. The senior partner explained that in October 1991 one of the partners left the practice and took with him his list size of just over 2,000 patients. However, expenditure was not expected to be very different because those doctor's patients had only been with the practice for 3-4 years and were mainly relative newcomers. Thus, when he left he took with him these patients leaving behind the existing expensive patients.

#### **Practice policies :**

The practice's awareness of the potential for drug costs to spiral led it to agree a policy of prescribing more generic products where possible. In addition, it was in the process putting together its own practice formulary and, was investigating ways to compile drug regimes for specific

diseases such as hypertension and asthma. Controls on repeat prescribing were tightened up as the partnership became even keener to ensure patients receive only what they really need. They were also assessing the feasibility of pre-dating repeat prescriptions, for example six months, so that GPs could monitor the number of repeats more reliably and review patients regularly.

## **Practice 8**

Practice 8 is a small town partnership in the South East commuter belt with a list size of approximately 13,000 which, the practice describes as not 'dissimilar to the national picture'. Within its population however, it has detected the existence of an exceptional multiple pathology, especially amongst the elderly who make up 15.4% of the list size. It relates this to the area's 'geographical quirk' which demonstrates an uncharacteristically cold and damp climate. Perhaps as a consequence of this it has witnessed an increase in prescriptions for anti-inflammatories. During the last 2-3 years the practice noticed an increase in redundancy and unemployment within the area. As a result of this it witnessed an increase in prescriptions for anti-depressants. The practice also prescribes for at least six expensive and long-term patients (Table 5.5).

The practice reported that in its first year of fundholding it overspent on its drugs budget by only 7% (Chapter 8). As a result of this and previous years' drug spending the practice felt it managed its prescribing conservatively and consequently its expenditure was realistic.



### Expensive patients - Practice 8 (1991/92)

Patient type	N=	Approx average cost/ patient per month £
Kidney transplant	3	750.00 +
Heart transplant	1	750.00 +
Liver transplant	1	750.00 +
Growth hormone replacement therapy	1	875.00

**Table 5.5**

Sources : Practice 5 & British National Formulary

#### **Practice policies :**

This 'conservatism' derived from the practice's awareness of drug costs arising from its role as a dispensing practice. Subsequently the practice had, for a long time, been conscious of the need to contain expenditure realistically and had sought to rationalize this by targeting certain areas of drug therapy. Firstly, the practice had looked at ways to reduce the range of drugs used by the practice secondly, they had promoted greater use of generic preparations. In the first instance, by using a process of audit to look at their use of antidepressants, the practice successfully reduced the number used from more than three types of 5HT expensive antidepressants to one (Prozac). Audit procedures have also been used to look at the practice's use of generic equivalents. A quarterly audit of 4-6 generic drugs is conducted and this is followed by a discussion about the costs, effectiveness, patient acceptability and so on of the drugs compared. A decision is then taken about the drug's inclusion/rejection into the dispensary. Despite partnership concerns about quality of generic drugs (does the coating keep the drug bound together ?) there has been a gradual but determined effort to switch over more and more to generic prescribing.

In addition, the practice had already introduced a number of generic drugs to the practice dispensary for example : Zyloric in place of Analaprinol, Lasex for Frusimide.

Prescribing only patients registered with the practice now receive generic preparations but dispensing patients still receive proprietary products. However, the shift in hospital prescribing to general practice has brought its own problems for the practice. Besides the obvious additional costs, the practice is also facing an increase in drug expenditure as a result of having to prescribe non-generic drugs for prescribing only patients discharged from hospital with a prescription for a non-generic drug. The patient has also to be moved onto the more expensive dispensing list. Though the practice has expressed grave concern over this problem they had not, during the term of the study, discussed their preferred prescribing regimes for its patients with the hospital consultants.

### Summary

This chapter outlined the types of problems GPs face in containing prescribing costs. If each problem occurred separately and was tackled individually, GPs would probably be able to find a solution and contain drug spend more easily. However, these problems compound one another and make the task of developing and implementing a strategy to counteract their effects very difficult. Some of these problems have existed for at least a number of years and relate to social and demographic factors, factors which the practice can do very little about. However, other problems are of a more recent making and appear to relate directly to the NHS reforms.

One of the commonest problems cited has been the shift in hospital prescribing costs onto practices and, although this is a very small sample it nonetheless gives an indication that this may be a universal problem. The evidence presented

by these practices certainly provides evidence to support claims that hospitals, who are themselves facing tighter budgetary constraints, are looking to solve some of their financial problems by shifting some of their costs to primary health care. Nearly all of the practices were able to cite examples of treatments they were now being asked to prescribe which had previously been prescribed by their local hospitals. In addition, there was evidence to support the argument that the new screening contracts were responsible for an increase in drug spend. GPs were carrying out these new requirements and were subsequently identifying patients in need of expensive and long term drug therapy.

Despite these problems, GPs appeared keen to 'take the bull by the horns' and seek ways to address these issues. The majority of practices opted to encourage greater use of generic prescribing (Chapter 8) in conjunction with a number of other strategies. Practices regularly reviewed their progress in terms of spend and also their cost-containment strategies. These reviews were conducted during practice meetings with the aid of the PACT information data and in some instances, input from the FHSA medical/pharmaceutical adviser. It was difficult to determine, because of the small sample size and absence of matched control group, whether these practices were representative of all fundholding practices and indeed, non-fundholding practices. However, the evidence suggests this sample is indicative of other fundholding practices and, that this intensity of action is not being matched by non-fundholding practices (Glennerster 1994).

These eight practices have put forward descriptions of themselves and their prescribing practices. Chapter 8 examines their prescribing data to see whether these descriptions and perceptions of what they do and how well they do it are realistic. First however, the investigation compares national prescribing trends in view of cost-containment mechanisms instituted between 1975 and 1992.

Chapter 7 is proceeded by a chapter describing the prescribing trends of the three FHSAs who participated in the study.

## Chapter 6

**Results Part I**  
**The National Picture**

## Introduction

Despite government policies introduced during the 1980s and early 1990s (Chapters 2 & 4) GP generated prescription drugs remain one of the fastest growing elements of expenditure in the NHS (Health and Personal Social Service Statistics, DoH 1993). In 1992 drug expenditure in England amounted to £2,858 million, 9% of the total NHS budget for the year and has increased by 978% since 1975. The aim of this chapter therefore is to examine in turn:

- (a) what changes have occurred between 1975 and 1992 in terms of the share of total NHS budget devoted to prescription drugs;
- (b) whether growth in drugs expenditure is the result of increases in the relative price of drugs over and above the rate of inflation or;
- (c) whether it is in response to increases in the volume of drugs prescribed.

In addition, the chapter will examine changes in the overall prescribing trends in relation to specific government initiatives and policies introduced during this period. It is however noted that, the latest reforms may not yet be showing any real impact because of the newness and subsequent limited study follow-up period. Nevertheless, this discussion will attempt to determine whether these policies have had any effect on influencing GPs' prescribing practices as measured by changes in prescribing expenditure and patterns.

### **Industry regulation and its effect on drug expenditure**

By 1992 drug expenditure had risen 978% from £265 million in 1975 to £2,858 million (1992). Real term growth however was

150% (<sup>1</sup>) in comparison. At the same time the number of items dispensed rose by just 40% from 282 million to 394 million. This was also at a time when the registered patient population remained fairly static increasing by only 4% overall (<sup>2</sup>) (Table 6.1). 1983 marked the turning point in patterns of prescribing. Prior to 1983 expenditure growth had grown at an average annual rate of 19%, volume growth was 1% annually and the rate of generic prescribing only increased by one percentage point overall (Table 6.1). However, post 1983 the annual rate of expenditure growth dropped to 11%. In contrast, there was an increase in the annual rate of volume growth to 3% and a sharp rise in the annual rate of generic prescribing.

Between 1975 and 1992 NHS spending as a whole increased by 580% and drug expenditure as a share of total NHS spend increased from 6% to 9%. This rise in drug spend has however, not been at a constant rate. Between 1975 and 1983 drug expenditure, as a proportion of total NHS spend demonstrated a large overall increase compared with the period 1984-92. This is not surprising given that very few measures aimed at curbing prescribing were introduced during the former period (Table 6.1). What measures that were introduced were directed mainly at controlling industry prices (profits) through the Voluntary Price Regulation Scheme (VPRS) and curbing patient demand (Chapter 2). The VPRS was revised several times during this period (ie. 1975-92).

The 1972 revision of the VPRS changed little from the 1969 version giving government greater powers to influence product prices and company profits from sales to the NHS. Subsequently, the growth rate in NHS pharmaceutical spending and the proportion of health service money spent on pharmaceuticals appeared to fall such that, by 1976 it

---

<sup>1</sup> Calculated using the Retail Price Index 1987 = 100

<sup>2</sup> Based on figures for registered patient populations obtained from Prescription Pricing Authority PD2 forms.

accounted for only 5% of the total NHS spend. In 1977 there was an increase in the proportion of NHS money devoted to prescription drugs (Table 6.1). This increase was something of a surprise given that, the government had re-established its statutory powers to fix product prices, which included medicines supplied to the NHS if necessary. In addition, companies were required to provide forecasts of sales for the year ahead as well as returns for the last accounting period.

Prices could therefore be set according to historic patterns of profitability. The effects of these new measures appeared only temporary and in any case, appeared to have little effect on reducing expenditure growth.

The VPRS was twice revised in the 1980s and produced some of the strictest controls to date. In 1983 the government introduced a price freeze on medicines sold to the NHS. Two years later it introduced selected price cuts on prices it was prepared to pay for drugs. These industry controls coincided with some of the most rigid recommendations and stricter controls on the profession (Chapter 2; Table 6.1). As a consequence of these strategies compounding one another it is difficult to disentangle their individual effects but, in combination they managed to stabilize the share of expenditure taken by drugs.

#### **The effects of patient cost-sharing policies on demand**

Prescription charges to patients had first been introduced in 1952 (Chapter 2) however, between 1971 and 1978 the cost to patients of a prescription item remained unchanged at 20 pence. In 1978 the government increased charges to 45 pence per item but at the same time extended the criteria for exemption categories. There was nonetheless, a drop in demand which was sustained until 1982 despite only one further increase in prescription charges in 1979 (Table 6.1).

Since 1982 the government has instituted a policy of regular increases in prescription charges to consumers. Despite this there was a faster increase in the volume of drugs prescribed



in the period 1984-92 compared with the earlier period 1975-83.

Thus, during this seventeen year period it is possible to see that a succession of government measures aimed at controlling producer prices and consumer demand had achieved only a moderate degree of success. On the one hand, there had been a reduction in the annual rate of increase in pharmaceutical spending together with a stabilizing of the proportion of NHS money devoted to pharmaceuticals. However, the volume of drugs prescribed had again begun to increase. During the most part of this period government attention was focused primarily on the industry and the patient consumer not the profession. It was only from the mid 1980s that the government began to redress this balance. The next part of the chapter will therefore examine the effects of government controls of the profession.

#### **The effects of government regulation on professional practices**

After a long period of apparent inactivity in terms of regulation of the profession the government commissioned in the early 1980s, an investigation into GPs' prescribing practices. The subsequent report (Greenfield 1984, Chapter 2) was published about the time when there was a turning point in both prescribing trends and growth rates. The Greenfield Report recommended greater use of generic preparations, generic substitution, local formularies and a restricted list of prescribable items. In the year of the Report's publication expenditure on prescription drugs rose by only 8%, one of the smallest annual percentage increases in the seventeen year period. At the same time, the rate of generic prescribing rose for the first time in six years by one percentage point to 16%. However, it must be remembered this was also the year immediately after the government instituted a price freeze on medicines sold the NHS. It is therefore difficult to determine whether this price freeze

or, the Report was responsible for this reduction in expenditure growth. In all probability it was both but, the Report had more of an impact in terms of generic prescribing.

The introduction of the limited list in 1985 helped to further reduce expenditure growth to 6%, this was the lowest annual percentage increase recorded during the seventeen years. Moreover, there was a 1% fall in the number of items prescribe by GPs in that year. One of the most striking effects of the limited list has been the rapid increase in the rate of generic prescribing since that year. More dramatic has been the increase in the share of associated net ingredient costs (Table 6.1). In the late 1980s the government brought on line its latest prescribing information system in an attempt to persuade GPs to modify their prescribing behaviour (Chapter 2). This system (Prescribing, Analysis, Cost (PACT)) provided GPs with regular and reliable information and feedback about the prescribing activities. In 1988 GPs received their first PACT data and for the next few years at least, GPs expenditure growth responded more closely to increases in volume.

### **The Reforms**

In the year immediately prior to the introduction of the NHS Reforms drug expenditure rose more-or-less in line with inflation at 10%. Volume rose by 3% and the rate of generic prescribing increased in that year to 37%. In the first year of the reforms (1991) expenditure on pharmaceuticals rose at double the rate of inflation producing a real terms expenditure growth of 11%. In short, the health reforms produced a faster rate of increase in drug spend not a reduction the reforms had been hoping for. However, these figures must be interpreted with caution because, in 1991 the Prescription Cost Analysis System (PCA) was upgraded to encompass all prescribing data rather than a sample selection. It also amalgamated both prescribing and dispensing data for individual FHSAs and general practices.

In the second year of the reforms (1992) the rate of expenditure growth dropped to 13% and was nearer the rate of inflation (ie. 9%). The number of items dispensed increased by a further one percentage point to 5% and there was also a rise in the rate of generic prescribing also increased. Thus, by 1992 36% of all prescriptions were for generic products and in terms of expenditure, 29% of the total share of NICs were for generic preparations.

# Number and Net Ingredient Costs Of Prescriptions in England

Year	<u>75</u>	<u>76</u>	<u>77</u>	<u>78</u>	<u>79</u>	<u>80</u>	81	82	83	84	<u>85</u>	<u>86</u>	<u>87</u>	<u>88</u>	<u>89</u>	<u>90</u>	<u>91</u>	<u>92</u>
All services (£m)	4763	6441	6186	6879	7749	9241	11897	13389	14657	15534	16659	17581	19008	21003	23232	25554	28560	32371
Prescriptions (NICs £m)	265	343	434	518	592	718	834	977	1096	1181	1250	1366	1537	1737	1882	2079	2520	2858
Real term expenditure	[842]	[915]	[993]	[1078]	[1127]	[1155]	[1187]	[1241]	[1327]	[1360]	[1371]	[1419]	[1537]	[1682]	[1695]	[1740]	[1935]	[2108]
NICs as percentage of all services	6	5	7	8	8	8	7	7	8	8	8	8	8	8	8	8	9	9
No. of items (millions)	282	293	296	307	305	303	300	311	315	321	319	323	335	347	352	361	377	394
Person on NHS prescribing lists (m)	45.6	45.6	45.7	45.8	45.9	46.1	46.1	46.2	46.1	46.3	46.5	46.9	47.1	47.7	48.0	47.5	47.4	47.4
Average NIC/ patient (£)	5.79	7.52	9.50	11.29	12.90	15.57	18.09	21.15	23.75	25.51	26.86	29.13	32.61	36.42	39.21	43.77	53.16	60.30
		{30}	{26}	{19}	{15}	{21}	{16}	{17}	{12}	{25.51}	{5}	{8}	{12}	{12}	{8}	{12}	{21}	{13}
Percentage Generic (%)	15	14	15	15	16	16	16	16	16	17	25	31	33	34	36	37	35	36
Associated NICs (%)	5	5	5	5	5	6	6	5	5	5	7	10	12	13	15	17	27	29
			(1)		(2)	(3)		(4)	(5)	(6/7/8)	(9)	(10/11/)	(13/14)	(15/16/)	(18/19)	(20)	(21)	(22/23)
												(12)		(17)				

Table 6.1

Source : Health and Personal Social Service Statistics for England 1982-93

Study data

Key : [ ] Real term expenditure { } annual percentage increase

(1) VPRS revision

(2) Prescription charge £0.45

(3) Prescription charge £1.00

(4) Prescription charge £1.30

(5) VPRS revision

(6) Greenfield Report

(7) Price freeze

(8) Prescription charge £1.40

(9) Prescription charge £1.60

(10) Price cuts

(11) Introduction of Limited List

(12) Prescription charge £2.00

(13) VPRS revision

14) Prescription charge 2.20

(15) PACT on line

(16) Prescription charge 2.40

(17) GPs receive first PACT data

(18) Prescription charge £2.60

(19) Prescription charge £2.80

(20) Prescription charge £3.05

(21) Prescription charge £3.40

(22) NHS Reforms

(23) PPRS revision

## Trends in therapeutic prescribing

As a result of difficulties in obtaining consistent and reliable data relating to prescribing trends of the different therapeutic categories for the full period 1975 to 1992, this discussion concentrates on data from 1982 and specifically from 1987 to 1992. In summary, of the broad 22 therapeutic groups, as defined by the 1991 edition of the British National Formulary (March 1991), only six groups account for the largest share in terms of value and volume of NICs.

These are:

- \* Cardiovascular
- \* Gastro-intestinal
- \* Respiratory
- \* Musculoskeletal
- \* Central Nervous System
- \* Infections

Between 1982 and 1992 these leading six groups accounted for approximately two-thirds of the value and volume of total NICs nationally. Despite increases in expenditure and the number of items dispensed the overall share fell slightly, particularly in the last six years (Tables 6.2 & 6.3). All 'other' drugs account for the remaining total share and have demonstrated a steady increase in share size at the expense of these other six groups.

Table 6.3 shows that the volume share of each group has remained fairly static in the decade 1982 to 1992. Table 6.2 in comparison shows greater activity with all categories displaying some change in value share. It is thus suggested, increases in expenditure of the individual therapeutic groups has little to do with changes in disease patterns or GP prescribing behaviours in terms of volume. It is more than likely that the relative price of drugs has changed. For example, the volume share of gastro-intestinal drugs remained fairly static but nearly doubled in terms of value share.

This suggests that increases in gastro-intestinal drugs are primarily the result of price increases. The static trend in volume shares of musculoskeletal drugs together with a rapid decrease in value share suggests a relatively rapid fall in the average NICs for musculoskeletal drugs. Cardiovascular drugs however, have demonstrated a slower decrease in relative prices since 1982. However since 1987 there has been a slightly more rapid reduction in the average NIC per item.

Drugs prescribed for central nervous system disorders appear to be one of the 'best buys'. Compared with other categories volume share was greater than value share suggesting this category could buy more drugs 'per pound'. However, there are also indications that whilst the value share has remained fairly static volume has slowly decreased since 1982 and subsequently the relative price of central nervous systems drugs has begun to increase. The same is more-or-less true for drugs prescribed for infectious diseases. Although it is the value share which has demonstrated a slow decline whilst the share volume of NICs has remained fairly stable. The relative price of respiratory drugs appears to have remained stable, increasing only slightly since 1982. All 'other' drugs have shown a steady increase in the value share but a much slower increase in volume share. However, between 1982 and 1990 the volume share was marginally larger than the share value suggesting that although the relative price was increasing, initially this category was getting reasonably good value for money. Since 1991 the share values have been the same and increases have also been the same suggesting prices have remained the stable.

**Total Share of Net Ingredient Costs (£ millions)**

	Year						
	82	87	88	89	90	91	92
<b>NIC all prescription :</b>	<b>977</b>	<b>1537</b>	<b>1737</b>	<b>1882</b>	<b>2079</b>	<b>2520</b>	<b>2858</b>
<b>Cardiovascular</b>	209 (21)	352 (23)	385 (22)	418 (22)	448 (22)	517 (21)	546 (19)
<b>Gastro-intestinal</b>	70 (8)	174 (11)	203 (12)	232 (12)	272 (13)	332 (13)	390 (14)
<b>Respiratory</b>	98 (10)	158 (10)	196 (11)	215 (11)	242 (12)	294 (12)	342 (12)
<b>Musculoskeletal</b>	119 (12)	195 (13)	205 (12)	207 (11)	209 (10)	225 (9)	231 (8)
<b>Central Nervous System</b>	140 (14)	166 (11)	178 (10)	186 (10)	206 (10)	247 (10)	308 (11)
<b>Infections</b>	94 (10)	139 (9)	153 (9)	156 (8)	167 (8)	191 (8)	203 (7)
<b>Others</b>	239 (24)	353 (23)	418 (24)	469 (25)	536 (26)	713 (28)	838 (29)

**Table 6.2**

Source : DoH

Reference : Health and Personal Social Services  
Statistics for England 1993 Edition

**Total Share of Number of Items (millions)**

	Year						
	82	87	88	89	90	91	92
<b>No. all prescriptions:</b>	<b>11</b>	<b>335</b>	<b>347</b>	<b>352</b>	<b>361</b>	<b>407</b>	<b>425</b>
<b>Cardiovascular</b>	48 (15)	58 (17)	59 (17)	61 (17)	63 (18)	70 (17)	73 (17)
<b>Gastro-intestinal</b>	20 (6)	25 (7)	26 (8)	27 (8)	28 (8)	32 (8)	34 (8)
<b>Respiratory</b>	33 (11)	35 (10)	37 (11)	36 (10)	37 (10)	41 (10)	43 (10)
<b>Musculoskeletal</b>	18 (6)	21 (6)	22 (6)	22 (6)	22 (6)	25 (6)	26 (6)
<b>Central Nervous System</b>	67 (21)	68 (20)	68 (20)	68 (19)	69 (19)	75 (18)	77 (18)
<b>Infections</b>	37 (11)	41 (12)	43 (12)	43 (12)	43 (12)	48 (12)	48 (11)
<b>Others</b>	88 (28)	88 (26)	92 (27)	95 (27)	98 (27)	116 (28)	124 (29)

**Table 6.3**

Source : DoH

Reference : Health and Personal Social Services  
Statistics for England 1993 Edition

**Summary**

This chapter looked at the changes in national prescribing trends which have occurred since 1975. It appeared that the government's regulation of prices and profits in the industry brought about the most change in expenditure growth up to 1983. Since 1983 the government has embarked on a policy of regular review of drug expenditure and looked at ways which would influence the behaviour not only of the industry but also, the profession and the consumer. The effect has been to stabilize drug expenditure at a time when the general rate



of inflation was increasing. Although these policies have not stopped GPs' overall prescribing it has changed the nature of their prescribing. They are now prescribing a greater proportion of generic preparations at the expense of proprietary brands and a shift in GP habits has been achieved.

Control of consumer demand has proved more difficult despite a policy of regular increases in prescription charges. This however, is the result of a disproportionate increase in the number of exempt prescriptions compared with those where a charge is levied. Thus, by 1992 three-quarters of all prescriptions were exempt from a charge. This study is particularly concerned with the effects of the 1991 NHS reforms on drug expenditure. The next chapter therefore focuses on the effects of the Reforms on micro-level prescribing with particular reference to three Family Health Services Authorities.

## CHAPTER 7

Results Part II  
Family Health Services Authority Level

## **Introduction**

This chapter examines the prescribing trends of three Family Health Service Authorities (FHSAs) to determine the effects of the reforms at this level. Each of the three FHSAs has at least one fundholding general practice participating in the study. The chapter endeavours to learn whether these FHSAs have managed to contain their drug spend with a cash-limited budget and, whether there are any clear indications of changes in prescribing trends which might explain the results. The limitations of the study are noted in terms of the study's time span. Therefore, a long-term picture of the impact of the reforms is not possible. The study should nevertheless provide some indication of whether the government is on the right track.

Expenditure under the Indicative Prescribing Amount Scheme (IPA) and the General Practice Fundholding Scheme (GPF) are examined and discussed in terms of their contribution to the FHSA's total end of year spend. Each FHSA is compared with the national average (<sup>1</sup>) in an attempt to determine how typical each and their prescribing patterns are.

### **Prescribing within a limited budget**

Only one FHSA (FHSA 3) managed to spend within its firm budget but only in the first year of the reforms. Although its second year's overspend was only fractional. The other two exceeded their budgets and also increased their annual percentage overspend. FHSA 1 was allocated a budget of £25.1 million in 1991/92. Its end of year spend exceeded this by 7% (£26.8 million). In the second year the FHSA was allocated an additional 12% taking its budget up to £28 million. However, its spending increased by 3% resulting in

---

<sup>1</sup> All figures represented by the 'National average' are based on the actual figures for England adjusted to reflect an average FHSA with the same number of prescribing units as the FHSA.

an FHSA total spend of 8% above budget. The disaggregated data shows that in the first year of the reforms both IPA and GPF Schemes exceeded their budget by 7%. In the second year the IPA Scheme increased its annual percentage overspend to 8%, the GPF Scheme however, recorded the same percentage overspent as the previous year. Thus, the total FHSA overspends were due to both general practitioner schemes exceeding their amounts.

FHSA 2 also demonstrated an overspend in both the first and second years of the reforms. The first year overspend of 10% resulted in the FHSA being awarded an additional 15% in its second year budget. However, the FHSA again exceeded its budget although it again recorded a 10% overspend. The disaggregated data shows however, the total overspend was due essentially to the IPA Scheme exceeding its target budget. In the first year of the reforms the IPA exceeded its target budget by 10% and, in the second year it increased this percentage overspend recording an end of year spend 13% above its target. In comparison, the GPF Scheme spent fractionally more than its budget (ie. 0.3%) in the first year. In the second year however, the Scheme successfully spent within its budget though only fractionally (ie. 0.6%).

FHSA 3 is the only FHSA in the study to have kept its spending within its budget. This however only occurred in the first year of the reforms. This was also the only year the FHSA's own calculated budget was accepted by the DoH. In the second year of the reforms the FHSA's annual spend was within a 1% margin of the allocated total budget. In 1991/92 the FHSA spent £43.9 million, this was 1% below its set budget of £44.5 million. In the following year the FHSA had to accept the RHA's calculated budget recommended by the DoH. In that year as expenditure rose the FHSA overspent on its budget by 1%.

The disaggregated data shows the total overspend in the second year of the reforms was again due to the IPA Scheme

exceeding its target budget. In 1991 both the IPA and GPF Schemes underspent on their budgets. However, this was not copied in the second year by the IPA Scheme which recorded an overspend of 1%. In comparison, the GPF Scheme underspent on its cash-limited budget and also achieved an increase in percentage underspend in the second year (2% in 1991, 4% in 1992).

In an attempt to find out why these FHSAs spent as they have, the following will be a description of their prescribing patterns in relation to the national average. These three FHSAs cover a whole range of general practices from inner city to rural. They differ in terms of geography, population size and mix and, types of practice ie. prescribing only and, dispensing and prescribing practices (<sup>2</sup>). All three demonstrated overall prescribing patterns different to the national average. FHSAs 1 & 2 for example, prescribed below the national average with the exception of FHSA 2 who prescribed above the national average in terms of generic prescribing. FHSA 3 on the other hand, demonstrated prescribing trends above the national average in all but generic prescribing.

#### **FHSA 1 Location : Home Counties**

FHSA 1 is part of the Northwest Thames Regional Health Authority. Its practices range from inner city to semi-rural and, from prescribing only to prescribing and dispensing practices. It comprises areas of extreme deprivation with high unemployment, higher than average numbers of elderly, elderly alone, single-parent families in temporary accommodation and, homelessness. At the other end of the

---

<sup>2</sup> Prescribing only practice : practices which only prescribe drugs but do not dispense drugs.

Prescribing & dispensing practice : practices which are allowed to dispense their own drugs, these are usually in rural areas.

Where the FHSA has both prescribing and dispensing patients the figures for both will be amalgamated (including list size).

spectrum there are areas of relative wealth. It has the second largest registered patient population of all three FHSAs and despite its obvious tendency for a high turnover of patient, between 1990 and 1992 it remained relatively static (Table 7.1). Within this population the elderly account for over 12% of the total. However, like the other two FHSAs this group does not appear to account for the majority of drug spend.

FHSA 1 is fairly typical of the national average in terms of expenditure but less so in terms of total volume of net ingredients costs (NICs) prescribed. Between 1990 and 1992 the FHSA only spent 2% less but prescribed 7% fewer items than the national average. In terms of overall percentage growth, the FHSA was again fairly typical of the national average. In the second year of the reforms the annual rate of increase was less both in terms of value and volume of NICs. The FHSA however, displayed slightly less of a reduction in the rate of expenditure compared with the national average.

The data suggests the FHSA, like most of the FHSAs in the region, was showing a reduction in the annual rate of expenditure growth. However, although the FHSA was more conservative in its expenditure, it was slightly less able to curb growth than the majority of FHSAs in the region. The reliability of these trends are confirmed by the rate of increase displayed by the annual rate of increase in the average cost per patient (Table 7.1).

The FHSA displayed a lower annual rate of generic prescribing than the FHSA. However, it demonstrated a greater increase over a three year period (Table 7.1). In 1990 for example, 37% of all prescriptions written within the FHSA were for generic preparations compared with a national average of 42%. By 1992 the FHSA had increased its rate of generic prescribing to 42%, a rise of five percentage points, compared with 44% for the national average. Consequently,

one of the effects of the reforms has been to increase the FHSA's overall rate of generic prescribing within the FHSA as a whole and, at a faster rate than the national average.

Despite demonstrating an overall prescribing trend below the national average, FHSA 1 prescribed above the national average in three therapeutic groups. These were infections, respiratory (value only) and all 'others' (value only). The musculoskeletal category of drugs was unique because it was the only drug group to demonstrate a fall in average NIC per item. Although the FHSA displayed a similar reduction in the annual rate of expenditure growth, this level of restraint was insufficient for FHSA expenditure to remain within either its first or second year drug budgets. Nor was it enough to stop the FHSA from increasing its percentage end of year spend in the second year of the reforms.

Number and Net Ingredient Costs Family Health Service Authority 1			
	1990	1991	1992
<b>Total Budget Allocation (£ million)</b>	**	25084919	27970064
<b>Total Net Ingredient Costs (NICs £)</b>	23647813 (24083046)	26922611 (27658080)	30488677 (31207282)
<b>Indicative Prescribing Amount Scheme (£m)</b>			
(Annual Amount)	**	23256758	25617020
(Cumul. Spend)	**	24801012	27762082
<b>General Practitioner Fundholding Scheme (£m)</b>			
(Annual Amount)	**	1828161	2353044
(Cumul. Spend)	**	1958739	2521827
<b>Total Number of Items</b>	3826386 (4108881)	4041622 (4347318)	4243512 (4553918)
<b>Percentage of generic prescribing (%)</b>	37 (42)	40 (43)	42 (44)
<b>Total number of FHSA registered patients</b>	572595 (577446)	575129 (571831)	576098 (568102)
<b>Average NIC per patient (£)</b>	41.03 (41.71)	46.81{14%} (48.38) {16%}	52.92{13%} (56.93) {14%}

**Table 7.1**

Sources : Prescription Pricing Authority  
Study data

( ) represents national average

\*\* data not available

[ ] annual percentage increase

## **FHSA 2 Location : Central London**

FHSA 2 is also part of the Northwest Thames Regional Health Authority. It is a prescribing only FHSA covering an area in central London subsequently, its general practices are inner city practices. Contrary to the traditional image of inner cities this FHSA boasts a number of extremely wealthy areas where the social status of the population can be defined as British social classes I&II. There are however, other areas



within the FHSA which are defined as deprived inner city. This is an area with a higher than average patient turnover and a wide mix of ethnic minority groups. The FHSA has the smallest registered patient population of all three FHSAs as well as, a patient population below the national average. It is also the only FHSA in the study to display a fall in the size of the patient population but this is also typical of the national average. Within the FHSA population the elderly account for 13%.

Like FHSA 1, FHSA 2 also prescribed below the national average but with the exception of generic prescribing. Compared with the two other FHSAs, this FHSA is the least reflective of the national average. The FHSA prescribed significantly below the national average particularly in terms of volume of NICs and, between 1990 and 1992 it spent on average 31% less and, prescribed 40% fewer items. In terms of overall percentage growth, the FHSA again did not reflect the national average. Between 1990 and 1992 the FHSA spent on additional 35% (real term growth was 19%) compared with a national average of 22% (real term growth was 8%). At the same time, the number of items prescribed by the FHSA rose by 10%, double the national average rate of 5%.

In the second year of the reforms the annual rate of growth rose at more than double that of the previous year (ie. 23% and 10% respectively). This was quite different to the national average pattern and level of growth whereby, growth in the first year of the reforms was 11% in comparison and fell to 10% in year two. In terms of volume, the FHSA displayed a constant rate of increase in both years since the reforms compared to a reduction in the rate of increase from 3% to 2% for the national average. These trends indicate and are borne out by the annual rate of increase in the average cost per patient (Table 7.2) that, FHSA 2 was less able to restrain growth in expenditure than others in its region. Whereas, the national average trend displayed a reduction in

growth the FHSA demonstrated a much faster rate of increase in drug spend.

The FHSA had a higher annual rate of generic prescribing than the national average and, displayed a similar marginal overall growth between 1990 and 1992 (Table 7.2). In 1990 for example, nearly one-half of all FHSA prescriptions were for generic preparations (ie. 48%). This compared with a national average of 42%. By 1992 however, the FHSA rate of generic prescribing had only increased by one percentage point to 49% compared with a national average increase of two percentage points to 44%. It is perhaps surprising that, given the similar rates of increase in the rate of generic prescribing the FHSA displayed a higher overall rate of increase in expenditure.

All drug categories in the FHSA, with the exception of infections, displayed prescribing trends significantly below the national average. Musculoskeletal drugs was the only category with a cheaper relative price per item (ie. 10% less) than the national average. Fundamentally, the FHSA appeared to be very conservative in terms of overall value of NICs but more particularly, in terms of volume of items prescribed. Part of this conservatism reflected the FHSA's previous drive to reduce expenditure growth and modify prescribing behaviour (Chapter 5). In addition however, it also reflected a reduction in the size of the patient population. Although the FHSA displayed a relatively high rate of generic prescribing this was not enough to ensure the FHSA spent within its first and second year drug budgets. Moreover, the FHSA demonstrated an increase in percentage overspend in the second year.

Number and Net Ingredient Costs Family Health Service Authority 2			
	1990	1991	1992
<b>Total Budget Allocation (£m)</b>	**	12846946	14741236
<b>Total Net Ingredient Costs (NICs £)</b>	12058575 (18819434)	13258413 (20908804)	16295506 (22991653)
<b>Indicative Prescribing Amount Scheme (£m)</b>			
(Annual Amount)	**	12599930	13638494
(Cumul. Spend)	**	13888997	15402907
<b>General Practitioner Fundholding Scheme (£m)</b>			
(Annual Amount)	**	247016	1102742
(Cumul. Spend)	**	247733	1095776
<b>Total Number of Items</b>	1891796 (3210385)	1981124 (3312209)	2071902 (3364176)
<b>Percentage of generic (%)</b>	48 (42)	48 (43)	49 (44)
<b>Total number of FHSA registered patients</b>	441179 (577446)	431341 (571831)	424190 (568102)
<b>Average NIC per patient (£)</b>	27.33 (32.59)	30.74{12%} (36.56){12%}	38.42{23%} (40.47){14%}

**Table 7.2**

Source : Prescription Pricing Authority

( ) represents national average

\*\* data not available

[ ] annual percentage increase

### **FHSA 3 Location : East Anglia**

FHSA 3 is an FHSA in East Anglia. It is predominantly semi-rural/rural and as a result, the majority of its general practices are prescribing and dispensing. As well as being an agricultural area there are a number of small market towns and at least one large city. It is also an essentially coastal area which caters for a summer trade of holiday-makers. Thus, the area is a mix of agriculture, light

industry, tourism and commercial employment. FHSA 3 has the largest registered patient population in the study and was on average 48% above the national average. Between 1989 and 1992 it rose by 3%. The FHSA patient population was on average 48% above the national average (Table 7.3).

In addition the FHSA also features the largest proportion of elderly of any FHSA in the study. Between 1989 and 1992 the elderly accounted for nearly one-fifth of all patients and, although this group increased by 3% their share remained the same. It has been suggested the area's close proximity to the coast is what attracts people in their retirement. Nevertheless, the data indicates this sector of the population did exert any more or a strain on FHSA expenditure than expected.

FHSA 3 is the only FHSA in the study which displayed an overall prescribing trend above the national average, with the exception of generic prescribing. It is nonetheless fairly typical of the average but only in terms of volume of NICs. Between 1989 and 1990 for example, the FHSA prescribed 1% fewer items but spent 32% more than the national average on drugs (Table 7.3). In terms of overall percentage growth the FHSA demonstrated a slightly higher rates of increase in both value of volume of NICs prescribed than the FHSA average.

The pattern of annual growth shows that in the year immediately prior to and, the first year of fundholding, the FHSA appeared less able to curb expenditure growth than other FHSAs in the region. However, in the second year of the reforms the FHSA's annual rate of increase was marginally less than the national average. During this year period the rate of increase in volume remained relatively static although again, the FHSA demonstrated a slightly higher rate. In terms of overall cost-containment, as measured by average cost per patient (Table 7.3), the FHSA displayed a greater restraint in the first year of the reforms but this was only

short-lived. Overall, the FHSA showed greater activity in the rate of increase than the national average.

In terms of generic prescribing, the FHSA demonstrated a lower rate of generic prescribing than the national average. Not only this, between 1989 and 1992 it displayed a lower overall rate of increase which resulted in an increase in the margin of difference between the two. For example, in 1989 less than one-third of all FHSA prescriptions were for generic preparations compared with a national average rate of 38%. By 1992, the FHSA rate of generic prescribing had increased by only five percentage points to 37%. In comparison, the national average rate had increased to 45%, eight percentage point higher than the FHSA level. It is however noted, between 1989 and 1990 the FHSA demonstrated a higher rate of increase than the national average but this was not sustained. In fact, the FHSA exhibited a fall in the generic rate of prescribing in the following year.

Although the overall prescribing trends were below the national average, in two therapeutic categories (infections and respiratory (volume only)) the FHSA demonstrated an above average trend. Similar to FHSAs 1 and 2 the average cost per musculoskeletal drug fell consecutively since 1989. This is the only category where this occurred. This FHSA is the only one in the study who demonstrated an ability to spend within a cash limited budget (Table 7.3). However, this only occurred in the first year of the reforms when the FHSA had set its own budget. In the following year when it was forced to accept the DoH's advised budget, the FHSA overspent on its firm budget. However, the level of overspend was only marginal (ie. less than 1%).

	Number and Net Ingredient Costs Family Health Service Authority 3			
	1989	1990	1991	1992
<b>Total Budget Allocation (£m)</b>	**	**	44544490	49169779
<b>Total Net Ingredient Costs (£m)</b>	33718499 (31141372)	38062207 (34907700)	43909682 (39516235)	49641351 (44931572)
<b>Indicative Prescribing Amount Scheme (£m)</b>				
(Annual Amount)	**	**	40433584	44715871
(Cumul. Spend)	**	**	39882077	45357981
<b>General Practitioner Fundholding Scheme (£m)</b>				
(Annual Amount)	**	**	4110906	4453908
(Cumul. Spend)	**	**	4027605	4283370
<b>Total Number of Items</b>	5838786 (5836145)	6106601 (6071987)	6428662 (6309756)	6818646 (6609463)
<b>Percentage of generic prescribing (%)</b>	32 (38)	38 (40)	37 (43)	37 (45)
<b>Total number of FHSA registered patients</b>	751918 (515568)	753909 (513241)	769231 (516979)	772321 (519240)
<b>Average NIC per patient (£)</b>	44.84 (60.40)	50.49{13%} (68.01){13%}	55.41{10%} (76.44){12%}	63.75{15%} (86.53){15%}

Table 7.3

Source : Prescription Pricing Authority

( ) represents FHSA average

\*\* data not available

[ ] annual percentage increase

### Summary

This chapter looked at three different Family Health Service Authorities to see whether the NHS reforms of 1991 were successful in getting FHSAs to spend within a cash limited budget. The data suggests that, in terms of overall spend the reforms appear to have done little to curb growth in drug expenditure at FHSA level. Only one FHSA was able to contain

its expenditure on drugs within a limited budget. The other two FHSAs not only exceeded their drug budgets annually but also increased the amount by which they overspent. Disaggregated data however indicates that overspend at this level was essentially the result of the IPA Schemes exceeding their target budgets. GPF Schemes did overspend on their limited budgets but their margins of difference were closer to the financial boundaries.

The principle that direct incentives and cash limited budgets are more effective in achieving cost-containment was supported. Where these are absent it is indicated GPs' prescribing patterns remain very much as before. The next chapter takes a more indepth look at the 'success' of the GPF Scheme by examining the prescribing trends of eight GP fundholding practices. It examines the strategies implemented by these fundholders in an attempt to contain drug spend within a cash budget.

## CHAPTER 7

<p>Results Part II Family Health Services Authority Level</p>
---



## **Introduction**

This chapter examines the prescribing trends of three Family Health Service Authorities (FHSAs) to determine the effects of the reforms at this level. Each of the three FHSAs has at least one fundholding general practice participating in the study. The chapter endeavours to learn whether these FHSAs have managed to contain their drug spend with a cash-limited budget and, whether there are any clear indications of changes in prescribing trends which might explain the results. The limitations of the study are noted in terms of the study's time span. Therefore, a long-term picture of the impact of the reforms is not possible. The study should nevertheless provide some indication of whether the government is on the right track.

Expenditure under the Indicative Prescribing Amount Scheme (IPA) and the General Practice Fundholding Scheme (GPF) are examined and discussed in terms of their contribution to the FHSA's total end of year spend. Each FHSA is compared with the national average <sup>(1)</sup> in an attempt to determine how typical each and their prescribing patterns are.

### **Prescribing within a limited budget**

Only one FHSA (FHSA 3) managed to spend within its firm budget but only in the first year of the reforms. Although its second year's overspend was only fractional. The other two exceeded their budgets and also increased their annual percentage overspend. FHSA 1 was allocated a budget of £25.1 million in 1991/92. Its end of year spend exceeded this by 7% (£26.8 million). In the second year the FHSA was allocated an additional 12% taking its budget up to £28 million. However, its spending increased by 3% resulting in

---

<sup>1</sup> All figures represented by the 'National average' are based on the actual figures for England adjusted to reflect an average FHSA with the same number of prescribing units as the FHSA.

an FHSA total spend of 8% above budget. The disaggregated data shows that in the first year of the reforms both IPA and GPF Schemes exceeded their budget by 7%. In the second year the IPA Scheme increased its annual percentage overspend to 8%, the GPF Scheme however, recorded the same percentage overspend as the previous year. Thus, the total FHSA overspends were due to both general practitioner schemes exceeding their amounts.

FHSA 2 also demonstrated an overspend in both the first and second years of the reforms. The first year overspend of 10% resulted in the FHSA being awarded an additional 15% in its second year budget. However, the FHSA again exceeded its budget although it again recorded a 10% overspend. The disaggregated data shows however, the total overspend was due essentially to the IPA Scheme exceeding its target budget. In the first year of the reforms the IPA exceeded its target budget by 10% and, in the second year it increased this percentage overspend recording an end of year spend 13% above its target. In comparison, the GPF Scheme spent fractionally more than its budget (ie. 0.3%) in the first year. In the second year however, the Scheme successfully spent within its budget though only fractionally (ie. 0.6%).

FHSA 3 is the only FHSA in the study to have kept its spending within its budget. This however only occurred in the first year of the reforms. This was also the only year the FHSA's own calculated budget was accepted by the DoH. In the second year of the reforms the FHSA's annual spend was within a 1% margin of the allocated total budget. In 1991/92 the FHSA spent £43.9 million, this was 1% below its set budget of £44.5 million. In the following year the FHSA had to accept the RHA's calculated budget recommended by the DoH. In that year as expenditure rose the FHSA overspent on its budget by 1%.

The disaggregated data shows the total overspend in the second year of the reforms was again due to the IPA Scheme

exceeding its target budget. In 1991 both the IPA and GPF Schemes underspent on their budgets. However, this was not copied in the second year by the IPA Scheme which recorded an overspend of 1%. In comparison, the GPF Scheme underspent on its cash-limited budget and also achieved an increase in percentage underspend in the second year (2% in 1991, 4% in 1992).

In an attempt to find out why these FHSAs spent as they have, the following will be a description of their prescribing patterns in relation to the national average. These three FHSAs cover a whole range of general practices from inner city to rural. They differ in terms of geography, population size and mix and, types of practice ie. prescribing only and, dispensing and prescribing practices (<sup>2</sup>). All three demonstrated overall prescribing patterns different to the national average. FHSAs 1 & 2 for example, prescribed below the national average with the exception of FHSA 2 who prescribed above the national average in terms of generic prescribing. FHSA 3 on the other hand, demonstrated prescribing trends above the national average in all but generic prescribing.

#### **FHSA 1 Location : Home Counties**

FHSA 1 is part of the Northwest Thames Regional Health Authority. Its practices range from inner city to semi-rural and, from prescribing only to prescribing and dispensing practices. It comprises areas of extreme deprivation with high unemployment, higher than average numbers of elderly, elderly alone, single-parent families in temporary accommodation and, homelessness. At the other end of the

---

<sup>2</sup> Prescribing only practice : practices which only prescribe drugs but do not dispense drugs.

Prescribing & dispensing practice : practices which are allowed to dispense their own drugs, these are usually in rural areas.

Where the FHSA has both prescribing and dispensing patients the figures for both will be amalgamated (including list size).

spectrum there are areas of relative wealth. It has the second largest registered patient population of all three FHSAs and despite its obvious tendency for a high turnover of patient, between 1990 and 1992 it remained relatively static (Table 7.1). Within this population the elderly account for over 12% of the total. However, like the other two FHSAs this group does not appear to account for the majority of drug spend.

FHSA 1 is fairly typical of the national average in terms of expenditure but less so in terms of total volume of net ingredients costs (NICs) prescribed. Between 1990 and 1992 the FHSA only spent 2% less but prescribed 7% fewer items than the national average. In terms of overall percentage growth, the FHSA was again fairly typical of the national average. In the second year of the reforms the annual rate of increase was less both in terms of value and volume of NICs. The FHSA however, displayed slightly less of a reduction in the rate of expenditure compared with the national average.

The data suggests the FHSA, like most of the FHSAs in the region, was showing a reduction in the annual rate of expenditure growth. However, although the FHSA was more conservative in its expenditure, it was slightly less able to curb growth than the majority of FHSAs in the region. The reliability of these trends are confirmed by the rate of increase displayed by the annual rate of increase in the average cost per patient (Table 7.1).

The FHSA displayed a lower annual rate of generic prescribing than the FHSA. However, it demonstrated a greater increase over a three year period (Table 7.1). In 1990 for example, 37% of all prescriptions written within the FHSA were for generic preparations compared with a national average of 42%. By 1992 the FHSA had increased its rate of generic prescribing to 42%, a rise of five percentage points, compared with 44% for the national average. Consequently,

one of the effects of the reforms has been to increase the FHSA's overall rate of generic prescribing within the FHSA as a whole and, at a faster rate than the national average.

Despite demonstrating an overall prescribing trend below the national average, FHSA 1 prescribed above the national average in three therapeutic groups. These were infections, respiratory (value only) and all 'others' (value only). The musculoskeletal category of drugs was unique because it was the only drug group to demonstrate a fall in average NIC per item. Although the FHSA displayed a similar reduction in the annual rate of expenditure growth, this level of restraint was insufficient for FHSA expenditure to remain within either its first or second year drug budgets. Nor was it enough to stop the FHSA from increasing its percentage end of year spend in the second year of the reforms.

Number and Net Ingredient Costs Family Health Service Authority 1			
	1990	1991	1992
Total Budget Allocation (£ million)	**	25084919	27970064
Total Net Ingredient Costs (NICs £)	23647813 (24083046)	26922611 (27658080)	30488677 (31207282)
Indicative Prescribing Amount Scheme (£m)			
(Annual Amount)	**	23256758	25617020
(Cumul. Spend)	**	24801012	27762082
General Practitioner Fundholding Scheme (£m)			
(Annual Amount)	**	1828161	2353044
(Cumul. Spend)	**	1958739	2521827
Total Number of Items	3826386 (4108881)	4041622 (4347318)	4243512 (4553918)
Percentage of generic prescribing (%)	37 (42)	40 (43)	42 (44)
Total number of FHSA registered patients	572595 (577446)	575129 (571831)	576098 (568102)
Average NIC per patient (£)	41.03 (41.71)	46.81{14%} (48.38){16%}	52.92{13%} (56.93){14%}

Table 7.1

Sources : Prescription Pricing Authority  
Study data

( ) represents national average

\*\* data not available

[ ] annual percentage increase

## FHSA 2 Location : Central London

FHSA 2 is also part of the Northwest Thames Regional Health Authority. It is a prescribing only FHSA covering an area in central London subsequently, its general practices are inner city practices. Contrary to the traditional image of inner cities this FHSA boasts a number of extremely wealthy areas where the social status of the population can be defined as British social classes I&II. There are however, other areas

within the FHSA which are defined as deprived inner city. This is an area with a higher than average patient turnover and a wide mix of ethnic minority groups. The FHSA has the smallest registered patient population of all three FHSAs as well as, a patient population below the national average. It is also the only FHSA in the study to display a fall in the size of the patient population but this is also typical of the national average. Within the FHSA population the elderly account for 13%.

Like FHSA 1, FHSA 2 also prescribed below the national average but with the exception of generic prescribing. Compared with the two other FHSAs, this FHSA is the least reflective of the national average. The FHSA prescribed significantly below the national average particularly in terms of volume of NICs and, between 1990 and 1992 it spent on average 31% less and, prescribed 40% fewer items. In terms of overall percentage growth, the FHSA again did not reflect the national average. Between 1990 and 1992 the FHSA spent on additional 35% (real term growth was 19%) compared with a national average of 22% (real term growth was 8%). At the same time, the number of items prescribed by the FHSA rose by 10%, double the national average rate of 5%.

In the second year of the reforms the annual rate of growth rose at more than double that of the previous year (ie. 23% and 10% respectively). This was quite different to the national average pattern and level of growth whereby, growth in the first year of the reforms was 11% in comparison and fell to 10% in year two. In terms of volume, the FHSA displayed a constant rate of increase in both years since the reforms compared to a reduction in the rate of increase from 3% to 2% for the national average. These trends indicate and are borne out by the annual rate of increase in the average cost per patient (Table 7.2) that, FHSA 2 was less able to restrain growth in expenditure than others in its region. Whereas, the national average trend displayed a reduction in

growth the FHSA demonstrated a much faster rate of increase in drug spend.

The FHSA had a higher annual rate of generic prescribing than the national average and, displayed a similar marginal overall growth between 1990 and 1992 (Table 7.2). In 1990 for example, nearly one-half of all FHSA prescriptions were for generic preparations (ie. 48%). This compared with a national average of 42%. By 1992 however, the FHSA rate of generic prescribing had only increased by one percentage point to 49% compared with a national average increase of two percentage points to 44%. It is perhaps surprising that, given the similar rates of increase in the rate of generic prescribing the FHSA displayed a higher overall rate of increase in expenditure.

All drug categories in the FHSA, with the exception of infections, displayed prescribing trends significantly below the national average. Musculoskeletal drugs was the only category with a cheaper relative price per item (ie. 10% less) than the national average. Fundamentally, the FHSA appeared to be very conservative in terms of overall value of NICs but more particularly, in terms of volume of items prescribed. Part of this conservatism reflected the FHSA's previous drive to reduce expenditure growth and modify prescribing behaviour (Chapter 5). In addition however, it also reflected a reduction in the size of the patient population. Although the FHSA displayed a relatively high rate of generic prescribing this was not enough to ensure the FHSA spent within its first and second year drug budgets. Moreover, the FHSA demonstrated an increase in percentage overspend in the second year.



Number and Net Ingredient Costs Family Health Service Authority 2			
	1990	1991	1992
<b>Total Budget Allocation (£m)</b>	**	12846946	14741236
<b>Total Net Ingredient Costs (NICs £)</b>	12058575 (18819434)	13258413 (20908804)	16295506 (22991653)
<b>Indicative Prescribing Amount Scheme (£m)</b>			
(Annual Amount)	**	12599930	13638494
(Cumul. Spend)	**	13888997	15402907
<b>General Practitioner Fundholding Scheme (£m)</b>			
(Annual Amount)	**	247016	1102742
(Cumul. Spend)	**	247733	1095776
<b>Total Number of Items</b>	1891796 (3210385)	1981124 (3312209)	2071902 (3364176)
<b>Percentage of generic (%)</b>	48 (42)	48 (43)	49 (44)
<b>Total number of FHSA registered patients</b>	441179 (577446)	431341 (571831)	424190 (568102)
<b>Average NIC per patient (£)</b>	27.33 (32.59)	30.74{12%} (36.56){12%}	38.42{23%} (40.47){14%}

**Table 7.2**

Source : Prescription Pricing Authority

( ) represents national average

\*\* data not available

[ ] annual percentage increase

### **FHSA 3 Location : East Anglia**

FHSA 3 is an FHSA in East Anglia. It is predominantly semi-rural/rural and as a result, the majority of its general practices are prescribing and dispensing. As well as being an agricultural area there are a number of small market towns and at least one large city. It is also an essentially coastal area which caters for a summer trade of holiday-makers. Thus, the area is a mix of agriculture, light

industry, tourism and commercial employment. FHSA 3 has the largest registered patient population in the study and was on average 48% above the national average. Between 1989 and 1992 it rose by 3%. The FHSA patient population was on average 48% above the national average (Table 7.3).

In addition the FHSA also features the largest proportion of elderly of any FHSA in the study. Between 1989 and 1992 the elderly accounted for nearly one-fifth of all patients and, although this group increased by 3% their share remained the same. It has been suggested the area's close proximity to the coast is what attracts people in their retirement. Nevertheless, the data indicates this sector of the population did exert any more or a strain on FHSA expenditure than expected.

FHSA 3 is the only FHSA in the study which displayed an overall prescribing trend above the national average, with the exception of generic prescribing. It is nonetheless fairly typical of the average but only in terms of volume of NICs. Between 1989 and 1990 for example, the FHSA prescribed 1% fewer items but spent 32% more than the national average on drugs (Table 7.3). In terms of overall percentage growth the FHSA demonstrated a slightly higher rates of increase in both value of volume of NICs prescribed than the FHSA average.

The pattern of annual growth shows that in the year immediately prior to and, the first year of fundholding, the FHSA appeared less able to curb expenditure growth than other FHSAs in the region. However, in the second year of the reforms the FHSA's annual rate of increase was marginally less than the national average. During this year period the rate of increase in volume remained relatively static although again, the FHSA demonstrated a slightly higher rate. In terms of overall cost-containment, as measured by average cost per patient (Table 7.3), the FHSA displayed a greater restraint in the first year of the reforms but this was only

short-lived. Overall, the FHSA showed greater activity in the rate of increase than the national average.

In terms of generic prescribing, the FHSA demonstrated a lower rate of generic prescribing than the national average. Not only this, between 1989 and 1992 it displayed a lower overall rate of increase which resulted in an increase in the margin of difference between the two. For example, in 1989 less than one-third of all FHSA prescriptions were for generic preparations compared with a national average rate of 38%. By 1992, the FHSA rate of generic prescribing had increased by only five percentage points to 37%. In comparison, the national average rate had increased to 45%, eight percentage point higher than the FHSA level. It is however noted, between 1989 and 1990 the FHSA demonstrated a higher rate of increase than the national average but this was not sustained. In fact, the FHSA exhibited a fall in the generic rate of prescribing in the following year.

Although the overall prescribing trends were below the national average, in two therapeutic categories (infections and respiratory (volume only)) the FHSA demonstrated an above average trend. Similar to FHSAs 1 and 2 the average cost per musculoskeletal drug fell consecutively since 1989. This is the only category where this occurred. This FHSA is the only one in the study who demonstrated an ability to spend within a cash limited budget (Table 7.3). However, this only occurred in the first year of the reforms when the FHSA had set its own budget. In the following year when it was forced to accept the DoH's advised budget, the FHSA overspent on its firm budget. However, the level of overspend was only marginal (ie. less than 1%).

Number and Net Ingredient Costs Family Health Service Authority 3				
	1989	1990	1991	1992
<b>Total Budget Allocation (£m)</b>	**	**	44544490	49169779
<b>Total Net Ingredient Costs (£m)</b>	33718499 (31141372)	38062207 (34907700)	43909682 (39516235)	49641351 (44931572)
<b>Indicative Prescribing Amount Scheme (£m)</b>				
<b>(Annual Amount)</b>	**	**	40433584	44715871
<b>(Cumul. Spend)</b>	**	**	39882077	45357981
<b>General Practitioner Fundholding Scheme (£m)</b>				
<b>(Annual Amount)</b>	**	**	4110906	4453908
<b>(Cumul. Spend)</b>	**	**	4027605	4283370
<b>Total Number of Items</b>	5838786 (5836145)	6106601 (6071987)	6428662 (6309756)	6818646 (6609463)
<b>Percentage of generic prescribing (%)</b>	32 (38)	38 (40)	37 (43)	37 (45)
<b>Total number of FHSA registered patients</b>	751918 (515568)	753909 (513241)	769231 (516979)	772321 (519240)
<b>Average NIC per patient (£)</b>	44.84 (60.40)	50.49{13%} (68.01){13%}	55.41{10%} (76.44){12%}	63.75{15%} (86.53){15%}

Table 7.3

Source : Prescription Pricing Authority

( ) represents FHSA average

\*\* data not available

[ ] annual percentage increase

### Summary

This chapter looked at three different Family Health Service Authorities to see whether the NHS reforms of 1991 were successful in getting FHSAs to spend within a cash limited budget. The data suggests that, in terms of overall spend the reforms appear to have done little to curb growth in drug expenditure at FHSA level. Only one FHSA was able to contain

its expenditure on drugs within a limited budget. The other two FHSAs not only exceeded their drug budgets annually but also increased the amount by which they overspent. Disaggregated data however indicates that overspend at this level was essentially the result of the IPA Schemes exceeding their target budgets. GPF Schemes did overspend on their limited budgets but their margins of difference were closer to the financial boundaries.

The principle that direct incentives and cash limited budgets are more effective in achieving cost-containment was supported. Where these are absent it is indicated GPs' prescribing patterns remain very much as before. The next chapter takes a more indepth look at the 'success' of the GPF Scheme by examining the prescribing trends of eight GP fundholding practices. It examines the strategies implemented by these fundholders in an attempt to contain drug spend within a cash budget.

## Chapter 8

<p>Results Part III General Practitioner Fundholding Practices</p>
--

## **Introduction**

The findings of the last chapter provided evidence to support the principle that, cash-limited budgets and direct incentives can influence GPs' choice of drug therapy based on cost. This chapter looks behind the prescribing trends of eight GP fundholding practices to understand the process by which this level of prescribing was achieved. At the beginning of the study ten GP fundholding practices had agreed to take part. However, as the study progressed it became apparent that lack of data for three of the practices meant their total or part exclusion from the study. Consequently, two practices were completely excluded and the other practice only had data since the 1991 NHS reforms (Chapter 3). Thus, a pre and post-reform comparison of this practice's spend was impossible. Nonetheless, it was still possible to include their account of what cost-containment policies they had implemented and whether these gave any indication they might prove successful.

This chapter begins by presenting a summary and discussion of the cost-containment policies implemented by the practices. This is followed by a review of the prescribing trends of these practices before and after fundholding. The prescribing patterns of each practice is discussed separately in the light of the reforms and their cost-containment policies. An attempt is also made to determine how typical each is in relation to the FHSA average (<sup>1</sup>).

## **Policy Review**

Table 8.1 summarizes the policies implemented by the eight GP fundholding practices in an attempt to contain drug spend, particularly in view of the 1991 NHS reforms. Most practices believed this could only be achieved by a combination of

---

<sup>1</sup> All figures represented by the FHSA average are based on the actual figures for the FHSA adjusted to reflect an average practice with the same number of prescribing units as the practice.

strategies. There was a clear distinction between 'action' strategies which included those likely to directly influence prescribing choices such as : a practice formulary, policy of generic prescribing, a limited list etc. and, those which audited the progress of 'action' strategies.

Most practices had a vague and general policy of generic prescribing but, with the introduction of fundholding pursued generic prescribing much more rigorously and introduced a whole range of other strategies. Four practices used this in conjunction with the use of a practice formulary, diagnostic protocols and limited lists for specific drugs types. Two practices were already prescribing from a practice formulary and three others had discussed compiling their own but, time constraints had so far prohibited them from doing so. One of these practices had also looked at the possibility of drawing up a set of diagnostic protocols. Two other practices had compiled and were using a set of diagnostic protocols. Three practices had started to make use of a limited list of specific drug types but, only one practice had agreed to decrease the quantity of drugs prescribed per treatment.

As a prerequisite to fundholding all practices agreed they should conduct regular practice review meetings to feedback on drug management. However, only five practices did so, two of whom fed back using PACT information but only one enlisted the help of the FHSA's pharmaceutical adviser. One other practice regularly sought the advice from the FHSA's pharmaceutical adviser (Chapter 5). The question of a 'shift' in hospital prescribing was raised in relation to the potential problems this presented for practice prescribing. Despite anxieties about this only two practices had, at this stage of the study, discussed the possibility of approaching hospital consultants with a view to drawing up specific contracts for discharge and outpatient prescribing responsibility (Table 8.1).



**Summary table of practice policies  
adopted after becoming fundholders**

Fundholding Practices								
Policies	1	2	3	4	5	6	7	8
Generic prescribing	x	x*		x	x	x	x	x
Formulary		x	x	x*	x	x	x*	
Diagnostic protocols	x				x		x*	
Limited list for specific drug types		x		x				x
Decrease quantities prescribed					x			
Audit/regular practice meetings		x	x		x	x		x
Monitoring using PACT					x			
Negotiation with hospitals		x*	x					
Collaboration with FHSA	x							

**Table 8.1**

Sources : Practice data

Note : (\*) Have considered

The question therefore is to determine, as far as possible, to what extent these polices have managed to reduce drug spend and which, if any, have been particularly successful.

**Prescribing within a cash-limited budget**

The findings of Chapter 7 indicated that fundholding was largely more successful than non-fundholding in containing overall expenditure within a budget. This is not to say fundholding practices did not exceed their budgets they did, but their percentage overspend was less than that demonstrated by non-fundholding practices. Moreover, fundholding practices also kept nearer to their budgets than non-fundholding practices. Only one practice in the study achieved a spend within its budget and only in the second year of the reforms. All other practices exceeded their

first and second year drug budgets. The margins of overspend in the first year ranged from 3% to 16% and from 4% and 17% in the second year. In the two year post reform period four practices increased the amount by which they overspent, two other practices decreased their percentage overspend and one practice displayed the same percentage overspend.

Overall, no pattern emerged to relate practice overspend and the number, type or combination of cost-containment strategies implemented (Table 8.1). Practice 5 for example implemented the most strategies but was successful only in showing the same percentage overspend in both years since the reforms. Practice 4 on the other hand, implemented only two strategies but successfully contained its drug spend within the second year's budget. The chapter will now examine each practice's prescribing patterns separately in the light of the reforms and their cost-containment policies.

### **Practice 1**

This practice is uncharacteristic of an inner city. Its young, affluent and cosmopolitan population displays a very transient nature (Chapter 5) and since 1988, the actual size of the population has fallen by 10% (Table 8.2). The practice described its prescribing as very conservative, particularly in terms of volume, compared with the FHSA average although, it did have a tendency to prescribe newer and more expensive drugs (Chapter 5). The practice's prescribing data supports these perceptions and reveals that over a five year period the practice spent 16% less but prescribed 32% fewer items overall than the FHSA average.

In addition, practice spend increased by 95% (real term growth was 50%) compared with an FHSA average overall expenditure of 65% (real term growth was 26%). Volume growth at 35% was however, more than double the FHSA average of 14%. This is perhaps not surprising given that since the reforms

there has been an increase in the rate of volume growth. There was no evidence to support the practice's claims that it had attempted to artificially inflate its drug spend in the year immediately prior to the reforms (Chapter 5). In fact, the annual rate of expenditure growth in 1990 was less than in the previous year. Moreover, the number of items prescribed was the lowest in the five year period.

In the first year of the reforms however, the number of items prescribed increased sharply from 5% (1990) to 16%. The first indication of a rise in expenditure in five years occurred in the second year of the reforms. These annual patterns of growth were not however typical of the FHSA average. Whereas the annual rate of practice expenditure fell between 1989 and 1992, it rose in terms of the FHSA average. This reduction in the annual rate of expenditure contributed to the overall reduction in the average cost per patient over a period of three years. Moreover, in the two years since the reforms growth in the average cost per patient stabilized at 19%. A reduction in growth in this area is important because, it not only reflects real levels of cost-containment but, also gives practices some leeway in overall drug spend when they are increasingly facing increases in the cost of hospital prescribing.

Chapter 5 provided evidence that hospitals are shifting their prescribing costs to general practice. Table 8.2 shows that in 1991/92 (ie. first reform year) the average cost per patient per year was £28.36. In the same year the practice was being asked to prescribe for over 21 patients who were classified as 'expensive' and whose annual average cost was in excess of £380 in comparison. In other words, these 21 patients represented only 0.2% of the practice's patient population but accounted for 14% of the practice spend.

Cost-containment policies introduced by the practice centred on a policy of generic prescribing and the use of diagnostic protocols for the management and treatment of specific

illnesses (Table 8.1) such as asthma, hypertension and diabetes. These protocols have proved relatively successful in reducing growth in drug spend. For example, the annual rate of increase for cardiovascular drugs (ie. asthma and hypertension) fell both in terms of value and volume of NICs post reforms. There was no indication however, of a long-term reduction in the annual rate of growth in the 'all other' category which includes drugs for the treatment of diabetes. The possible effects of the use of this protocol are masked by the data for other treatments in this category.

Despite an overall reduction in the annual rate of increase in expenditure post reforms, the practice exceeded its first and second years' drug budgets. In addition, it was one of the four practices to increase the amount by which it overspent in successive years. In the first year of the reforms the practice exceeded its budget by 4%. It was awarded an additional 4% in the second year budget but nonetheless, displayed an end of year overspend of 17%.

**Prescribing Data : Practice 1**

	1988	1989	1990	1991	1992
<b>Budget (£)</b>	**	**	**	247016	256542
<b>Spend (£)</b>	154312 (211025)	190382 (231228)	226388 (256709)	257482 (290572)	301420 (347678)
<b>Volume (n)</b>	24105 (38857)	25120 (39903)	26416 (40276)	30634 (41327)	32522 (44208)
<b>Rate generic prescribing(%)</b>	42 (42)	43 (46)	46 (47)	43 (49)	48 (50)
<b>Population</b>	9984	9706	9481	9080	8959
<b>Ave NIC/pat (£)</b>	15.46	19.61[27%]	23.88[22%]	28.36[19%]	33.64[19%]

**Table 8.2**

Source : Prescription Pricing Authority, study data

( ) represents FHSA average

\*\* data not available

[ ] annual percentage increase

## Practice 2

This is a small town semi-rural practice in West Hertfordshire. Its population, which has remained fairly static (Table 8.3), has a relatively high proportion of elderly (ie. +12%). This group however has, according to the practice, not contributed any more than expected to practice drug spend. The practice data supports these claims and reveals no significant increases in either value or volume of NICs in those categories usually associated with illnesses of the elderly such as, cardiovascular, musculoskeletal and respiratory. Since the reforms the practice believed it had prescribed along historical lines and expected its prescribing data to reflect this by showing a constant rate of increase in drug spend.

The practice claimed it was 'severely underfunded' in its first year fundholding drugs budget and this contributed significantly to its end of year overspend. This may be true but, without further information about the FHSA's calculation of their budget it is difficult to determine the reality of these claims within the scope of this study. However, it is perhaps unfair and unsafe to blame the apparent 'underfunding' solely for the practice's overspend. The data for that year and indeed, for the second year of the reforms shows that contrary to the practice's descriptions the annual rate of increase was faster post reforms. There was a marked increase in the value and volume of NICs prescribed in the first year of the reforms (Table 8.3). Moreover, despite a fall in the rate of increase in 1992/93, it was still higher than pre reform rates. This suggests the practice's financial position at the end of the year was not simply a result of 'underfunding'.

This faster rate of increase post reforms appears to result from a combination of factors. Firstly there is evidence to support the practice's claims of a shift in hospital

prescribing (Chapter 5). Although unable to give exact numbers of 'expensive' patients registered with the practice they did cite the case of Zoladex (Chapter 5) at £125.40 per month (ie. £1,501.80 annually). In comparison in 1991/92 the average cost per patient per year was £44.00 (Table 8.3). Secondly, at least one of the practice's cost-containment strategies may have contributed directly to increases in drug spend. The practice had begun to make use of a local hospital formulary. However, hospitals enjoy special concessions on drugs which general practices do not. Thus, drugs on the hospital formulary drugs are not necessarily cheaper to the community.

Nonetheless, some of the practice's cost-containment policies were successful containing drug spend to some degree. The use of a limited list for antibiotics resulted in spend, in two out of three years (ie. 1990 and 1992), falling below the previous year's total spend. However, this also coincided with a fall in the annual rate of growth in volume of NICs prescribed. One of the more successful strategies was its policy to prescribe more generic preparations. The practice not only had a history of prescribing above the FHSA average in terms of generic prescribing but achieved a greater rate of increase overall during a four year period (1989-92, Table 8.3).

The most significant increase occurred in the second year of the reforms (Table 3) when the rate of generic prescribing increased by 19 percentage points compared with an FHSA average increase of four percentage points. Prior to 1992 the practice's annual rate of increase appeared to be more or less constant and reflected the FHSA average trend. This sharp increase in 1992 may help to explain the reduction in the rate of expenditure growth in year two of the reforms and, the practice's ability to reduce its percentage overspend in the second year drugs budgets by nearly half that of the first year (ie. from 16% (1991/2) to 9% (1992/3)).

	1989	1990	1991	1992
<b>Budget (£)</b>	**	**	464055	536900
<b>Spend (£)</b>	403637 (433448)	441769 (484132)	539144 (565359)	627393 (635975)
<b>Volume (n)</b>	64326 (71968)	64540 (74069)	71942 (78977)	74092 (82398)
<b>Rate generic prescribing (%)</b>	44 (43)	46 (45)	47 (47)	63 (51)
<b>Population</b>	12380	12441	12252	12203
<b>Ave NIC/pat (£)</b>	32.60	35.51 <sub>[9%]</sub>	44.00 <sub>[24%]</sub>	48.11 <sub>[9%]</sub>

**Table 8.3**

Source : Prescription Pricing Authority, study data

( ) represents FHSA average

\*\* data not available

[ ] annual percentage increase

### **Practice 3**

This small town, semi-rural practice borders on Bedfordshire and Buckinghamshire and is close to a new town and growing industrial area. Its patient population has nonetheless remained fairly static (Table 8.4). The practice expected its prescribing data to be higher than the FHSA average because of its active disease management policy of the last ten years. This has not only led to the practice identifying a number of expensive patients (Chapter 5), but also to it expecting its data to reflect its apparent demise, showing it to becoming less efficient and less well managed. This insight into practice prescribing in relation to the local average appeared quite realistic.

The data shows that over a four year period (1989-92) the practice spent fractionally more than the FHSA average (ie. 0.3%), although it did prescribe 15% fewer items. This suggests an overall practice tendency to prescribe relatively more expensive items than the FHSA average. Between 1989-92

the practice achieved a reduction in the rate of increase in expenditure and, stabilized the rate of increase in volume in the two post reform years. This was contrary to the FHSA average trend which displayed a much faster rate of increase in both spend and volume of NICs since 1989. These prescribing trends show that the practice has been able to achieve a reduction in the average cost per patient over the last four years. This is important in view of its need to treat an increasing minority of the population who are classified as expensive.

For example, the average cost per patient per year in 1991/92 was £50.30. This compared with £9,000 plus annually for one transplant patient needing drug therapy (2 patients). In addition, there was £1,504.80 per patient annually for the cancer treatment Zoladex (6 patients), and £6,528 per patient annually on another cancer treatment Estrocyte (1 patient). There were in addition to these, an unspecified number of hypertensive patients requiring treatment. Although the practice can claim some of these costs back (anything in excess of £2,000 (Chapter 4)) it is nevertheless, still facing a large expenditure for only a few patients.

In 1987 the practice introduced its own drug formulary and revised it in 1990. The introduction of this formulary may help to explain the practice's ability to contain the annual rate of expenditure growth in a number of drug categories at a time when volume was increasing. For example, the practice identified and subsequently treats a number of patients suffering from hypertension however, expenditure growth on cardiovascular drugs has been less than volume ie. 3% compared to 19% respectively. This pattern of growth was also contrary to the local average trend whereby, expenditure exceeded volume at 39% and 23% respectively.

Musculoskeletal drugs was the only other category to demonstrate an ability to contain drug spend. Expenditure in this category fell by 16% in four years despite a 10%



this category fell by 16% in four years despite a 10% increase in the number of items prescribed. This low growth in practice spend resulted from successive reductions in spend since the introduction of the practice formulary in 1990. There was however, a general tendency in the area for musculoskeletal drugs to display better cost restraint. The FHSA average showed a rise in spend of 2% compared with an increase in volume of 5%. However, the practice data showed a greater capability to contain costs. This figures were even more surprising given the high proportion of elderly within the practice's patient population (ie. 15%).

Historically, the practice has displayed a lower than average rate of generic prescribing. In addition, it has one of the lowest rates in the study (Table 8.4). In the two years prior to the reforms this rate of prescribing remained constant and just over one-fifth of all prescriptions were for generic preparations (Table 8.4). However, since the reforms there has been a marked increase in the annual rate of generic prescribing which has also exceeded the local average growth, though it still remains less. This increase is somewhat surprising because of the practice's decision to reject a policy to prescribe more generics (Chapter 5).

Despite the practice's degree of achievement in containing growth in drug spend, they have been unsuccessful in keeping spend within a cash-limited budget. This is the second practice to demonstrate an increase in the percentage overspend in the first and second years of the Reforms. In the first two years of fundholding the practice exceeded its drugs budget. Not only that, it demonstrated an increase in the percentage overspend in the second year. Thus, in 1991/2 practice overspend was 7%, this rose to 12% in the second year.

### Prescribing Data : Practice 3

	1989	1990	1991	1992
Budget (£)	**	**	435568	448307
Spend (£)	396980 (374634)	420671 (411940)	464033 (462758)	503200 (530591)
Volume (n)	55422 (66004)	56212 (66653)	60211 (67812)	64384 (77927)
Rate generic prescribing (%)	22 (32)	22 (31)	27 (35)	33 (38)
Population Ave NIC/pat (£)	9168 43.30	9186 45.79 <sub>[6%]</sub>	9226 50.30 <sub>[10%]</sub>	9381 53.64 <sub>[7%]</sub>

**Table 8.4**

Source : Prescription Pricing Authority, study data

( ) represents FHSA average

\*\* data not available

[ ] annual percentage increase

### Practice 4

This outer London practice displays many of the characteristics of an inner city practice. It is in an area of high unemployment and increasing deprivation. Its patient population is predominantly Jewish and this has led the practice to agree to take part in a scheme offering surgery times to fit into religious worship (Chapter 5). Consequently, the practice expected its prescribing data to reflect these changes by showing an increase in drug spend and number of items prescribed as demand increases. Unfortunately, the practice was unable to provide any data for the period prior to the 1991 NHS reforms. It was therefore not possible to compare pre reform prescribing with post Reform data. The following description therefore relates only to the prescribing trends since the reforms.

The evidence does not support practice claims of an increase in drug spend over the two years. In fact,

expenditure fell by 2% in the second year of fundholding (Table 8.5) despite a 20% increase in volume. In contrast, the FHSA average recorded an increase of 10% in drug spend but only a 0.6% increase in volume. The practice therefore showed a greater ability to contain drug spend overall than the local average. Despite this however, it displayed a 3% increase in the average cost per patient (Table 8.5) and possibly confirms the practice's anxieties about a shift in hospital prescribing costs.

The practice has achieved this overall restraint in drug spend by encouraging patients to buy over the counter treatments where possible. It has also relied on its own form of limited list (Table 8.1; Chapter 5) which, because it is on computer, avails each GP with quick and easy access to the most frequent and economical treatments prescribed by the practice. In addition, the practice has tried to prescribe generic preparations where possible. Well over half of all its prescriptions in the two years since the reforms were for generic preparations (Table 8.5) and this was markedly higher than the FHSA average trend. Moreover, they also displayed a faster rate of growth than the FHSA average in these two years.

These policies appear to have been responsible not only in reducing the annual rate of expenditure but of also ultimately containing practice drug spend within a cash-limited budget. In the first year of the reforms practice spend exceeded the budget by 7%. However, in the second year of fundholding the practice successfully achieved a spend of 2% within its budget.

#### Prescribing Data : Practice 4

PRACTICE 4		
	1991	1992
<b>Budget (£)</b>	341000	367000
<b>Spend (£)</b>	365357 (547013)	358498 (601820)
<b>Volume (n)</b>	55904 (102365)	67026 (102992)
<b>Rate generic prescribing (%)</b>	60 (45)	62 (45)
<b>Population</b>	13526	12904
<b>Ave NIC/pat (£)</b>	27.01	27.78 <sub>[3%]</sub>

**Table 8.5**

Source : Prescription Pricing Authority, study data

( ) represents FHSA average

\*\* data not available

[ ] annual percentage increase

#### Practice 5

This is a small town/semi-rural practice in South East Hertfordshire. Its patient population is highly transient, a mix of young couples with small children, and an increasing proportion of elderly (Chapter 5). For a number of years the practice has implemented an active disease management policy which has subsequently led it to identify a number of patients who are classified as expensive. In addition, the practice expressed concerns about the effects on drug spend in response to the shift in hospital prescribing. It cited the cases of six 'expensive' patients with an average annual cost per patient of £9,250 plus (1991/92) compared with an average cost per patient of £43.78 (Table 8.6). The practice estimated these six patients represented only 0.0034% of the patient population but account for 2% of the annual drug spend (Chapter 5). This is particularly worrying because, as the practice

continues with its disease management policy and meets the new contractual requirements set out by the reforms, it will identify more 'expensive' patients. It has already begun to show a faster rate of increase in average cost per patient since 1990 (Table 8.6) and does not bide well for future expenditure.

In the two years prior to the reforms the practice demonstrated a reduction in the annual rate of increase in drug spend which was contrary to the FHSA average. However, since the reforms this pattern has reversed and practice spend has increased at a faster rate than before.

Growth in the number of items prescribed meanwhile fell in the second year of the reforms but this pattern was similar to that of the two previous years (Table 8.6).

Despite its disease management policy practice prescribing over the last five years was fairly typical of the FHSA average. The practice spent only 6% more and prescribed fractionally fewer items (ie. 0.7%) than the FHSA average. It was however, more successful in containing its overall growth between 1988 and 1992, spending an additional 82% (real term growth was 39%) for 52% more items compared with an FHSA average spend of 105% (real term growth was 56%) and volume growth of 52%.

The practice's ability to restrain its overall growth in comparison to the FHSA average appears to result from the broad range of cost-containment policies it implemented (Table 8.1). These include a practice formulary, a policy on generic prescribing, the use of diagnostic protocols and so on. A 23% rise in patient population together with a number of other factors (Chapter 5) resulted in a large increase in volume of NICs of certain categories. Expenditure however did not rise accordingly. Drugs prescribed for cardiovascular and musculoskeletal illnesses, these are often associated with the elderly, displayed a higher overall growth in volume compared with

expenditure. In fact, musculoskeletal drugs displayed a volume growth nearly eight times greater than expenditure. Moreover, the annual rate of expenditure fell in post reform years despite a constant annual rate of increase in terms of volume. These patterns of growth did not reflect the FHSA average.

Traditionally, the practice has demonstrated a marginally higher annual rate of generic prescribing than the FHSA average. In 1988 over one-third of all prescriptions were for generic preparations, this rate increased steadily on average by three percentage points. The first year of the reforms witnessed an increase of six percentage points in comparison in the annual rate of generic prescribing. By 1992 the annual rate of generic prescribing had risen by 15 percentage points and over one-half of all prescriptions written by the practice were for generic preparations.

Despite the broad range of policies aimed at restraining growth there are instances when these proved unsuccessful. The most striking example being drugs prescribed for the central nervous system which include anaesthetics and painkillers. The practice conducts its own minor surgery on site (Chapter 5 and Appendix A) and therefore has an increased need for anaesthetics and painkillers. Over a five year period this category displayed a 232% increase in expenditure and a 62% increase in volume. This category was by far the fastest growing both in terms of practice and FHSA average. Practice expenditure growth however, was higher than the FHSA average growth of 136% and the rate of increase in both value and volume of NICs rose faster post reforms.

Despite its range of policies the practice was unable to contain its drug spend within a cash-limited budget. However, it did manage to achieve a constant rate of overspend since the reforms (ie. 15%).

### Prescribing Data : Practice 5

	1988	1989	1990	1991	1992
<b>Budget (£)</b>	**	**	**	681575	806224
<b>Spend (£)</b>	507566 (444166)	584593 (521347)	665610 (619311)	781385 (769087)	926182 (911324)
<b>Volume (n)</b>	78482 (77843)	87103 (86548)	95377 (94729)	107159 (107373)	115869 (118058)
<b>Rate generic prescribing (%)</b>	41 (38)	44 (41)	48 (44)	54 (46)	56 (51)
<b>Population</b>	15133	15824	16879	17848	18613
<b>Ave NIC/pat (£)</b>	33.54	36.94 <sub>[10%]</sub>	39.43 <sub>[8%]</sub>	43.78 <sub>[11%]</sub>	49.76 <sub>[14%]</sub>

**Table 8.6**

Source : Prescription Pricing Authority, study data

( ) represents FHSA average

\*\* missing data

[ ] annual percentage increase

### Practice 6

Practice 6 is a small thriving market town in East Anglia. The practice described its historical prescribing as being higher in terms of value and volume of NICs than the FHSA average. Although it believed it tended to prescribe cheaper items. The data however contradicts these descriptions and shows the practice did indeed spend and prescribed more items than the FHSA average (ie. 13% and 13% respectively). Thus, its average cost per item tended to be about the same as the FHSA average, not cheaper as expected.

Over a four year period the practice was fairly typical of the FHSA average in terms of overall growth, both in value and volume of NICs prescribed. Since 1990 there has been an increase in the annual rate of expenditure, the largest increase occurring between the year immediately prior to

and, the first year of the reforms. This was also true of the FHSA average. The pattern of volume growth was however different from expenditure and showed only a slight increase in growth in the second year. In the two previous years there was a constant rate of increase. The same was again true of the FHSA average.

In 1990 the practice introduced its own formulary and a policy to prescribe more generic preparations (Table 8.1). However as the data illustrates, these proved unsuccessful in containing drug spend. Given the practice's difficulty in implementing its policy on generic prescribing (Chapter 5), it is not surprising it experienced difficulties in restraining expenditure growth. Nonetheless, despite these problems the practice displayed and maintained a significantly higher rate of generic prescribing than the FHSA average (Table 8.7).

This practice did not contain its expenditure on drugs within a cash budget. Moreover, it is the third practice to show an increase in its percentage end of year growth. In its first year of fundholding the practice spent close to its budget (Table 8.7) displaying only a 3% overspend. However, in its second year its inability to contain costs resulted in an overspend of 8%.



**Prescribing Data : Practice 6**

	1989	1990	1991	1992
<b>Budget (£)</b>	**	**	675601	758365
<b>Spend (£)</b>	537848 (611193)	600166 (687063)	698266 (791657)	817418 (912714)
<b>Volume (n)</b>	121719 (108253)	130757 (113425)	139945 (126203)	151077 (133464)
<b>Rate generic prescribing (%)</b>	40 (30)	41 (31)	40 (28)	40 (28)
<b>Population</b>	13538	13587	13800	13825
<b>Ave NIC/pat (£)</b>	39.73	44.17 <sub>[11%]</sub>	50.60 <sub>[15%]</sub>	59.13 <sub>[17%]</sub>

**Table 8.7**

Source : Prescription Pricing Authority, study data

( ) represents FHSA average

\*\* data not available

[ ] annual percentage increase

**Practice 7**

This outer London practice is typical of many inner city practices. There is high unemployment amongst its patient population and increasing deprivation in the area. The practice claimed these and other factors (Chapter 5) made its patients very high users of their services. This in turn placed greater pressure on the doctors to prescribe. Consequently, the practice expected its data to show a higher than average rate of volume prescribing. Although, because of its policy to prescribed cheaper alternatives, they expected expenditure data to reflect increases in response to greater volume output rather than, increases in the relative price per item prescribed. The data shows these perceptions are, to some extent, realistic.

Between 1989 and 1992 the practice prescribed 27% more items and spent 22% more than the FHSA average. Thus, their average cost

per item prescribed was cheaper as expected. Moreover, growth in overall volume of NICs was greater than expenditure growth (ie. 25% and 18% respectively). These figures provide evidence to support the practice's claim that it has a policy of prescribing cheaper alternatives. Practice insight into prescribing trends was again proved realistic when its overall growth figures were compared with the FHSA average. The FHSA's average expenditure growth was 33% and volume rose by 7% overall.

Since 1990 the annual rate of increase in practice spend has fallen and, after a rise of 22% in volume in 1990 its annual rate of increase fell sharply in the first year of the reforms to just 1% and remained constant in the following year. Consequently, since 1990 the practice has been able to achieve a reduction in the growth in the average cost per patient per year. Moreover, in the second year of the reforms the practice actually spent less per patient than in the previous year (Table 8.8).

This is quite an achievement given the demanding nature of its patient population and, also because it has implemented very few cost-containment policies (Table 8.1). The practice was conscious of its potentially spiralling expenditure on drugs even before the reforms and had instituted a policy to prescribe cheaper alternatives. However, this did not necessarily mean prescribing only generic preparations and as Table 8.8 shows, the practice prescribed below the FHSA average in the two years prior to the reforms. However, with the implementation of fundholding and the need to contain spending within a budget, the practice moved towards a more rigorous policy of generic prescribing. This appears to have contributed significantly to the rapid increase in the overall rate of generic prescribing which did not reflect the FHSA average trend.

Despite a reduction in the rate of expenditure the practice was unable to contain its drug spend within either its first or second year budgets. It was however, one of the few practices

in the study to reduce its percentage end of year spend in the second year to 4% over budget compared with an excess of 10% in the first year (Table 8.8).

**Prescribing Data : Practice 7**

	1989	1990	1991	1992
<b>Budget (£)</b>	**	**	558006	613000
<b>Spend (£)</b>	537869 (419566)	586722 (465342)	615483 (498619)	635324 (559542)
<b>Volume (n)</b>	87052 (77954)	106286 (80216)	107784 (80613)	109006 (83490)
<b>Rate generic prescribing (%)</b>	35 (38)	39 (40)	49 (42)	58 (43)
<b>Population</b>	15203	14180	12938	13382
<b>Ave NIC/pat (£)</b>	35.38	41.38 <sub>[17%]</sub>	47.57 <sub>[15%]</sub>	47.48 <sub>[-0.2%]</sub>

**Table 8.8**

Source : Prescription Pricing Authority, study data

( ) FHSA average

\*\* data not available

[ ] annual percentage increase

## **Practice 8**

This small town partnership in the South East commuter belt was fairly typical of its FHSA average in terms of overall prescribing trends (ie. value and volume of NICs prescribed) and growth. Over recent years it has witnessed an increase in redundancy and unemployment amongst its patient population and has subsequently noticed an increase in the number of prescriptions for anti-depressants (central nervous system (CNS)). Moreover, its awareness of a multiple pathology particularly amongst its large elderly population (Chapter 5) led to it expecting the data to reflect a rise in anti-inflammatories (musculoskeletal) prescribed. The practice also expressed concerns about the effects on its drug spend because of a shift in hospital prescribing costs. It had already

identified at least six expensive patients (Chapter 5) whose average annual cost were in excess of £9,250 (1991/92) compared with an average patient cost of £52.52.

In the first year of fundholding the annual rate of increase rose both in terms of value and volume of NICs, but more so in terms of number of items prescribed. However, the practice was able to contain its growth compared to the FHSA average. Despite reducing its annual rate of growth in the second year of fundholding (ie. value and volume of NICs) this was less than the FHSA average. Practice expectations about an increase in drugs prescribed for musculoskeletal disorders were realistic in terms of volume prescribed. Between 1989 and 1992 musculoskeletal drugs were identified as the fastest growing in terms of volume although, the slowest in terms of expenditure. The majority of this growth however occurred pre reforms.

CNS drugs however displayed a reverse pattern of growth despite practice expectations. This category was the slowest growing in terms of number of items prescribed but the fastest growing in terms of spend. Post reform expenditure growth was more rapid compared to volume growth and unlike musculoskeletal drugs. However, caution must be observed when interpreting this data because, anti-inflammatories and anti-depressants are only two types of drugs in otherwise large drug categories. Other drugs prescribed from these categories may be responsible for prescribing trends but, without closer examination of the more detailed prescribing data (PACT level 3), it is impossible to determine the exact effects of single drugs on prescribing trends.

The practice's ability to restrain expenditure growth post reforms compared to the FHSA average is likely to reflect the practice's use of a limited list for certain drug types rather than its policy encouraging greater use of generic preparations. There is some doubt as to the practice's commitment to this last policy because of its below average annual rate of generic prescribing over a four year period (Table 8.9). It also had

the lowest annual rate of generic prescribing in the study. There was however, something of a marked increase in the second year of the reforms compared to previous years.

Given its increase in spending in the first year of fundholding it is not surprising that the practice overspent on its first year budget (ie. 16%). What was perhaps more surprising was that it not only exceeded its second year drug budget but, also increased its percentage overspend to 17%. This was despite a fall in the year's annual growth rate.

**Prescribing Data : Practice 8**

	1989	1990	1991	1992
<b>Budget (£)</b>	**	**	593508	664300
<b>Spend (£)</b>	561428 (527799)	611829 (578886)	690918 (679736)	776284 (740438)
<b>Volume (n)</b>	89319 (91076)	92463 (92258)	97539 (98219)	99740 (100039)
<b>Rate generic prescribing (%)</b>	22 (31)	23 (32)	23 (32)	28 (34)
<b>Population</b>	13683	13426	13155	13137
<b>Ave NIC/pat (£)</b>	41.03	45.57 <sub>[11%]</sub>	52.52 <sub>[15%]</sub>	59.09 <sub>[13%]</sub>

**Table 8.9**

Source : Prescription Pricing Authority, study data

( ) represents FHSA average

\*\* data not available

[ ] annual percentage increase

### Summary

This chapter examined the prescribing trends of eight GP fundholding practices and their attempts to contain drug spend within a cash limited budget. From the limited data available the study found that over a period of at least three years, four practices reduced their level of expenditure growth but, three

practices appeared to increase their annual rate of expenditure. There was insufficient data on the remaining practice to make this kind of conclusion. It is however unsafe to look at cost-containment purely in terms of expenditure because, any changes may merely be a response to changes in volume rather than cost restraint.

A more realistic and reliable measure of cost-containment is average cost per patient. An examination of this data reveals that only two practices achieved a reduction in the annual rate of increase. One of these practices actually reduced its average spend per patient to below the previous year's. One practice increased its rate of growth, the remaining four practices displayed an increase in the first year of fundholding but this was followed by a reduction in the rate of growth in the second year. Thus it appears two practices rather than four were actually beginning to achieve some level of cost-restraint.

Most practices had introduced a range of cost-containment measures mostly after they became fundholders and, in many cases these were elaborate ones. Interviews with FHSA managers however, suggested this intensity of action was not to be found in non-fundholding practices. In combination, these measures seemed to have reduced the rate of expansion below that found in the FHSA as a whole. At this level of study it is difficult to determine which of these measures proved the more successful in helping to contain drug spend. In order to determine what the most effective strategy for GPs to follow as a mechanism to curb drug spend needs a much larger study with a matched control group of GPs. This would measure the differential effects of different strategies. Although this is an elaborate research design, it is one which this study thinks might be useful to conduct.

The data also confirmed practices' fears that hospitals were beginning to shift their prescribing costs over to general practice. This is obviously a very important consideration to

practices trying to work within a cash limited budget and, to those setting the budgets. This subject is set to become even more of an issue in the next year or so because of the future changes in the policy regarding expensive patients. This will be discussed in more detail in the next chapter. This chapter completes the review of the data and brings to a close the study's investigation into the effects of cash limited budgets and financial incentives on GP generated prescribing costs. All that remains now is, to review the findings and determine whether the study met its aims and objectives and to see what changes to expect in the future of fundholding.

## Chapter 9

A review of the past and a look to the future



## **Reasons for controlling drug spending**

Primary health care is one of the fastest growing elements of National Health Service (NHS) spending and until recently it was non cash limited, unlike hospital and community services.

Within primary health care, pharmaceutical costs were rising the fastest and between 1975 and 1992 drug expenditure rose by 978% (150% in real terms). Volume growth, taking account of the rising price of drugs, rose by 40%. The rapid economic growth of the 1950s/60s and the level of health spending made it possible to support a fast growing budget. However, the change in the economic climate of the 1970s/80s led the government to seek ways to cutback its rising spending on public and social programmes, including health care.

Reducing expenditure on pharmaceuticals was an attractive target in political terms. Although labour costs in any health care system account for the largest proportion of spending, personnel are often well organized, very vocal and enjoy a high level of esteem. Pharmaceutical companies on the other hand, evoke quite different feelings. They are perceived as exploiting man's needs and indeed, his right to receive drug therapy and thus achieve optimum health. They are accused of profiteering from illness and disease and of manipulating the market to ensure monopoly and consequently high profits. Hence, to attack the drug budget appears a popular and easy solution to a persistent problem. This study investigated the impact of government attempts to contain expenditure growth on GP prescription drugs over the last seventeen years. Particular attention was focused on the effects of GP fundholding.

## **The nature of the market and the difficulty of controlling it**

The pharmaceutical market is unique. Demand is determined by patterns of illness, social and demographic factors and attitudes towards therapeutic delivery. Demand for pharmaceuticals is very specific. Specific drugs are taken to treat specific conditions and, for every illness there must be a choice of alternative medicines. Consequently, the market is large and highly fragmented. Most of the industry's products are available only on a doctor's prescription. This denies the consumer demander his/her right of choice and thus sovereignty. Instead, doctors adopt the role of demander and so their beliefs and attitudes become of paramount importance.

The inclusion of a third party or monopsonist purchaser further complicates the demand model because it isolates both the primary and secondary consumer from the source of payment. Thus, any direct interest in either economy or the cost of their actions is removed from these demanders. The industry is therefore, relatively insensitive to price and the third party payer has little or no control over what is prescribed and at what cost. Thus, the purchaser is faced with problems of changing consumer attitudes towards prescriptions and prescribing and, regulating the prices charged by the industry if he/she desires to control expenditure.

## **Regulation of the industry**

Regulation of industry prices, or more specifically industry profits, has been one of the most actively sustained measures of cost-containment adopted by the UK government. The decision to regulate profits arose because of the government's dual role in the pharmaceutical industry. On

the one hand, as a monopsonist purchaser of a privately produced product it wanted to keep prices down. On the other hand, it was responsible for maintaining a lucrative UK export industry which required prices to be kept at a profitable level. Thus, by controlling the profitability of companies the government believed it could achieve these two aims. Each year a company must negotiate with the Department of Health (DoH) the permitted rate of return on capital based on their UK sales to the NHS in the previous year.

Provided the company adheres to this fixed rate it is given the freedom to set its own prices for new product entry into the market. The effects of government regulation of prices and profits in the industry brought about the most change in expenditure growth from the 1960s up to 1983.

### **Changing attitudes**

The government turned next to changing the prescribing habits of GPs. Attitudes are however, the most difficult to change. Historically mechanisms of regulation were based on the use of deterrents as a way of influencing patient demand and prescriber's attitudes. In terms of professional regulation, GPs were 'educated and informed' about the benefits of more cost-effective prescribing. The underlying threat that 'frivolous and/or excessive' prescribing would be punishable by financial penalties was nonetheless, never very far from this type of regulation. Control of the patient demander was however more instantaneous, more direct, it went straight for the wallet. Users were required to pay a prescription charge or copayment. This use of deterrents however lacked any real incentives or sanctions to change doctors' behaviour. Few GPs were ever penalised for their behaviour and, despite a policy of regular increases in prescription charges to patients, cost-sharing was essentially ineffectual because of

the large number of prescriptions exempt from a charge. Prescription charges' ability to restrain volume demand for medicines therefore was severely limited.

### **Generics**

A combination of industry, profession and consumer regulation succeeded in reducing the growth in expenditure at a time when the general rate of inflation was increasing. 1983 marked the beginning of change. This was the year the government put a price freeze on medicines and the Greenfield Report recommended the greater use of generic preparations, local formularies and a restricted list of prescribable items. The effects were instantaneous. Growth in expenditure was reduced to one of the lowest levels in years as a result of more generic prescribing. Two years later even stricter government measures were introduced which limited what doctors could prescribe and introduced price cuts to drugs sold to the NHS. These four measures further reduced expenditure as the rate of generic prescribing increased rapidly and, stabilized the share of NHS money devoted to prescription drugs. At the same time however, volume began to increase. As a consequence, the government attempted to influence the level of prescribing by direct action at the profession.

### **Direct incentives**

It had been established that deterrents were ineffectual in influencing GPs' attitudes towards prescribing on a grand scale. GPs needed more of an incentive to change their behaviour. The subsequent decision to offer GPs financial incentives was based on the assumption that, if GPs were offered more freedom in the use of larger budgets they might be more likely to accept a cash limit on their whole

allocation of funds including prescription drugs. Thus, for the first time the government sought to influence GP prescribing behaviour through cash limited budgets.

### **Fundholding and its impact**

Under the new structure two types of general practice emerged, fundholding and non-fundholding. Fundholding practices were given a cash limited budget comprising a hospital element, pharmaceutical (drug) element and, an amount to cover staff costs. This gave practices the freedom to use this combined budget flexibly and acted as a powerful incentive to save on one element of the budget and reinvest the money in other aspects of patient care. This scheme also carries a high and immediate price for failure to control spending. Any budget overspend requires immediate compensation from another element of the practice budget.

Non-fundholding practices on the other hand, receive only a target budget (Indicative Prescribing Amount (IPA)) which covers prescribing costs only, and rely on their District Health Authority to purchase hospital services on their behalf. Subsequently, little has changed for them in terms of purchasing services and paying for those services. Hence, they do not suffer the same worries about overspending as fundholders or the Family Health Service Authority (FHSA). Non-fundholding practices are nonetheless expected to stay within their target budget but, any overspend will be met out of the FHSA's firm budget. FHSAs constantly face the very real fears of overspending on their firm budget as a result of their non-fundholding practices continuing to prescribe along historical lines with little regard for costs. Their only real weapon is their contact with GPs and persuasion.

## **Introducing incentives**

These different incentive structures were illustrated in the study. Two out of three FHSAs overspent on their firm budgets in the first and second year of the reforms. More importantly, these overspends were essentially a direct result of non-fundholding practices exceeding their IPAs. Moreover, not only did they exceed their IPAs but increased their annual percentage overspend in the second year, thus further increasing the FHSAs' overspend in the second year of the reforms. However, it is wrong to assume that GP fundholders did not exceed their budgets too. They did, however their overspend was less than non-fundholders and they were successful in keeping nearer to their budgets than non-fundholding practices. Moreover, their overspend had to be financed by savings from elsewhere in their budgets.

This study and others (Bradlow & Coulter 1993; Burr, Walker & Stent 1992) clearly indicates fundholding was largely more successful than non-fundholding in containing drug expenditure. This resulted from fundholding practices implementing a range of cost-containment policies; an intensity of action not matched by non-fundholding practices. Both studies found that in combination these strategies were successful in reducing the rate of growth below the FHSA as a whole. Nonetheless the majority of fundholding practices in this study still overspent on their budgets. This however, contrasted with Bradlow and Coulter's study. Thus, this failure by both schemes to contain drug spend within a target amount raises the question of, whether or not budgets were set at the right at the right level in the first place.

## **New formulae**

In the first two years of the reforms the DoH forecast the annual national expenditure on prescription drugs. It then notified individual Regional Health Authorities (RHA) of their likely spend and that of their FHSAs and allocated firm budgets accordingly. Each budget took into account the age structure of the FHSA population together with other demographic and social factors and the projected drug spend based on historical spending patterns. However, this formula was criticised for its failure to reflect accurately individual FHSA or practice needs. This led to one RHA successfully challenging the Department's national formula.

This RHA forecast spending based on specific practice expenditure data for designated time periods rather than the Department's average overall estimate of rising demand. The Region's formula incorporated individual practice variations in association with the FHSA as a whole. It combined a bottom-up strategy which attempted to reduce the level of variation between practices whilst, remaining responsive to individual practice needs. At the same time it kept within a uniform overall rate. The success of this formula was graphically illustrated by one of its FHSA's end of year spend. It was the only FHSA in the study to successfully spend within its cash limited budget in the first year of the reforms. However, when the FHSA was forced to accept the Department's calculated budget in the second year of the Reforms, it exceeded its budget.

The failure of the national formula and in response to the many criticisms raised led the government to reconsider its method of calculation. This use of historic costs, adjusted for price and volume changes and local factors were designed to allow flexibility in setting amounts. However, they often

resulted in considerable variations in allocations per head and, in the level of year on year increases for individual practices. Addressing this issue of equity the government has sought to make changes in the way the population is defined. Without this, practices with traditionally high prescribing costs will continue to be awarded higher amounts than low prescribers without any analysis of patients' needs.

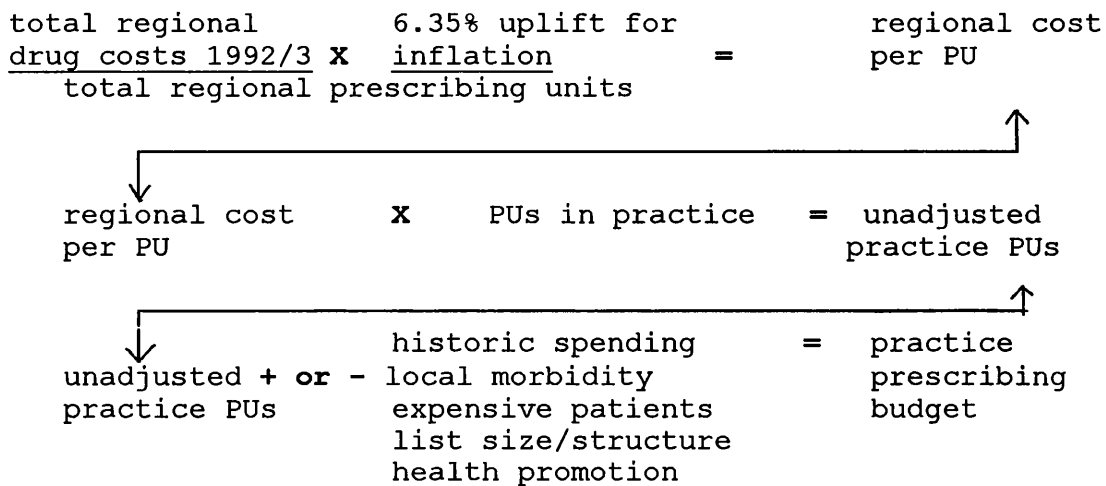
### **The Future of GP fundholding :**

#### **The new weighted capitation system**

One of the major problems with the existing system has been trying to control a budget based on historic costs. This method of budget setting has served only to reward high spenders with a bigger budget each year. Consequently, early in the life of the reforms the DoH was determined to find a more satisfactory way of allocating money which is devoid of any adverse incentive to GPs to 'inflate' their prescribing costs. A revised formula for setting drug budgets and IPAs has now been defined by the Leeds University Prescribing Research Unit which calculates and allocates money to a practice based on the number of patients in a practice and the local average spending per patient.



### THE 1994/5 FORMULA



**Figure 9.1**

Source : DoH

Reference : Prescriber 19 February 1993:24

The starting point for these new practice budgets, to be implemented in 1994/95, will be the regional average cost per prescribing unit adjusted for **Age, Sex and Temporary Resident** (ASTRO-PU <sup>1</sup>) times the number of prescribing units in each practice (Figure 9.1). The new system is a revision of the old capitation system and takes into account the varying prescription requirements and differential costs of males and females at different ages (Table 9.1). This new weighted capitation system is therefore more sensitive to differences in population structures between practices and is thus, more able to respond to those differences. For example, under the current system anyone aged under 65 years old is awarded a weight of one and counts as one prescribing unit, anyone over 65 years old is awarded a weight of three and counts as three prescribing units.

<sup>1</sup> The 'O' was added for syntax purposes and has no value.

The new ASTRO-PU differs because it has weightings for nine age bands for males, nine for females and one for temporary residents. As Table 9.1 shows, women start to become more 'expensive' from aged 15 during their reproductive years. Men however, catch women up after the menopause. The ASTRO-PU also identifies the much greater needs of the elderly and distinguishes between the differential demands expressed within the elderly group. Neither of these considerations had previously been taken into account. Thus, the system should satisfy those doctors with a very high proportion of elderly patients who felt previous calculations were insufficient.

**ASTRO PU**

Age Group (years)	Men	Women
0-4	1	1
5-14	1	1
15-24	1	2
25-34	1	2
35-44	2	3
45-54	3	4
55-64	6	6
65-74	10	10
75+	10	10
Temporary Residents	0.5	0.5

**Table 9.1**

Source : Leeds University Prescribing Research Unit

Reference : Prescriber 19 February, 1993:24

After the necessary calculations have been carried out the resulting figure provides an estimate of a practice's prescribing budget. However, it does not take account of factors such as historically high spending, local morbidity and the inclusion of 'expensive' patients on individual practice lists. These factors have to be considered separately by the FHSA medical adviser who will then determine how much the practice should get. His/her final estimate may be revised up or down and these revisions form the basis of discussion and negotiation between the practice and the medical adviser.

Criticism have however, already been expressed about the method of calculating the value of the regional prescribing unit. For example, the national figure calculated for the 1993/94 ASTRO-PU was £18 and represented an average between the highest and lowest regional estimates of £21 and £15 respectively. Under the new system all FHSAs, without exception, will receive £18 per ASTRO-PU. Consequently, there will be winners and losers. An FHSA which had historically been a £21 per PU FHSA will subsequently receive £1.5 million less in its budget. Somehow it has to distribute this budget which is less than previously, as adequately and fairly between its practices. As yet, there is no indication how FHSAs will distribute this fund.

Although this new system of budget setting was not due to be implemented until the 1994/95 financial year, practices received with their 1993/94 firm budgets and IPAs a record of another figure calculated under the ASTRO-PU system. This was intended to prepare GPs for the changes in 1994/95 by encouraging them to compare their current spending and progress throughout the year under the new system. However, during the term of this study all practice budgets and IPAs

were calculated using the 'old' formula. It was brought to my attention however, that at least one FHSA with practices participating in this study, calculated and implemented practice budgets and IPAs under the new weighted capitation system in 1993/94, a year ahead of the government proposed implementation.

### **Changes to the allocation for expensive patients**

One of the commonest anxieties expressed by GPs in the study and others (Chambers 1990; Chambers 1993; Bradlow & Coulter 1993) was that hospitals would try to keep within their cash limited budgets by shifting their drug costs over general practice. This study found evidence to confirm these anxieties and became aware of the serious implications for general practice budgets. Under the 1992 reforms practices were protected from the potentially crippling costs of expensive patients. This was done either by individual one off agreements between FHSAs and individual practices regarding or, on a more formula based agreement. For example, a £2,000 ceiling for any patient's drug spend per year was set by one region. However, at the time of writing of this thesis there was evidence to suggest that the value of this allowance was set to change in the near future (Hertfordshire Family Health Service Authority 1993).

Northwest Thames Regional Health Authority for example, changed its policy with regard to reporting 'expensive patient' to 'expensive drug' in 1993/94. Practices were required to report to the FHSA expensive drugs **'ie. where the cost of prescribing a single item exceeds £2,000 per annum and not where the cost of a patient's treatment exceeds £2,000 per annum'**. The implications of such changes are catastrophic not only in respect to the practice budget, especially in view of the shift in hospital prescribing costs

to general practice, but also in respect to patient care. Surely this new system only serves to encourage GPs to operate a system of adverse selection and reject or remove from their list a patient who requires expensive treatments ?

### **Future changes to professional regulation and the implications for the industry and patient care**

We have so far focused on future changes to the process of setting practice budgets and IPAs. These changes, however, will only be an indirect influence to GPs' behaviour. A number of other changes already implemented or proposed aim specifically to have a greater influence on GPs' prescribing choices with the ultimate aim of saving money. The first of these changes is the new incentive scheme for non-fundholding GPs. From 1994/95 non-fundholding GPs are, for the first time, being offered financial incentives by the DoH to cut their prescribing. These non-fundholding practices are being offered a cash (re)award (?) of up to £5,000 to reduce their prescribing costs. This scheme, unlike the 'old' scheme, does not assume GPs will behave altruistically. From the limited feedback of the GP fundholding scheme, the government has realised non-fundholding practices will only probably achieve savings if they too are given a cash incentive (Chapter 4).

Secondly, the NHS Management Executive has issued national targets for increasing generic prescribing and practice formulary levels (eg. 80% of all practices should operate a restricted drug formulary). Although the government views this as an attractive mechanism which will help to contain drug expenditure, it has serious implications for the industry. They argue (industry) that this measure does not give due regard to the inter-changeability of these products with the originator's product. Moreover, it is being

introduced without regard to the Pharmaceutical Price Regulation Scheme's (PPRS) negotiated levels of profits (and hence prices). Subsequently, it strikes at the heart of the process of negotiation and is seen as an essentially unilateral move by the government.

### **More regulation and rationing**

Finally, at the end of 1992 the government announced that it was considering extending to the Limited List and is currently reviewing 10 new categories. It is anticipated these extensions will be implemented in the mid 1990s. The extension of the Limited List will have a great impact on the industry but more importantly on the future of patient care. Many of these products will be banned from the NHS unless the companies agree to cut prices. However, these price cuts will be additional to the PPRS's overall 2.5% price cut of 1993.

It is likely companies in the future will not introduce new products in the UK in these ten therapeutic categories because of fear of 'blacklisting' or arbitrary price controls. Patients will therefore lose the potential for the best treatment available. Since the introduction of the Limited List in 1985 no new major products have been introduced in the UK in the seven therapeutic areas covered by that original List. When all these measures have been taken into consideration there can be little doubt that they will have a profound impact on the UK pharmaceutical industry. More importantly, they will have a detrimental effect on the introduction of new products for NHS patients.

In an attempt to redress the balance between removing certain drugs from the prescribable list, the government has made available to patients more drugs which can be purchased over

the counter and which were previously only under prescription. These include for example, Tagamet (a treatment for ulcers and other gastric-acid conditions) at a cost of £17.80 for 120 tablets which would be the equivalent to one month's treatment course. The length of treatment can last from between 1-2 months. Thus, the government is getting the patient to be responsible for more of the actual costs of his/her treatments.

### **Equity**

In summary, this study has suggested that GPs have to be given financial incentives to keep down their prescribing costs. At the moment fundholding practices are at a disadvantage as they suffer penalties for over spending which non-fundholders do not have applied to them. To be fair and reduce prescribing the principle that individual practices will benefit from staying within a cash limit would have to be extended to all practices in order to eliminate the present inequalities of the system. At the moment there is a two-tier system which is unfair to fundholders because, they are kept within a cash limited budget whilst all other practices have effectively greater 'freedom' to spend.

This issue of inequality must be addressed if fundholding is to stay. Otherwise, fundholders will begin to recognize a greater incentive in no longer being a fundholder. Subsequently, if fundholding was to discontinue the government would lose a large part of its capacity to regulate drug spend at GP level. Therefore, it is in their best interests to extend as far as possible the incentive scheme.

## **To ration drug spending or not ?**

Many people will be asking : 'should we be putting a cash limit on drugs anyway and, what effects does this have on patient health ?'. Given that the rest of the NHS is so tightly controlled, it would be unfair not to place some form of control on pharmaceutical spend. Moreover, unless there is some form of control on drug expenditure at general practitioner level, then the drugs bill would just continue to run out of control. As yet no-one is really clear about what the effects of these controls are on patient health. However, the GPs in this study were convinced that the imposition of a cash limited budget for drugs has not in any way had an adverse effect on patient health. This study recognizes the need for a longitudinal randomized control trial to be conducted to investigate the effects of cash limited drug budgets on patient health. The study acknowledges that such a study is beyond the realm of this research but believes it to be a worthwhile study for the future.



## References

- Abel-Smith B (1984)  
*"Cost containment in health care : a study of 12 European countries 1977-1983"*  
Occasional Papers on Social Administration No 73:1-73 Bedford Square Press, NCVO London
- Annesley E (1992)  
*"Practice formularies can stifle new ideas"*  
The Practitioner Vol 236:740-742
- Archer M (1985)  
*"What use is generic prescribing ?"*  
Journal of the Royal College of General Practitioners Vol 35:293-295
- Association of the British Pharmaceutical Industry  
*"Medicines and the Patent System"*  
White Crescent Press Ltd, Luton 1972
- Association of British Pharmaceutical Industry (1992)  
*"Pharma facts & figures"*  
APBI London
- Association of British Pharmaceutical Industry (1993)  
*"Pharmaceutical industry accepts new PPRS Scheme - with reservations"*  
Pharmaceutical News 26 August
- Ball D. (1989)  
*"Use PACT to keep an eye on your costs".*  
MIMS Magazine 15 September:101-102
- Ball DD. (1991)  
*"Implementing 'Improving Prescribing' and the Role of the Prescription Pricing Authority Information Services"*  
Journal of the Dispensing Doctors Association April Vol 7 (2):11-15
- Barr, N. (1987)  
*"Economics of the Welfare State"*  
Weidenfield & Nicolson, London
- Beardon, PHG. Brown, SV. (1987)  
*"Introducing a drug formulary to general practice - effects on practice prescribing costs".*  
Journal of Royal College of Practitioners Vol 37 No 300:305-307 London
- Begg D. (1984)  
*"Do patients cash prescriptions ? An audit in one practice"*  
Journal of Royal College of General Practitioners 34:272-274

- Begg D. (1984)  
"Do patients cash prescriptions ? An audit in one practice"  
Journal of Royal College of General Practitioners 34:272-274
- Berwick I. (1992)  
"The Squeeze on GP Drug Amounts May Tighten"  
Medeconomics February Vol 13 No 2:28-32
- Bevan G. Holland W. Mays N (1989)  
"Working for which patients and at what cost ?"  
The Lancet April 29:947-949
- Birch S. (1986)  
"Relationship between increasing prescription charges and consumption in groups not exempt from charges"  
Journal of Royal College of General Practitioners 36:154-156
- Blum, R. Herxheimer, A. (1981)  
"Pharmaceutical and Health Policy"  
 Croom Helm, London
- Bosanquet & Leese in Glennerster H. Matsaganis M. Owens P. (1992)  
"A Foothold for Fundholding : A Preliminary Report on the Introduction of GP Fundholding"  
 Kings Fund, London
- Bradlow J. Coulter A. (1993)  
"Effect of fundholding and indicative prescribing schemes on general practitioners' prescribing costs"  
British Medical Journal Vol 307:1186-9
- Broome, J. (1984)  
"Uncertainty and Fairness"  
The Economic Journal Vol 94:624-632
- British Medical Journal (1985)  
"Doctors, drugs and government"  
 Vol 290 23:880
- British Medical Association and the Royal Pharmaceutical Society of Great Britain  
"British National Formulary Number 21"
- Buchanan, JM. (1965)  
"The Inconsistencies of the National Health Service. A study in the conflict between individual demand and collective supply"  
 Rowan Press Ltd, Hertfordshire

- Burr AJ. Walker R. Stent SJ (1992)  
*"Impact of fundholding on general practice prescribing patterns"*  
The Pharmaceutical Journal October 24:R8
- Burstall ML. (1990a)  
*"1992 and the Regulation of the Pharmaceutical Industry"*  
IEA Health Series No.9 The IEA Health and Welfare Unit,  
 London
- Burstall, ML. (1990b)  
*"Indicative drug budgets for general practitioners : some doubts"*  
 In Culyer 'New Comprehensive Health Service' York:48-73
- Chambers P (1990)  
*"Hospital offloading - just a matter of costs ?"*  
MIMS Magazine 15 November:43-44
- Chambers P (1993)  
*"Where pressure on prescribing is hurting"*  
MIMS Magazine Weekly 19 October:46-47
- Chew, R. Teeling-Smith, G. Wells, N. (1985)  
*"Pharmaceuticals in Seven Nations"*  
 Office of Health Economics, London
- Chew, R. (1986)  
*"Health Expenditure in the UK"*  
 Office of Health Economics, London
- Chien, RI. (1979)  
*"Issues in Pharmaceutical Economics"*  
 Lexington Books, Washington.
- Cullis, JG. West, PA. (1979)  
*"The Economics of Health : An Introduction"*  
 Robertson, Oxford
- Deitch R. (1984)  
*"Commentary from Westminster : A Limited NHS Drug List"*  
The Lancet November 17:1166
- Department of Health (1978) Edition  
"Health and Personal Social Service Statistics for England"  
 HMSO London
- Department of Health (1982) Edition  
"Health and Personal Social Service Statistics for England"  
 HMSO London

Department of Health (1991)

*"Statistical Bulletin : Statistics of Prescriptions dispensed in Family Health Service Authorities : England 1982 - 1992"*  
Bulletin 4(6)91

Department of Health : Prepared by the Government Statistical Services

*"Statistical Bulletin (1991) : Prescriptions dispensed by pharmacy and appliance contractors. England 1979 - 1989"*  
Bulletin 4(6)91

Department of Health 1989 Edition

*"Health and Personal Social Service Statistics for England"*  
HMSO London

Department of Health (1989)

*"Working for Patients"*  
HMSO, London

Department of Health (1989)

*"Working for Patients : Practice Budgets for General Medical Practitioners"*  
Working Paper 3, HMSO, London

Department of Health (1989)

*"Working for Patients : Indicative Prescribing Amounts for General Medical Practitioners"*  
Working Paper 4, HMSO, London

Department of Health (1989)

*"Monitoring Indicative Prescribing Budgets"*  
Press Release 89/319 24 July

Department of Health (1989)

*"Drug Budgets Not A Substitute For Educating GPs on Prescribing"*  
Press Release 89/449 (Includes : 'Speech To The Office Of Health Economics. International Symposium Dinner'. Speech given by Baroness Hooper) 23 October

Department of Health (1990)

*"Government's Aim is to Promote Cost-Effective Prescribing, Says Kenneth Clarke"*  
Press Release 90/75 16 February

Department of Health (1990)

*"Improving Prescribing"*  
HMSO, London

Department of Health (1990)

*"Kenneth Clarke Publishes Further Guidance on the Indicative Prescribing Scheme for GPs"*  
Press Release 90/261 23 May

Department of Health (1991)  
*"Prescriptions dispensed by pharmacy and appliance  
contractors. England 1979 - 1989"*  
Statistical Bulletin 4(6)91

Department of Health (1992)  
*"Prescriptions dispensed by pharmacy and appliance  
contractors. England 1980 - 1990"*  
Statistical Bulletin 4(4)92

Department of Health  
"Health and Personal Social Services Statistics for England :  
1978, 1982, 1989, 1993 Editions"  
HMSO London

Department of Health (1993)  
*"Statistics of prescriptions dispensed in the Family Health  
Service Authorities : England 1981 - 1991"*  
Statistical Bulletin 1993/5 (March)

Department of Health (1993)  
*"Statistics of prescriptions dispensed in the Family Health  
Services Authorities : England 1982 to 1992"*  
Statistical Bulletin 1993/8 August

Department of Health 1993 Edition  
"Health and Personal Social Service Statistics for England"  
HMSO London

Department of Health 1993 Edition  
"Health and Personal Social Service Statistics for England  
(Table 7.1) "  
HMSO London

Doctor (1992)  
*"FHSAs Forecast Script Clampdown"*  
(17 September):3

Doctor (1992)  
*"Report hails doctors' prescribing rationale"*  
(24 September):10

Drugs & Therapeutic Bulletin (1990)  
*"Implementing a local prescribing policy"*  
Vol 28 No 24:93-95

Drug & Therapeutics Bulletin (1991)  
*"Constructing a practice formulary: a learning exercise"*  
Vol 29 No 7:25-26

- Dunlop, Sir Derek. (1971)  
"The Maurice Block Lectures 12. The problem of modern medicines and their control"  
 University of Glasgow Publications
- Feldstein, PJ. (1988)  
"The pharmaceutical industry"  
 In Health Care Economics:437-471  
 Wiley Medical Publication, New York
- Financial Pulse (1992)  
"Searching for a Realistic Script Budget"  
 Vol 7 (3):82-84 February 11
- Fundholding (1992)  
"Health chiefs bring in capitation formula"  
 April 7 Vol 1 No 9:6
- Fundholding (1992)  
"Will fundholders have to cut down on prescribing ?"  
 Vol 1 No 20:8-9
- Glennerster H. Matsaganis M. Owens P. Hancock S. (1994)  
"GP Fundholding : Wild card or winning hand ? in Evaluating the NHS Reforms"  
 Edited by Robinson R. & Le Grand J. Kings Fund Institute, London
- Glennerster H. Matsaganis M. Owens P. (1992)  
"A Foothold for Fundholding. A preliminary report on the introduction of GP fundholding"  
 The King's Fund, London
- Gravelle, HSE. (1980)  
"Prescribing in general practice. Kings Fund Project"  
 Paper RC7 Published Kings Fund, London & Centre for Health Economics, London
- Gregory DA. (1987)  
"Health Service costs and the general practitioner's role in relation to prescribing"  
Journal of the Royal College of General Practitioners  
 December Vol 37 No.305:531-532
- Grol R. Mokkink H. Schellevis F. (1988)  
"The effects of peer review in general practice"  
Journal of the Royal College of General Practitioners Vol 36  
 (306):10-13

- Greenfield, PR. (1983)  
"Informal working group on effective prescribing. Report for the Secretary of State for Social Services (The Greenfield Report)"  
 Department of Health and Social Security, London
- Griffin T. (1987)  
"Social Trends No 17"  
 HMSO London
- Hart, J Tudor. (1972)  
"Primary care in the industrial areas of Britain Evolution and current problems"  
International Journal of Health Services Vol 2 No 3:349-365
- Harris, Conrad M. Heywood, Philip L. Clayden, A David. (1990)  
"The analysis of prescribing in general practice"  
 HMSO, London
- Hayes R, Hinton J, Lovett A, Bentham G, Bestwick C. (1991)  
"Research Report No.2 Measurement of Health needs in Small Areas of Norfolk Using a Geographic Information System"  
 University of East Anglia
- Harding JM. Modell M. Freudenberg S. Macgregor R. Rea JN. Steen CA. Wojciechowski M. Yudkin GD (1985)  
"Prescribing : the power to set limits"  
British Medical Journal Vol 290:450-453
- Head S (1990)  
"Better prescribing with PACT"  
Family Practitioners Services Vol 1:106-108
- Head S (1990)  
"Factors that inflate your PACT figures"  
MIMS Magazine (June 1):47-48
- Hepburn JAC (1991)  
"The prescribing monitoring role of the medical adviser"  
Update Vol 42 (7):681-685
- Hertfordshire Family Health Service Authority (1993)  
"Expensive patients/drugs"  
Correspondence 6 May
- Heywood P. (1991)  
"PACT levels 1 and 2"  
The Practitioner April Vol 235:361-363
- Heywood P. (1991)  
"PACT and Prescribing"  
The Practitioner February Vol 235:168-169

- Hinchcliffe, Sir Henry. (1959)  
"Final Report of the Committee on cost of prescribing"  
HMSO London
- HMSO (1987)  
"Promoting Better Health. The Government's Programme For Improving Primary Health Care"  
November
- Hope J. (1993)  
"Free drugs targeted as NHS bill hits £2bn"  
Daily Mail Newspaper February 10, London
- Houghton G. (1989)  
"Cutting prescribing costs : learning from Birmingham in 1913"  
British Medical Journal Vol 299:1625-1628
- James BG. (1977)  
"The Future of the Multinational Pharmaceutical Industry to 1990"  
Associated Business Programmes Ltd. London
- Layard R. (1972)  
"Cost Benefit Analysis"  
Penguin Books Ltd, London
- Leibowitz A. Manning WG. Newhouse JP (1985)  
"The demand for prescription drugs as a function of cost-sharing"  
Social Science & Medicine Vol 21. No 10:1063-1069
- Le Grand J. Robinson R. (1984)  
"The Economics of Social Problems"  
Macmillan Second Edition, London
- Lindgren B. Silverberg R. (1985)  
"Substituting pharmaceutical prescriptions : the experience of Denmark, Finland, Norway and Sweden"  
Social Science & Medicine Vol. 21 No 10:1089-1095
- London Irvine. (1986)  
"Medical care and the general practitioner"  
Clarendon Press, Oxford
- Luce TRH. (1987)  
"Thirty years of pharmaceutical price regulation : developments in the National Health Service Price Regulation Scheme since 1957"  
In 'Costs and benefits of pharmaceutical research':28-31  
Edited by George Teeling Smith. Office of Health Economics, London



- Maynard A. (1987)  
*"Pricing, Insurance and the National Health Service"*  
Journal Social Policy Vol 8 No 2:157-175
- Maynard A. (1979)  
*"Pricing, Demanders and the Supply of Health Care"*  
International Journal of Health Services Vol 9 No 1:121-131
- Martin JP. (1957)  
"Social Aspects of prescribing"  
 William Heinemann Publications, London
- Maxwell M. Heaney D. Howie JGR. Noble S. (1993)  
*"General practice fundholding : observations on prescribing patterns and costs using the defined daily dose method"*  
British Medical Journal Vol 307:1190-1194
- McGavock H (1990)  
*"Will PACT lead to fewer drugs and better prescribing ?"*  
Update Vol 41 (1):45-51 (1 July)
- Medeconomics (1991)  
*"GP Guide To The Reforms"*  
 April Edition
- Mitchell MW. Fowkes FGR. (1985)  
*"Audit reviewed : Does feedback on performance change clinical behaviour ?"*  
Journal of the Royal College of Physicians of London Vol 19  
 No 4:251-254
- Mooney GH. (1986)  
"Economics, Medicine and Health Care"  
 Wheatsheaf Books Ltd
- Mossialos E. Kanavos P. Abel-Smith B. (1993)  
*"Policy Options for Pharmaceutical Research & Development in the European Community"*  
Occasional Paper in Health Policy No.1 LSE Health, London
- National Health Service Management Executive (1991)  
*"Indicative Prescribing Scheme : Guidance on the Financial Framework and Other Technical Issues"*  
EL(91)12
- National Health Service Management Executive (1992)  
*"Guidance for FHSAs and Regions"*  
HSG(92)49 Annex A

National Health Service Management Executive (1992)  
*"Excessive Prescribing by GPs: Referral to a Professional Committee"*  
(HSG (92)49 Annex C))

National Health Service Management Executive (1992)  
*"Guidance for the Professional Committee in Cases of Excessive Prescribing"*  
HSG(92)49 Annex B

National Health Service Management Executive (1992)  
*"Regulation 15 of the National Health Service (Service Committees and Tribunal) Regulations 1992"*  
HSG(92)49 Annex C

National Health Service Management Executive (1993)  
*"Indicative Prescribing Scheme : Guidance On Setting Amounts"*  
HSG(93)4

Norfolk Family Health Service Authority (1990)  
"Final report on the introduction of the Indicative Prescribing Scheme in Norfolk"  
 Unpublished

O'Brien, J (1990)  
*"The Setting of Indicative Prescribing Amounts"*  
Prescriber December 5:46-49

O'Brien B. (1989)  
*"The Effect of Patient Charges on the Utilization of Prescription Medicines"*  
Journal of Health Economics 8:109-132

Office of Population Censuses & Surveys (1992)  
*"1991 Census Bedfordshire"*  
CEN 91 CM2 (July)

Office of Population Censuses & Surveys (1992)  
*"1991 Census Hertfordshire"*  
CEN 91 CM21 (August)

Office of Population Censuses & Surveys (1992)  
*"1991 Census Norfolk"*  
CEN 91 CM29 (September)

Panton R. (1993)  
*"FHSAs and prescribing"*  
British Medical Journal Vol 306:310-314

Parr C. (1989)  
*"The View Of An FPC Administrator"*  
Update 15 September:525-529

Prescriber (1993)

*"Your New Budget: How Well Have You Done ?"*

February 19, Vol 4 No 4:23-24

Pharmaceutical (abpi) News (1993)

*"Pharmaceutical Industry Accepts New PPRS Scheme - With Reservations"*

The Association of the British Pharmaceutical Industry (26 August):1-4

Pulse (1986)

*"The limited list - a year on"*

Pulse Special Report 29 March:21

Pulse (1986)

*"The limited list - a year on"*

Pulse News Special Report 5 April:18

Purves IN. Edwards C. (1993)

*"Comparison of prescribing unit with index including both age and sex in assessing general practice prescribing costs"*

British Medical Journal Vol 306:496-498

Raftery J. (1993)

*"Capitation fundholding : population, age and mortality adjustments for regional and district health authorities in England"*

British Medical Journal Vol 307:1121-1124

Reekie DW. (1975)

*"The Economics of the Pharmaceutical Industry"*

The Macmillan Press Ltd.

Reekie WD. Weber MH. (1979)

*"Profits, politics and drugs"*

The Macmillan Press Ltd, London

Reilly PM, Patten MP. (1978)

*"An audit of prescribing by peer review"*

Journal of Royal College of General Practitioners Vol 28:525-530

Reilly A. Taylor RJ. Webster J. (1986)

*"General practitioners' attitudes towards the limited list"*

Journal of Royal College of General Practitioners 36:151-152

*"Royal Commission on the National Health Service Cmnd 7615"*

London HMSO 1979 : the General Medical Services Committee  
1986

Roberts, JA. (1989)  
*"The National Health Service in the U.K: from Myths to Markets"*  
Health Policy and Planning Vol 4(1):62-71

Roemer, MI. (1982)  
*"Market Failure and Health Care Policy"*  
Journal of Public Health Policy (December Edition):419-431

Roemer, MI. Roemer JE. (1982)  
*"The Social Consequences of Free Trade in Health Care : A Public Health Response to Orthodox Economics"*  
International Journal of Health Services Vol 12 No 1:111-127

Ryan M. (1989)  
*"Estimating the effects of prescription charges on the use of NHS prescribed drugs in England, 1979-1985"*  
Discussion Paper No.03/89 Health Economics Research Unit, University of Aberdeen

Ryan, M. Birch, S. (1989)  
*"Estimating the effects of health service charges : evidence on the utilization of prescriptions"*  
Discussion Paper 37 Centre for Health Economics University of York

Lord Sainsbury (1967)  
*"Report of the Committee into the Relationship of the Pharmaceutical Industry with the National Health Service 1965-1967"*  
HMSO, London

Scheffler R. (1989)  
*"Adverse Selection : The Achilles Heel of the NHS Reforms"*  
The Lancet April 29:950-952

Schwartzman, D. (1976)  
*"Innovation in the Pharmaceutical Industry"*  
The John Hopkins University Press, Baltimore

Sculpher M. O'Brien J (1991)  
*"Do patient charge increases reduce the use of prescription medicines ? An economic perspective"*  
Public Money & Management (Summer Edition):59-62

Secretary of State for Health Working for Patients. (1989)  
*"The Health Services Caring for the 1990s"*  
HMSO, London

Spencer JA. Van Zwanenberg TD. (1989)  
*"Prescribing research : PACT to the future"*  
Journal of Royal College of General Practitioners Vol 39 No 324 :270-272

- Strangeways P. (1991)  
*"How are indicative prescribing amounts set ?"*  
Prescriber (19 March):23-24
- Taylor RJ. (1978)  
*"Prescribing costs and patterns of prescribing in general practice"*  
Journal of Royal College of General Practitioners Vol 23:531-535
- Taylor RJ. Bond CM. (1985)  
*"Limited lists : limited effects ?"*  
British Medical Journal Vol 291:518-520
- Taylor D. Maynard A. (1990)  
*"Medicines, the NHS and Europe. Balancing the Public's Interests. Briefing Paper 11"*  
 Kings Fund Institute and Centre for Health Economics
- Teeling-Smith G. (1987)  
*"Health Economics. Prospects for the Future"*  
 Croom Helm, London
- Towse A. D'Arcy PF. Harron DWG (1993)  
*"Not What the Doctor Ordered' The Threat of Medicines' Substitution"*  
 The Queen's University of Belfast
- van Zwanenberg TD. (1986)  
*"Prescribing in general practice"*  
Royal College of General Practitioners Reference Book London
- van Zwanenberg TD. Grant GB. Gregory DA. (1987)  
*"Can rational prescribing be assessed ?"*  
Journal of the Royal College of General Practitioners Vol 37 No 300:308-310
- Walker HD. (1971)  
*"Market Power and Price Levels in the Ethical Drug Industry"*  
 Indiana University Press, Bloomington, USA
- Watts G. (1993)  
*"The UK's new price regulations-a triumph for industry ?"*  
Scrip Magazine November Issue:28-31
- Weiner JP. Ferris DM. (1990)  
*"GP budget holding in the UK : lessons from America. Research Report 7"*  
 Kings Fund Institute & Centre for Health Economics, London

WHO (1970)

"Clinical pharmacological evaluation in drug control : report  
on a symposium : Deidesheim"

WHO Regional Office for Europe, Copenhagen

WHO (1988)

"The world drug situation"

WHO, Geneva

Wyatt TD. Reilly PM. Morrow NC. Passmore CM. (1992)

*"Short-lived effects of a formulary on anti-infective  
prescribing - the need for continuing peer review ?"*

Family Practice Vol 9 No 4:461-465

## **APPENDICES**

### **Appendix A                      Practice Profiles**

#### **Practice 1 (K&C)**

##### The practice

Inner city prescribing practice in an affluent part of South West London. It has a catchment area encompassing approximately three and a half square miles.

Two of the three partners have been together since 1970, the third partner, appointed in 1987, spent a year as a GP trainee with the practice. The practice is accredited under the general practitioner training scheme.

The practice employs :

- 2 practice nurses
- 1 practice manager
- 1 computer manager
- 4 secretaries/receptionists
- 2 health visitors
- 1 practice counsellor

District Health Authority contracted district nurses

##### Accommodation :

- entrance hall
- reception area with computer desk and patient records
- secretarial room
- administrator's office/4th consulting room
- small patient waiting area
- 3 small consulting rooms
- 1 nurses'/treatment room
- kitchen/common room
- 2 WCs/bathrooms

### Service provision

Each partner conducts 9 surgeries a week. There are no weekend surgeries and no outside appointments are held though, out of hours cover is provided by the partners in rota with two neighbouring practices. Night visits between 11.00 pm and 7.00 am are frequently carried out by a deputising service.

12 nursing sessions per week include :

child surveillance

childhood immunizations

mother and child health

a full range of health promotion clinics

In addition there is advice and information in the following :

human behaviour

stress management

contraception/family planning

sexually transmitted diseases

manipulative medicine &

small joint injection

obstetrics

paediatrics

gynaecology

minor surgery

psychiatry



## **Practice 2 (LH)**

### The practice

Small town/semi-rural practice in West Hertfordshire established in 1912 and has two surgery sites. The practice has 5 GP partners, a GP retainer and one GP trainee.

The practice employs :

- 3 practice nurses
- 1 practice manager
- 9 receptionists
- 2 full time medical secretaries
- 1 full time information technology officer
- 1 part time clerical worker
- 1 full time reception supervisor

DHA contracted staff :

- 2.5 health visitors
- 3 district nurses
- 2 nursing auxiliaries
- 1 midwife
- 1 midwife's helper.

Accommodation - main surgery is a modern two storey building with :

- 6 GP consulting rooms
- 2 examination rooms
- 1 nurses' room with separate examination room.
- entrance lobby
- small filing room
- the manager's office
- common room
- kitchen
- WCs

Service provision :

Each partner conducts between 8-9 surgery sessions each per week and the GP retainer 2 sessions per week within the structure of 10 weekly surgeries.

Clinics :

asthma

diabetic care

twice weekly well women clinics

regular antenatal

diabetic

skin

child development

elderly services

External commitments include :

medical and occupational health advice to local industries/firms

a scheme for coordinating vocational training posts in hospital and general practice

a dermatology clinic at the local district hospital.

### **Practice 3 (A&W)**

#### The practice

This combined prescribing and dispensing practice operating from three surgeries has a catchment area which spans two counties, Bedfordshire and Buckinghamshire. The practice established 100 years ago has 5 GPs, an assistant GP and a GP trainee. The practice employs :

- 3 nurses
- 2 health visitors
- 4 dispensers
- 1 practice manager
- 7 receptionists
- 2 medical secretaries
- 1 computer operator
- 1 clerical worker

#### Contracted staff :

- 1 counsellor who takes 4 sessions per week and
- 1 physiotherapist

#### Accommodation :

The main surgery is a modern purpose built bungalow design health centre with :

- 5 consulting rooms
- 2 nurses' rooms
- health visitors' office
- dispensary, office
- staff room
- main area

The low design of the building and the proximity of a large car park allows wheelchair access freely.

Larger branch surgery is a traditional building with :

- a consulting room
- a waiting area

an office which serves as the reception  
nurses' treatment room  
dispensary

Smaller branch surgery rents space from within a health  
authority owned health centre and has :  
GP consulting room  
health visitors' and nurses' treatment room  
waiting area.

Service provision :

Each GP conducts 8 surgery sessions per week and minor surgery  
procedures are also carried out at the end of ordinary surgery  
times if required by doctors. In addition, the following  
clinics are held regularly :

antenatal care  
additional monthly antenatal clinics attended by the local  
hospital consultant  
mother and baby  
health education for the elderly  
monthly health education & exercises conducted at warden  
controlled accommodation  
monthly carers' self support group  
health checks for all new patients  
diabetes  
asthma  
over 35 years 'MOTs'  
hypertension  
well-women cytology clinics  
counselling 4 sessions per week)  
physiotherapy (2 sessions per week)

Outside commitments of the partners include :

- \* diabetic clinic (1 morning session) - local city hospital
- \* rheumatology clinic (2 morning sessions per month) - local  
city hospital

\* coordinating Oxford and Collaboration Health Check Trial,  
Department of Public Health and Primary Health Care,  
University of Oxford.

#### **Practice 4 (SH)**

##### The practice :

This prescribing only practice was established in 1967 in an essentially very deprived area in north London. It moved to its present premises in 1984 and in 1992 underwent extensive building works to extend the space available. There are 5 GPs at practice and 2 GP trainees.

##### The practice employs :

- a rheumatologist
- 1 dietician
- 2 part-time counsellors
- 2 full-time nurses
- 1 part-time nurse
- 2 health visitors
- 1 general manager
- 1 fundholding manager
- 8 receptionists
- 2 medical secretaries
- 1 computer operator
- 1 clerical assistant

##### Accommodation :

##### Two storey conversion with :

- 7 consulting rooms
- a nurse consulting/treatment room
- small consulting room
- health visitors' consulting room
- small consulting room for the health promotion nurse
- practice manager's room
- office
- large meeting room
- consultant's and training room
- reception and waiting area with play room for children.

Service provision :

The practice conducts 55-57 surgery sessions per week and clinics :

rheumatology

mother and baby

developmental check

The practice is currently piloting a scheme which offers early morning surgeries. It has also agreed to pilot a scheme to hold surgeries on Sunday mornings in place of the current Saturday morning surgery.

## **Practice 5 (SL)**

### The practice

This small town/semi rural prescribing and dispensing practice in South East Hertfordshire established in 1981 operates from two surgery sites, has a preventive care unit and runs its own pharmacy and dental surgery on a site close to the main surgery premises. The practice has 9 partners, 2 of whom are founder members. The practice is also accredited under the general practitioner training scheme.

The practice employs :

- 3 practice nurses
- 1 nurse practitioner
- 4 health visitors
- 1 practice manager
- 10 receptionists
- 1 medical secretary
- 3 part-time computer operators
- 3 part-time clerical workers

Contracted to the practice are :

- 1 counsellor
- 1 osteopath
- 3 orthopaedic surgeons (visiting)
- 1 consultant gynaecologist (visiting)
- 1 general medical consultant (visiting)
- 1 doctor specialising in asthma and hypertension

### Accommodation :

Main surgery - modern duplex structure :

- main reception and waiting areas
- 7 GP consulting rooms
- 2 consultants' rooms and separate waiting area
- nurses' treatment rooms



4 bedded operating theatre for minor surgery  
self-contained operating suite capable of enabling the provision  
of day case local and general anaesthetic surgery seminar/common  
room  
WCs

Preventive Care Unit (separate site adjacent to the main surgery  
building). Two storey building with :  
waiting area  
main consulting room/area accessed via a series of changing  
rooms  
fund manager's office  
office for the fundholding V.D.U. staff  
contracts negotiator's office  
Executive Partner's office  
nurse practitioner's consulting room with separate waiting  
facilities  
district nurses' office  
health visitors' office

Branch surgery (2 miles) was originally established in 1982 when  
two of the practice's doctors began conducting two sessions per  
week from the Methodist Church Hall. The facility rapidly  
became popular and in 1984 a purpose built branch surgery was  
opened housing :  
2 consulting rooms  
nurse's consulting room  
reception/office area  
waiting area  
WC

Service provision :

Each GP conducts 7 surgery sessions per week at the main surgery  
and 1 session per week at the branch surgery.

Clinics :

well-person  
post natal group  
cervical cytology  
well baby  
antenatal  
paediatric immunization  
paediatric surveillance  
family planning  
elderly persons health circle

Additional expertise in :

general medicine  
maternity  
contraception  
gynaecology and obstetrics  
counselling  
anaesthetics  
asthma  
diabetes

## **Practice 6 (F)**

### The practice

This small, thriving market town practice in rural East Anglia is a combined prescribing and dispensing practice and operates from two surgery sites. The practice has 7 GPs, 2 part-time assistants and 1 GP trainee and is an accredited practice under the General Practitioner Training Scheme.. The practice also employs :

- 7 practice nurses
- 3 district nurses
- 2 midwives
- 2 health visitors
- practice manager
- dispensing manager
- 14 receptionists/dispensers
- 2 medical secretaries
- 3 computer operators/fundholding clerks
- bookkeeper

DHA contracted staff :

- physiotherapist
- nurse practitioner specialising in asthma care

### Accommodation :

Main surgery is a modern single story building with :

- 8 GP consulting rooms
- 2 additional consulting rooms
- nurse practitioners' treatment room
- physiotherapy room
- reception/waiting area
- dispensary
- library
- manager's office
- fundholding office
- staff room

Branch surgery :

2 GP consulting rooms  
1 practice nurse's office  
treatment room  
office/reception room  
waiting area  
dispensary  
common room

Service provision :

The practice runs 57 surgery sessions per week and holds regular clinics and offers advice in :

asthma  
cardiovascular disease  
child & family health  
contraception  
diabetes  
hormone replacement therapy  
hypertension

All GPs are members of the medical staff of the local hospital and belong to the Norfolk Accident Rescue Service. They also offer their services and expertise to local community projects ranging from organizing primary health care, occupational medicine, medical research to providing medical coverage at the local race course.

## Practice 7 (EH)

### The Practice :

Large training partnership based on the outskirts of greater London. Established at the turn of the century by one of the present senior partner's great grandparents. The four sons of the founder also went onto become doctors and its has since been a tradition for a loosely affiliated partnership to grow and today, there are 6 GPs and a GP trainee.

### The practice employs :

3 nurse practitioners  
1 community psychiatric nurse  
2 midwives  
1 health visitor  
1 dietician  
1 phlebotomist  
1 psychologist  
1 physiotherapist } attached to the practice.  
1 chiropodist } attached to the practice.  
1 practice manager  
1 deputy practice manager  
10 receptionists  
1 medical secretary  
1 computer operator

### Accommodation :

In 1961 the practice moved to its present premises and extended these in 1984.

### Main surgery - purpose-built two storey building :

#### Ground floor:

6 consulting rooms  
1 treatment room  
pathology room  
office

#### Upper floor :

an office  
a combined assistant manager's &  
secretary's room  
fundholding & combined common room

reception	kitchen
waiting room	WC

Branch surgery (3 miles). Converted residential accommodation:

2 consulting rooms  
2 nurses' treatment rooms  
waiting room/reception  
office

Service provision :

Each GP conducts 8 set surgery sessions a week and at least one clinic. They also have a rota system for Saturday morning surgeries and life insurance surgeries. Minor surgery is carried out at the surgery when required. Over the last six years the practice has developed a system of anticipatory care.

Clinics :

coronary care prevention  
contraception  
counselling gynaecology  
child health surveillance  
antenatal care  
women's clinic  
menopause clinic  
dermatology  
paediatrics  
hypnosis & chronic pain

Specialist services :

diabetic clinic  
community nurse

## **Practice 8 (T)**

### The Practice

This 6 doctor partnership, in the South East commuter belt, was established about 30 years ago. It is a small town prescribing and dispensing practice with two surgeries.

The practice employs :

3 practice nurses  
1 midwife  
1 health visitor  
2 physiotherapists  
1 dietician  
1 counsellor  
1 practice manager  
9 receptionists  
1 medical secretary  
fundholding staff  
dispensing staff

### The Accommodation :

Main surgery is a two storey converted residential property with :

#### **Ground floor :**

6 GP consulting rooms  
dispensary  
2 nurses' treatment rooms  
minor ops room  
counsellor's room  
3 offices  
reception  
interview room  
waiting areas  
porch for prams  
2 patient Wcs.

#### **First floor :**

practice meeting room  
kitchen  
3 staff Wcs

The branch surgery (4 miles) opened October 1991 is a two storey conversion :

Ground floor :

GP's consulting room  
nurse's treatment room  
interview room  
secretary's office/dispensary  
room  
waiting area  
patient WC

First floor :

health visitor's room  
hospice group room  
meeting room  
GP consulting/midwife

Service provision :

Each GP conducts an average 9 surgery sessions per week in addition to a Saturday morning surgery where 2-3 of the doctors are in attendance.

Clinics :

baby  
asthma  
diabetes  
hypertension  
well person  
diet  
physiotherapy  
anti-smoking

In addition, once every quarter an orthopaedic consultant conducts an outpatient clinic at the surgery and once a month on a Thursday, an anticoagulant nurse from the local hospital also visits the surgery to see patients.



## Appendix B

### Interview Schedule I (Fundholding General Practice)

- 1      What have the changes in the funding of the NHS drugs bill meant to the practice in terms of management of spending on pharmaceuticals, policy decisions about prescribing etc ?
- 2      Do you feel there are any pressures to change your (ie. the practice) prescribing behaviours ?
- 3      What factors in the resident population do you feel might influence your prescribing choices ?
- 4      Can you describe what strategies or policies, if any, the practice has adopted since fundholding to contain its drug spend (eg. introduction of formulary, generic prescribing, repeat prescribing; self audit review, procedures for 'non-conformist' prescribers, where to find help etc).
- 5      Do you have any arrangement/contract with hospital consultants about patient discharge prescriptions ?
- 6      Have you noticed any changes in hospital outpatient prescribing since the Reforms ?
- 7      If so, can you describe them ?
- 8      Can you describe any problems the practice may have experienced in implementing new prescribing policies ?
- 8      Can you describe what decision processes were employed for adopting these new prescribing policies ?

- 9     What do you think the consequences of the new budgetary system might be in terms of patient care ?
- 10    How do you think the practice has fared since fundholding in terms of cost containment of drug spend ?

## Appendix C

### Interview Schedule II (Family Health Service Authority)

- 1      What impact has the new budgetary system meant to the FHSA in terms of the management of drug spend ? (eg. the role of the medical/pharmaceutical adviser; new policies about prescribing certain types/ categories of drugs; monitoring the system etc ?)
- 2      How strict was the FHSA about following the DoH guidelines to the rule when setting practice budgets and IPAs ?
- 3      Were there any problems in setting budgets and IPAs ?
- 4      Can you describe any factors in the resident population which might influence prescribing trends ?
- 5      Can you describe what strategies or policies the FHSA has promoted amongst its practices to contain its drug spend (eg. introduction of formulary, generic prescribing, repeat prescribing; self audit ?)
- 6      Can you describe any problems the practice may have experienced in implementing new prescribing policies ?
- 7      What do you think the consequences of the new budgetary system might be in terms of patient care ? (eg. expensive patients ?)
- 8      Were there any other concerns about how the new budgetary system would affect FHSA firm budgets ?

## Appendix D

### Calculating the percentage generic prescribing (prescribing and dispensing figures combined)

A combined generic percentage was calculated as follows :

$$\begin{aligned} \text{a)} \quad & \text{generic \% (p)} \quad \quad \quad \times \quad \text{overall number items (p)} \\ & + \\ & \text{generic \% (d)} \quad \quad \quad \times \quad \text{overall number items (d)} \\ & = \quad \text{total number of generic items} \end{aligned}$$

$$\begin{aligned} \text{b)} \quad & \text{overall number items (p)} \quad + \quad \text{overall number items (d)} \\ & = \quad \text{total number of items (p+d)} \end{aligned}$$

$$\begin{aligned} \text{c)} \quad & \frac{\text{total number of generic items}}{\text{total number of items (p+d)}} \times 100 = \text{overall generic \%} \end{aligned}$$

p = prescribing  
d = dispensing

## Appendix E

### Ranking practices according to their average cost per patient and average cost per prescribing unit

**Table i**

	Average Cost Per Patient (£)				
Practice	1989	1990	Y E A R 1991	1992	Overall Growth (%)
1	19.61	23.88	28.36	33.64	72
2	32.60	35.51	44.00	48.11	48
3	43.30	45.79	50.30	53.64	24
4	-	-	27.01	27.78	3
5	36.94	39.43	43.78	49.76	35
6	39.73	44.17	50.60	59.13	49
7	35.38	41.38	47.57	47.48	34
8	41.03	45.57	52.52	59.09	44

**Table ii**

	Average Cost Per Prescribing Unit (£)				
Practice	1989	1990	Y E A R 1991	1992	Overall Growth (%)
1	15.93	19.30	22.56	26.66	67
2	26.32	28.55	35.06	37.98	44
3	32.90	34.79	38.09	40.75	24
4	-	-	22.17	22.86	3
5	31.05	32.99	36.59	41.45	33
6	28.51	31.63	36.20	42.33	48
7	28.55	32.00	37.95	38.17	34
8	32.22	35.73	40.94	46.14	43

**Table iii**

	Rank	
Practice	Ave Cost Per Patient	Ave Cost Prescribing Unit
1	8	8
2	6	6
3	2	2
4	1	1
5	4	3
6	7	7
7	3	4
8	5	5

Note : 1 - smallest percentage growth  
8 - highest percentage growth

## Appendix F

### Glossary of Terms

ABPI	Association of British Pharmaceutical Industry
ASTRO-PU	New Prescribing Unit - each person in the population is given a weight based on Age, Sex and Temporary Resident (Chapter 9)
BMA	British Medical Association
Dispensing Practice	Practice which also dispenses medicines this is where the patient lives more than one mile away from the nearest pharmacy
DHA	District Health Authority
DoH	Department of Health
DHSS	Department of Health & Social Security
FHSA	Family Health Service Authority (formerly Family Practitioner Committee)
Firm Budget	Cash limited budget held at RHA and FHSA levels
GP	General Practitioner
GPF Scheme	Cash limited budgets held by GPs
Generic drugs	Non-proprietary (ie. non-brand named) drugs
IPA Scheme	Indicative Prescribing Amount Scheme (target budgets held by non-fundholding practices)
Limited List	'White' list of prescribable items
MA	Medical Adviser (at FHSA and RHA level)
MoH	Ministry of Health
NHI	National Health Insurance (a form of nationalization of club and contract practice extending contract practice to all employed working men up to lower white collar, excluding their dependents and hospital care)
NIC	Net Ingredient Costs - basic price of a drug exclusive of discounts, container costs, VAT etc.
OPCS	Office of Population Census Statistics
PACT	Prescribing, Analysis, Cost

PPA	Prescription Pricing Authority - special health authority responsible for authorizing payment to contractors for dispensing NHS prescriptions and drug information
PPRS	Pharmaceutical Price Regulation Scheme (formerly the VPRS) (scheme to regulate industry profits/prices)
Prescribing Only Practice	Practice which can only prescribe drugs it cannot dispense them
Prescription	Number of individual items (drugs) prescribed by GP
PU	Prescribing Unit - a unit of weight given to a person. Person aged under 65 is given a weight of 1; 65 + are given a weight of 3.
RHA	Regional Health Authority
VPRS	Voluntary Price Regulation Scheme (now PPRS) (scheme to regulate industry profits/prices)

## Appendix G

### Data collection sources :

- \* Department of Health
- \* National Health Service Executive Management Committee
- \* Her Majesty's Stationery Office
- \* The London School of Economics Library
- \* The Westminster & Charing Cross Medical School Library
- \* The London School of Hygiene & Tropical Medicine Library
- \* The Royal College of General Practitioners Library
- \* The British Medical Association Library
- \* The King's Fund Library
- \* The Associated British Pharmaceutical Industry
- \* The Office of Health Economics
- \* The Northwest Thames Regional Health Authority
- \* The University of Leeds Prescribing Research Unit
- \* Bedfordshire Family Health Service Authority
- \* Hertfordshire Family Health Service Authority
- \* Kensington & Chelsea Family Health Service Authority
- \* Norfolk Family Health Service Authority
- \* The University of Leeds Department of Economics
- \* The University of Aberdeen
- \* The Prescription Pricing Authority
- \* The Conservative Party Research Team
- \* The Labour Party Research Team
- \* The Liberal Democrats Research Team
- \* KPMG Peat Marwick

Journal articles, press releases, government papers, books.



## Appendix H

### Interviewees and contacts :

- \* GP partner and practice manager of each of the eight GP fundholding practices participating in the study
- \* GP partner and practice manager of two GP fundholding practices who were eventually partially/totally excluded from the study
- \* Medical adviser Northwest Thames Regional Health Authority
- \* Medical/pharmaceutical adviser Bedfordshire Family Health Service Authority
- \* Medical/pharmaceutical adviser Hertfordshire Family Health Service Authority
- \* Medical adviser Kensington & Chelsea Family Health Service Authority
- \* Medical adviser Norfolk Family Health Service Authority
- \* Manager University of Leeds Prescribing Research Unit
- \* Information Officer Prescription Pricing Authority
- \* Partner (Management Consultancy Division) KPMG Peat Marwick