

**PRESCRIBING,
BUDGETS AND
FUNDHOLDING
IN GENERAL
PRACTICE**



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ABBREVIATIONS

ASTRO-PU	Age, Sex, Temporary Resident-Originated Prescribing Unit
BMA	British Medical Association
BNF	British National Formulary
DDD	Defined daily dose
DHA	District Health Authority
FH	Fundholder
FHSA	Family Health Services Authority
GMS	General Medical Services
GMSC	General Medical Services Committee
GP	General practitioner
HA	Health Authority
IPA	Indicative Prescribing Amounts
IPS	Indicative Prescribing Scheme
NFH	Non-fundholder
NHS	National Health Service
NHSME	National Health Service Management Executive
OTC	Over-the-counter (medicines)
PACT	Prescribing Analysis and CosT (information system)
PPRS	Pharmaceutical Price Regulation Scheme
PU	Prescribing Unit
RAWP	Resource Allocation Working Party

1 INTRODUCTION

In April 1991, a radical programme of public health care reform was introduced by the Conservative Government. The avowed intention of the programme was to improve the overall quality of health care whilst simultaneously moderating the growth in costs. Within the general reform package, prescribing in general practice was a particular focus of attention. The preparatory White Paper (CM 555, 1989) noted that prescription medicines formed the largest single expenditure item for the Family Practitioner Services and observed that the cost of medicines was 'more than the cost of the doctors who wrote the prescriptions' (p.57). In the five preceding years, the cost of drugs had risen at four per cent per annum over the rate of inflation.

The central framework of the government's reform programme was the internal market, or the 'purchaser-provider split', entailing a necessarily prominent role for devolved budgeting. Within general practice, indicative drug budgets were introduced, the intention being to 'place downward pressure on expenditure... without in any way preventing people getting the medicines they need. In this way prescribing can be improved and wasteful expenditure avoided, for the benefit of the NHS as a whole' (p.58). Over and above indicative drug budgets, the government also introduced the voluntary fundholding scheme for general medical practitioners (GPs). A late addition to the reform package, fundholding was always one of the most controversial and most criticised aspects of Conservative health policy. The scheme was introduced without prior appraisal and with minimal consultation. Being untested, no contemporary evidence was available on the potential costs or benefits to the health service, to patients or to the general practitioners who were to operate the scheme. As fundholders' budgets covered their anticipated prescribing expenditures, consequences for prescribing were to be expected.

Even after seven years, our knowledge base with respect to the effects of budgeting, especially fundholding, on prescribing in general practice remains limited, and is based on independent academic studies and a few official reports. This document reviews and draws conclusions from the available evidence. The next chapter provides the necessary background to the ensuing discussion, by outlining the nature of the restructuring of public sector health care occasioned by

the 1990 NHS Act. The following chapter reviews the series of policy initiatives directed towards prescribing, focusing especially on the fundholding scheme and the parallel indicative prescribing budget scheme initiated for non-fundholders. In Chapter Four, the evidence of independent studies of the effect of budgeting on prescribing is reviewed and evaluated, as are the results of the investigations conducted by the Audit Commission. The document concludes with conjectures as to the future of budgeting and prescribing cost control.

A discussion of the impact of budgeting, especially fundholding, on prescribing is particularly pertinent at the present time. Towards the end of its term of office, the Conservative Government mapped out a framework for primary care development (Cm3390, 1996) which appeared to envisage an increasing diversity of organisational forms. Prior to its recent election victory, the Labour Party had been perceived as being antipathetic to fundholding, although early evidence regarding the new government's intentions suggests that fundholding is to be retained whilst new commissioning models are developed (NHS Executive, 1997). Although it is quite conceivable that fundholding in its present form may eventually disappear, it is by no means improbable that any newly-emerging structures (such as locality purchasing) will have much in common with it. An assessment of the successes and failures of prescribing budgets to date can therefore usefully inform the current policy debates.

2 BACKGROUND

2.1 The 1990 NHS Act and after

In January 1988, the Prime Minister, Margaret Thatcher, initiated a review of the NHS. A small ministerial group, chaired by the Prime Minister, generated policy options, shaped by the Conservative government's political beliefs and based on the ideas of policy analysts working in the field. In stark contrast to the NHS re-organisation of 1982, which had been prefaced by the 1979 Royal Commission, the group worked in private and without direct consultation with the medical profession. According to the Prime Minister, speed was essential: 'If we acted quickly we could take the initiative, put reforms in place and see benefits flowing from them before the next election' (Thatcher, 1993 p.608). Within a year of its first meeting, the ministerial group's plans for the NHS were published in a White Paper (CM 555, 1989). The proposed changes were enacted the following year – the 1990 National Health Services Act – and implementation began in April 1991.

The objectives of reform as stated in the White Paper (and implicit within the 1990 Act) were:

- 'to give patients, wherever they live in the UK, better health care and greater choice of the services available; and
- to give greater satisfaction and rewards to those working in the NHS who successfully respond to local needs and preferences' (CM 555, 1989 p.3-4).

The existence of wide variations in costs and activity between hospitals and GPs in different parts of the UK suggested to the government that the operation of the system should be improved to 'raise the performance of all hospitals and GP practices to that of the best' (p.3). The main question the ministerial group addressed in its review was how to achieve such a performance improvement. The notion that the simple injection of more resources would represent the appropriate solution was firmly rejected.

The 1990 Act introduced an 'internal market' into public sector health care, in which self-governing hospital trusts (providers), and budget-holding GPs and District Health Authorities (DHAs) (purchasers), were the principal agents. The choice of this structure was influenced by the work of Alain Enthoven, who had suggested that the NHS of the 1980s was caught in a

'gridlock' of forces making change difficult to achieve (Enthoven, 1985). Moreover, the then existing structure of the NHS contained no effective incentives that motivated its personnel to improve the quality and efficiency of care provided. On the contrary, the system embodied perverse incentives that reduced the likelihood that a better service would be provided. Decisions were being made in a hierarchical management structure in which the same individuals were responsible for both determining need and organising supply. In an internal market, the responsibility for purchasing and providing health care is divided. Purchasers identify and articulate the health care needs of the populations they serve, whilst providers supply the services specified as needed. The relationship between the purchasers and providers is formalised through a system of contracts, which specify the price, quality and volume of care to be provided (Tilley, 1993). The system thus achieves transparency. Providers are made more accountable as purchasers are able to judge the efficiency of the provider units with which they sign contracts. As a result, a 'virtuous circle' can be created, in which competition between providers enhances the quality and efficiency of publicly-funded health care (Culyer, Maynard et al., 1990).

From 1991, the DHAs became the main purchasers of health care services from a range of public, private and voluntary providers, including hospitals that had opted-out of DHA control to become self-governing trusts. The introduction of practice budgets for GPs, under the fundholding scheme, also made it possible for large practices to become purchasers of a defined range of hospital and diagnostic services for the patients on their lists. To ensure that patient services were not disrupted excessively, the government imposed a brief, initial period of 'steady state'. For example, the new purchasers within the internal market were not permitted to make radical alterations to the services provided in the short term.

Further administrative changes accompanied the 1990 NHS Act. Since 1976, the formulae of the Resource Allocation Working Party (RAWP) had attempted to ensure horizontal equity in funding across the country. The RAWP methodology was now to be abandoned. Responsibility for the management of primary care was vested in the Family Health Services Authorities

(FHSAs). Two years later, in October 1993, the government announced its intention to replace the 14 Regional Health Authorities by eight regional offices of the NHS Management Executive (NHSME). DHAs and FHSAs were combined and replaced by a single managerial tier, the Health Authority (HA). Under the new structure, HAs became accountable to the Secretary of State through the NHSME regional offices. The new authorities retained the responsibility for assessing the health care needs of their local populations and for developing integrated strategies for meeting those needs across primary and secondary care.

2.2 GP fundholding

Fundholding – or the ‘Practice Budget Scheme’ as it was intended to be known – was a late addition to the 1990 reform package and purchasing by GPs was not part of Alain Enthoven’s original proposals for the internal market. This having been said, the notion that practices could be allocated budgets for hospital services and prescribing was already familiar and appears to have first been put forward by Alan Maynard during a meeting organised by the Office of Health Economics in 1984 (Marinker, 1984). Maynard had argued that the resolution to the problem of inefficiency was to be found, not in the reform of financial mechanisms, but in the changing structure of incentives. The theory of fundholding was therefore well developed ‘by the end of the 1980s when it fell on the ears of a Secretary of State who was desperately seeking radical reform’ (Maynard, 1995, p.2).

GPs are independent contractors to the NHS, a status which they have continued to preserve since the creation of the NHS in 1948. For the first four decades of the NHS, the preponderance of GP activities (including prescribing) were not cash-limited nor subject to financial incentives to economise. The ministerial review which led to the 1989 White Paper felt that the introduction of an autonomous budget into general practice would:

- provide practices with the freedom to negotiate contracts with any provider unit, thereby improving patient choice;
- require such provider units to be competitive in order to win contracts from GPs, thereby encouraging efficiency in provision;
- sharpen GPs’ managerial skills, owing to the requirement of maintaining budgetary discipline;
- require GPs to effect reasoned judgements over the best ways of allocating resources to optimise health care provision for patients under their responsibility.

Owing to fears that random variations in patient demand could create significant financial management problems for budget-holding practices with a small list, it was initially intended to restrict the fundholding scheme to practices with at least 11,000 patients (Crump, Cubbon et al., 1991). By the time of the implementation of the 1990 Act, however, this minimum size for eligibility had been reduced to 9,000. Practices electing to join had to satisfy additional entry criteria, for example, evidence of partner commitment, good management skills, adequate computing facilities, a commitment to collect specified activity data and the possession of a business plan. Anticipating that practices would incur additional costs in the administration of the scheme, an annual management allowance was made available to cover the costs of employing management staff, training and the purchase of specialist advice and equipment. Initially set at £32,000 per fund, this allowance rose to £35,000 from April 1993, with 50 per cent of this amount being payable to practices in their preparatory year (Trent Health, 1993). From April 1995, the fixed allowance was reduced to around £27,000 and an additional, capitation-related element was introduced (Henry and Pickersgill, 1995).

The fundholding scheme allocated practices an annual cash-limited budget comprising three major components, to cover the costs of:

- the purchase of a defined group of elective hospital services (including diagnostic tests);
- the salaries of non-medical staff;
- prescribed medicines and appliances.

Practices were allowed to vire funds between the elements of the budget and to generate a surplus. Any net surplus demonstrably resulting from efficiency gains was available for discretionary use in practice development. Fundholders who persistently failed to manage their budgets efficiently and effectively risked the removal of their fundholding status. This having been said, it was felt that the HAs would be obliged to sanction ‘reasonable’ overspends on the overall pre-set budget, in the absence of any evidence of mismanagement of the fund. By implication, it became possible for fundholders to ‘over-spend’ their prescribing budget, both by viring between budget headings and by operating with a defensible budget deficit overall.

As with the other areas of the reform programme, the fundholding scheme was not tested prior to implementation. However, the way in which fundholding has developed suggests that the scheme has actually been piloted in progress (Lawson, 1993).

TABLE 1 The growth of fundholding in England

Fiscal year beginning:	1991	1992	1993	1994	1995	1996
Number of practices	306	587	1,235	2,040	2,603	3,735
Number of GPs	1,715	3,159	6,103	8,760	10,410	13,423
Mean number of GPs per practice	5.6	5.4	4.9	4.3	4.0	3.6
Percentage of population served	7	13	25	35	41	52

Source: NHS Executive Regional Offices

Fundholding can be viewed as passing through three main stages of development, which we shall term *caution*, *recruitment* and *extension*. In keeping with the NHS 'steady state', caution was exercised during the initial implementation of the fundholding scheme. During fiscal 1991-92, only large and well-organised practices were allowed to join. Thereafter, the recruitment of more practices became a prime objective. Over the following two years, the minimum list-size criterion was reduced and various attempts were made to make fundholding more attractive and accessible to non-fundholding practices. During fiscal 1992-93, the list size for eligibility was reduced to 7,000 patients and the fundholding budget was extended to include district nursing, health visiting, chiropody, dietetics, community and mental health services and provision for people with learning disabilities (Smith, Brogan et al., 1994). It also became possible for practices with smaller list sizes to group together to form a fundholding consortium, as a means of meeting the minimum list-size criterion. From April 1993, fundholders were allowed to be paid from the practice budget for providing certain non-general medical services and secondary care services to their own patients.

Fiscal 1995-96 represents the expansion phase of the practice budget scheme, with the introduction of two new forms of fundholding. 'Standard fundholding' became the new label for the existing scheme, but the fund was extended to cover the purchase of specialist

nursing services and virtually all elective surgery and outpatient care. The 'community fundholding' option was intended for small practices (with 3,000 or more patients). In this case, the budget covered staffing, prescription drugs, diagnostic tests and most of the community health services of the standard scheme, although acute hospital care was excluded. Finally, under the 'total purchasing' scheme, practices (or consortia) could opt to hold a fund covering all hospital and community services, as well as staffing and prescribing. To help promote these schemes, DHAs and FHSAs were instructed to work closely together to 'explain the expanded options for fundholding to local GPs and encourage and support practices to achieve fundholding status' (NHSME, 1994 para.17). In April 1996, the minimum list size was reduced to 5,000 patients for standard fundholders and total purchasers, although it remained at 3,000 for community fundholders.

Table 1 charts the increasing impact of fundholding on general practice up until fiscal 1996-97, as the extension phase continued to evolve. The effect of the decreasing list size criterion can be judged from the declining ratio of the number of GPs to the number of practices. According to 1996 projections, there are currently just over 4,300 fundholding practices in England, covering 58 per cent of the population, 56 per cent of all GPs and 48 per cent of all practices (NHS Executive, 1996).

3 PRESCRIBING IN GENERAL PRACTICE

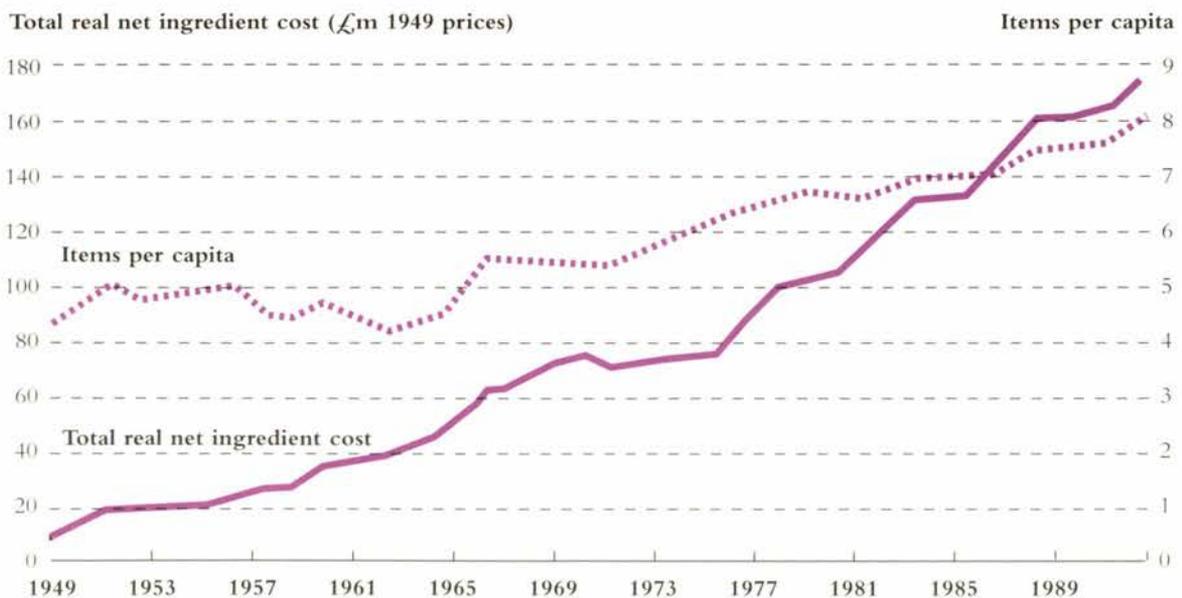
3.1 Prescribing policy before the 1990 Act

Until the implementation of the 1990 Act, the broad trend in both total NHS expenditure on prescribed medicines (measured as the net ingredient cost) and the number of items prescribed per person had been upwards. The relevant data are displayed in Figure 1. Numerous factors explain these trends, for example, population growth, demographic transition towards an ageing population, changing medical technologies and preferred modalities of treatment and innovation in pharmaceutical products. Since 1958, the share of expenditure on pharmaceuticals in the Family Health Services budget has always exceeded that of General Medical Services (GMS) which includes the costs of employing GPs: between 1983 and 1993 the average share of pharmaceuticals was 43.4 per cent compared with GMS's 31.7 per cent (Office of Health Economics, 1995). In the face of the regular increases in the costs of medicines, successive UK governments had attempted to moderate the growth in pharmaceutical spending prior to the 1990 re-

organisation. Broadly speaking, these attempts entailed regulation at the national, and guidance at the local, level.

In spite of the early aspirations towards providing free medical care, the NHS did not survive long without the introduction of charges. Prescription charges were introduced in 1952 and have continued in operation to date, except for the period 1965–1968. Since 1979, the prescription charge has been increased, on average, once a year and, in real terms, it quadrupled between 1979 and 1994 (Office of Health Economics, 1995). Such charges have contributed to revenue-raising and to limiting public demand for drugs. A study of the post-1968 period, for example, has estimated a mean price elasticity of demand at -0.32 and the prescription price rise from £3.75 in 1992 to £4.25 in 1993 increased government revenue by around £17 million whilst decreasing the number of prescriptions dispensed by 2.3 million (Hughes and McGuire, 1995). Beyond constraining demands on the NHS, the increases in charges will have encouraged the public to buy more of the medicines they feel they need from

FIGURE 1 UK total real net ingredient cost of NHS prescriptions dispensed by chemists and appliance contractors, 1949–1991



Note: Data for 1949–1958 are for England and Wales only and for 1959–1967 are for Great Britain only.
Source: OHE (1995).

their local pharmacies (Kennedy, 1996). In recent years, the substitution of 'over-the-counter' (OTC) medicines for prescribed drugs seems to have been formally adopted as a means of controlling NHS expenditure. The recommendation to patients to purchase OTCs by GPs has been sanctioned and the rate of reclassification of drugs from 'prescription only' to OTC status has increased (Proprietary Association of Great Britain, 1995). It should be noted, however, that the overall impact of prescription pricing on consumption has been progressively reduced over time, as an increasing proportion of prescriptions are exempt from charges. Currently, around 85 per cent of prescriptions are charge-exempt, the proportion having risen from around 50 per cent in 1970 (Office of Health Economics, 1995).

Since 1957, the prices of branded pharmaceutical products sold to the NHS have been subject to negotiation between the manufacturers and the Department of Health through the Pharmaceutical Price Regulation Scheme (PPRS). Although the primary aim of this scheme is to limit the profits made by pharmaceutical companies from the NHS to a 'reasonable' return, such a constraint affects the price that drug companies charge for their products and thus the gross cost of prescription medicines to the NHS. In 1993, an immediate price reduction of 2.5 per cent was negotiated for all branded preparations, which was followed by price freeze lasting three years (Office of Health Economics, 1995).

Effective prescribing naturally requires information. In 1981, the British National Formulary (BNF) was re-launched, after an absence of five years (Wade, 1993). The BNF is an annually-updated reference book for prescribers, published jointly by the British Medical Association (BMA) and the Royal Pharmaceutical Society. The publication contains information on drugs dosages, cautions, contra-indications, side-effects, interactions and costs. The data are divided into 15 chapters (each based on a particular system of the human body or an aspect of medical care). Each chapter is divided into sections (on the same basis as the chapters, but at a lower level of aggregation). The BNF is distributed free of charge to all GPs, in the belief that it may assist in developing a rational prescribing strategy at the practice level.

In April 1985, the government introduced a 'limited list', whereby specified drugs in seven therapeutic categories became unavailable for prescription in general practice. In November 1992, ten new therapeutic categories (containing about 1,500 preparations) were added to the re-named 'selected list'. In effect, the selected list limited both the number and type of medicines that GPs could prescribe, as well

as forcing the prescription of (cheaper) generic rather than proprietary drugs in certain cases (Audit Commission, 1994).

In August, 1988, the Prescribing Analysis and Cost (PACT) system was launched by the Prescription Pricing Authority (Heywood, 1991). Health authorities are now able to send each GP a summary of his or her prescribing patterns and costs every three months. Since its introduction, the system has been refined and more detailed PACT reports have been made available. In 1992, electronic practice PACT data at a BNF chapter and section level became available to all FHSAs, followed two years later by electronic data at an individual drug level.

3.2 Prescribing post-1990

As noted earlier, the fundholding schemes originating from the 1990 NHS Act, and their subsequent modifications, have consistently incorporated prescribing expenditures into the fundholder's budget. Prior to April 1991, expenditure on prescribed medicines in this part of the NHS was not cash-limited or subject to practice-level budgets, resulting in wide variations in prescribing costs and rates of expenditure growth between practices. The government evidently intended fundholders' budgets to help reduce such variations and contain the growth in the NHS medicines bill. Indeed, the perceived logic of budgets extended beyond fundholding in this respect. Since April 1991, practices that have not joined the fundholding schemes have, by default, entered the Indicative Prescribing Scheme (IPS). The rationale for the scheme was clearly delineated by the government: 'It is generally recognised that some prescribing is wasteful or unnecessarily expensive. The objective of the new arrangements is to place downward pressure on expenditure on drugs in order to eliminate this waste and to release resources for other parts of the Health Service' (NHS Review, 1989, p.3).

The IPS entails non-fundholding practices being assigned annual Indicative Prescribing Amounts (IPAs) by their health authorities. IPAs are notional budgets or targets for prescribing expenditure. Accordingly, and unlike fundholding budgets, incentives to save by under-spending, and penalties for over-spending, play a much weaker role, unless there is clear evidence of excessive prescribing (Creswell, 1993).

Initially, the government planned to use only information, education and advice to improve prescribing in non-fundholding practices. On this basis, practices were to be encouraged to develop their own formularies and to prescribe cheaper generic

medicines in place of more expensive branded medicines wherever possible. Many FHSAs began to appoint professionally-qualified prescribing advisers (Sleator, 1996). Initially, most authorities recruited medically-trained personnel, but the employment of pharmacists in this role has increased. The main role of prescribing advisers is to undertake practice visits, during which they help GPs audit their PACT data and offer advice on how the practice can improve its prescribing. Increasingly, medical and pharmaceutical advisers have become involved in the budget-setting process, as they are often in a position to provide information on any practice characteristics or circumstances that would warrant a budget increase (Harris, 1996).

Fairly soon, local FHSAs began to consider prescribing schemes embodying incentives more tangible than simple advice and exhortation. A national prescribing incentive scheme was introduced in April 1995 (NHSME, 1995). Under the national scheme, HAs allocated non-fundholding practices a 'target budget', calculated as follows. First, a lower limit was set, an amount beneath which it was deemed unlikely that a practice would be able to meet its patients' needs. Second, an upper limit was set that equalled (or was below) the amount at which a practice could 'reasonably' expect to meet the clinical needs of its patients. Under the guidelines of the scheme, the lower limit was to be between 1 and 3 per cent below the upper limit. Finally, the lower and upper limits together were expressed as a target budget. Payments under the prescribing incentive scheme in relation to target performance are for practice use, i.e. they do not constitute GP income. The maximum payment is £3,000 per GP, a figure small in relation to the surpluses that fundholding practices could obtain from their practice budgets. One presumes that, if the rewards achievable under the former were comparable to those available under the latter, practices would have been less likely to apply for fundholding status. An over-generous prescribing incentive scheme would therefore have run counter to the objective of increasing recruitment to the various fundholding schemes at that time.

3.3 Setting prescribing budgets

The introduction of budgets into this previously uncontrolled area of NHS expenditure risked reducing the amount of drugs prescribed to patients who might otherwise benefit. In consequence, the Department of Health was concerned to ensure that practices were able to keep their expenditure within budget without affecting patient care. Initially, an increase in generic prescribing rates was promoted as a means of

controlling expenditure without reducing patient benefits. In fact, generic prescribing in England has increased considerably over the past decade, despite the continued and regular launches of new branded drugs by the pharmaceutical industry. In 1995, 55 per cent of all items prescribed were generics, in comparison with 41 per cent in 1991 and around 25 per cent in 1985, when the limited list was introduced (Office of Health Economics, 1997). However, given that many of the most recent and efficacious drug products remain protected by patent, it is debatable whether a comparable growth in generic prescribing would be either possible or desirable in the future (Griffin, 1994).

In 1993, the National Audit Office reported that the costs and effectiveness of prescribing could be improved by better review and management of repeat prescribing (Comptroller and Auditor General, 1993) which accounts for over 80 per cent of all prescribing costs (Harris and Dajda, 1996). The following year, the Audit Commission synthesised the strategies that practices might employ in order to control their expenditure without directly affecting patient care (Audit Commission, 1994). The Audit Commission estimated that, were all GPs to follow their recommendations, NHS expenditure on drugs could be reduced by over 10 per cent of the annual total. Although these potential savings are considerable, the scope for economies in these respects is clearly finite. Thereafter, long-term cost control will be influenced more by the extent to which GPs are constrained by their prescribing budgets which, in turn, depends upon how such budgets are set.

In the earliest years of the schemes, both fundholding and indicative prescribing budgets were set on an historic cost basis, supplemented by an uplift factor determined by the Department of Health. However, this approach was criticised for being inequitable and for giving inefficient practices larger budget allocations. From fiscal 1993/94 onwards, FHSAs were advised to use a weighted capitation formula to supplement historic costs as the basis for budget-setting. Initially a simple Prescribing Unit (PU) was defined, which weighted patients aged 65 years and above three times more heavily than those under that age. More recently, the formula has become more sophisticated, in the form of the Age, Sex and Temporary Resident Originated Prescribing Unit (ASTRO-PU) (Roberts and Harris, 1993). Whilst accepting that practice list size is a central criterion for forecasting necessary expenditures, the ASTRO-PU methodology modifies list size by attaching differential weights to each of the patient groups mentioned in its title and thereby accounts for necessary variations in

prescribing expenditure occasioned by practice demography. For example, females aged over 75 years receive 12 times the weighting of males aged below 35 years. The number of ASTRO-PU in a practice thus exceeds the list size in proportion to the number of highly-weighted patients on the list. The architects of the measure acknowledge that 'many factors other than the age and sex structure of a practice population influence prescribing' and that the 'weightings account for only about 25% of the variations in costs between practices' (p.488). Certain of these additional factors have already been identified, for example, out-of-hours service and exemption from prescription charges (Whynes, Baines et al., 1996). In consequence, the current budget-setting process takes the number of ASTRO-PU in the practice as a starting point but further requires bilateral negotiation between practice and HA, to ensure that prescribing budgets take account of relevant factors additional to those included in the ASTRO-PU, for example: prescribing quality, patients resident in nursing homes and local morbidity.

Given that wide variations in prescribing costs existed prior to fiscal 1993/94, the move to equitable budget-setting has been attempted incrementally over time. From 1993/94, FHSAs were told to adjust budget uplifts in a manner that reduced costs around average expenditure per ASTRO-PU for the authority. From fiscal 1995/96, HAs have been guided to divide all practices into three equal groups: (i) practices with above-average expenditure per ASTRO-PU, (ii) practices with expenditure per ASTRO-PU near the HA average; (iii) practices with below-average expenditure per ASTRO-PU (NHS Executive, 1995). The first group should then be allocated a below-average budget increase, the second group an average increase and the third group an above-average increase. Over time, this mechanism is designed to reduce the variation in costs around the expenditure per ASTRO-PU benchmark, as well as containing the growth in the NHS drugs bill.

According to the guidelines for 1996/97, the budget-setting process attempts:

- 'to allocate to each practice a fair prescribing budget, taking account of the needs of its population;
- to ensure fairness for all patients, whether their GP practice is fundholding or non-fundholding;
- to work with practices to promote high quality, clinically appropriate prescribing; and
- to continue to work closely with those practices where there is judged to be most scope to improve the quality and efficiency of prescribing' (NHS Executive, 1996 p.1).

In other words, HAs have been instructed to set equitable prescribing budgets (regardless of fundholding status) on the basis of the cost per ASTRO-PU benchmark, whilst working with practices to promote rational prescribing.

Equally, this guidance could be interpreted as acknowledging that:

- budgets can promote the equitable distribution of NHS funds and control the growth in expenditure on drugs, *without* promoting rational prescribing;
- rational prescribing alone cannot ensure the equitable distribution of NHS funds or contain the growth in expenditure on drugs.

It is important to appreciate that fundholding and indicative prescribing may not *automatically* lead to more rational prescribing. Indeed, the schemes may only promote rational prescribing if they encourage practices to: (i) prescribe more appropriately (including more safely), or (ii) prescribe more cost-effective drugs. If the scheme's primary aim is seen to be expenditure control, practices may have to choose cheaper, less cost-effective drugs or treat fewer patients in order to keep within budget (Griffin, 1994). In other words, the fundholding and indicative prescribing schemes could, in principle, *reduce* the efficiency with which public money is spent or lead to the rationing of prescribing drugs.

4 FUNDHOLDING AND PRESCRIBING

4.1 Evidence

In view of the detailed research and experimentation which typically pre-figures the adoption of any single new medical technology, it is somewhat ironic that the major re-structuring of the entire NHS in 1990 was based on practically no scientific evidence (Whynes, 1996). Since the introduction of the fundholding scheme, however, a number of studies examining prescribing patterns and costs in fundholding practices have been undertaken, the majority by independent academic researchers. As might be expected in an unco-ordinated research programme, these studies vary in size and quality and examine different regions and time periods. These limitations notwithstanding, such evidence is fundamental to our understanding of the scheme's effects on practice prescribing behaviour and will be considered after a review of the official evaluation programme.

The 1989 White Paper (CM555, 1989) charged the Audit Commission with the responsibility for monitoring the progress of the NHS re-organisation and it has completed several major studies of both fundholding and prescribing. The 1994 prescribing report was based on a detailed study of 10 FHSAs and interviews with doctors and staff at 54 practices (Audit Commission, 1994). The findings were confirmed and developed during pilot audits at nine further FHSAs. The report concluded that more 'rational prescribing' by GPs could lead both to better quality care for patients and to major economies in drug expenditure. The Audit Commission calculated that £425 million could be saved if all practices:

- limited their over-prescribing of certain drugs, such as anti-inflammatory and ulcer-healing drugs (£275m);
- reduced their prescription of drugs of limited clinical value, such as peripheral vasodilators (£45m);
- substituted cheaper but comparable drugs, for example, cimetidine for ranitidine (£25m);
- made greater use of generic alternatives to proprietary brands (£50m);
- moderated the use of expensive preparations (£30m).

The Audit Commission found that 85 per cent of non-fundholding practices in the studied FHSAs had overspent their IPAs during 1991/92 and the total amount overspent in England during 1992/93 equalled 7.5 per cent of the budget. Most practices studied felt that they had been offered little explanation of how individual IPAs had been calculated, leading to misunderstanding and resentment. The majority of the GPs interviewed felt that they had not been adequately consulted before their IPAs were set. The Audit Commission observed that 'it has not always been clear whether IPAs are to be regarded as projections of prescribing out-turn, realistic targets, a challenge, or expenditure ceilings dictated by the aggregate level of prescribing expenditure which the nation can afford' (p.63). It was further recommended that 'teeth' be added to the scheme, along the lines of the German system of financial penalties for over-spending (although this did not subsequently materialise in practice).

The Audit Commission felt that the financial and other benefits to practices provided by fundholding and prescribing incentive schemes could potentially exert a more powerful influence. Although their effectiveness in restraining the national drugs bill without adversely affecting quality of care had yet to be established conclusively, the first results were deemed encouraging. The prescribing expenditure of first and second wave fundholders in studied FHSAs averaged 9.4 per cent less per prescribing unit (PU) during 1992/93 than that of other practices. The average increase in expenditure per PU between 1991/92 and 1992/93 was 12 per cent for non-fundholding practices, 10 per cent for first-wave fundholders but only 7.7 per cent for the second wave. Fundholders were also more successful than others in keeping prescribing costs within budget and, in aggregate, under-spent their allowances during 1992/93. They achieved this by prescribing more generics and fewer drugs of limited clinical value. On the other hand, fundholders also appeared to have been more willing than other practices to prescribe expensive drugs where these were better for patient care, for example, inhaled steroids for asthma.

The Audit Commission felt that the longer-term spread of fundholding, while not a universal panacea, would undoubtedly increase incentives for more economic prescribing. The process of preparing for

fundholding provided the impetus for fresh thought about prescribing policy, for example, increased awareness of costs and an examination of how resources are allocated between drugs and alternative forms of treatment. Parenthetically on this point, it has been suggested that, although fundholders have an incentive to reduce prescribing rates, this may be counteracted by the incentive to substitute prescriptions for more expensive hospital referrals (Lerner, 1994). Although a UK study of this possibility has yet to be conducted, research in the USA does support the view that the increased prescription of medicines can have an overall cost-reducing effect. An analysis of a national resource use data set produced the conclusion that a \$1 increase in pharmaceutical expenditure was associated with a \$1.54 increase in ambulatory care costs but a \$3.65 reduction in direct hospital expenditures (Lichtenberg, 1996).

The Audit Commission's 1996 study of fundholding (Audit Commission, 1996) was based on two national surveys of fundholding practices, 56 practice visits and consultation with 15 FHSAs. The Audit Commission found that fundholders tended to come from suburbs and shires rather than the inner cities. As a result, their patients were less likely to be socially-deprived. Fundholding practices stood out from equally large non-fundholding practices in having more of the features normally associated with high standards and better quality of care. For example: they tended, on average, to achieve higher targets for childhood immunisation and vaccinations, and they were more likely to be accredited to offer minor surgery and to be training practices. As training practices, they were likely to be innovative by virtue of having to achieve standards set by the Joint Committee on Postgraduate Training.

Two-thirds of the fundholding practices surveyed had reviewed their prescribing variations between partners and developed a practice formulary, although two in every five had formularies in place before becoming fundholders. A similar proportion had agreed guidelines with hospitals about discharge arrangements and their prescribing implications. On average, fundholders spent less on prescribing than did non-fundholders during 1993/94, but because of the greater variability between practices, these differences were statistically significant for first-wave fundholders only. The majority of fundholders conformed to the Audit Commission's model of rational prescribing. The principal efficiency gains emerged in the first year of fundholding: the third-wave fundholders spent at the same level as non-fundholders during their preparatory year, but their expenditure grew less in their first year of full membership. Information for 1994/95

confirmed this pattern: the fourth-wave fundholders saved 2.7 per cent on their prescribing budgets while first-wave fundholders, on average, broke even.

In its 1996 report, the Audit Commission was somewhat more cautious in its overall assessment of fundholding than it had been two years earlier. It concluded that the majority of fundholders did not appear to be especially good at management or in achieving a large level of benefits for patients. Most fundholders were not really asking a great deal of the scheme although this was not entirely their own fault: the NHS Executive had not specified a detailed set of objectives for the fundholding scheme, and FHSAs had a poor record on feedback to fundholders. In consequence, fundholding practices lacked both a clear goal and knowledge about what others had achieved.

With a view to assessing the academic research literature on fundholding and prescribing, we followed the established procedure for the conduct of systematic reviews (Chalmers and Altman, 1995) by interrogating the principal bibliographic databases (including BIDS and MEDLINE) and following up references cited in the known literature. This search was supplemented by personal contact with investigators in the field and yielded the studies presented in Table 2. The studies are presented chronologically and details of setting, results and main conclusions are provided for each case. In the table, fundholding and non-fundholding practices are denoted 'FHs' and 'NFHs' respectively. Entry into fundholding has proceeded in a series of annual 'waves', the first beginning in April 1991. Those entering in April 1996, for example, were in the sixth wave. In keeping with the conventions of systematic reviews, it is appropriate to note two caveats regarding the publications listed. First, we have included only those studies presenting the results of primary research, i.e. we have omitted commentaries and editorials. Second, any review reliant upon bibliographic search is vulnerable to publication bias of, essentially, unknown proportions.

On examining Table 2, it will be seen that the earliest research inevitably examined a relatively brief time period at the very beginning of the fundholding experiment. Sample sizes were typically small and a questionnaire/interview, qualitative methodology prevailed. Whilst interesting in their own right, the findings of such studies are possibly the least reliable as a guide to the broader trends, as they generally derive from a small, pre-selected number of practices and tend to focus on GPs' aspirations and intentions as opposed to their observed behaviour.

With the passage of time, the availability of statistical data over several years both prior to and beyond 1991

TABLE 2 Summary of research findings

<i>Reference</i>	<i>Setting and subjects</i>	<i>Results</i>	<i>Conclusions</i>
Smedley, Worral et al., 1989	5 practices in Derbyshire, 2 of which were dispensing.	Data from fiscal 1988/89 showed that prescribing costs per patient ranged from £25.1 to £40.4 in the practices sampled.	Variations in practice costs should be taken into account when future budgets are allocated.
Day and Klein, 1991	Questionnaire study of 12 of the 14 RHAs, covering 251 1st wave FHs.	Average prescribing budget allocation per patient by region ranged between £34 and £50. Extreme range across regions was £12 to £67 per patient.	1st wave of FHs was self-selected, having been screened by RHAs. For equity reasons, NHS should move towards a system of capitation budgets adjusted for need.
Burr, Walker et al., 1992	Comparison of 3 months before fundholding with the 3 months after; 4 1st wave FHs matched with 4 eligible NFHs in Mid-Glamorgan.	FHs and NFHs costs per patient rose by 2.4% and 7.5%, respectively. FHs displayed a marked increase in generic prescribing of allopurinol and salbutamol inhalers compared with NFHs. FHs made projected budget saving.	Differences in drug expenditures cannot be explained by changes in the numbers of items prescribed alone. Results suggest that FHs adopted more rational prescribing patterns, exhibited a willingness to review prescribing patterns and to prescribe more drugs generically. Observed changes in prescribing unlikely to be detrimental to patient care.
Glennister, Matsaganis et al., 1992	10 1st wave FHs in 3 regions, 2 metropolitan and 1 rural, during their fundholding preparatory year.	Prescribing budgets per patient ranged from £11.4 to £57.7, around an average of £38.6, with a standard deviation of £8.6.	Prescribing budgets set on the basis of historic costs are likely to reward high-spending practices and penalise low-spending practices, whether efficient or not.
Glynn, Murphy et al., 1992	Interview and postal survey of 16 practices (either 1st wave FHs or 2nd wave applicants) in Kent.	Budget allocations for the 1st wave were relatively generous. Practices seeking fundholding status anticipated changes in prescribing behaviour. However, existing fundholders reported no such changes.	With accumulation of more and better data, the budgets offered to FHs are likely to be closer to existing patterns of practice.
Bradlow and Coulter, 1993	3 dispensing FHs, 5 non-dispensing FHs and 7 non-dispensing NFHs in Oxford region over 2 six-month periods in 1991 and 1992.	Prescribing costs increased in all practices during 6 months after the reforms by 10.2% in dispensing FHs, 13.2% in non-dispensing FHs and 18.7% in NFHs. Items prescribed increased by 5.2%, 7.5% and 6.1% respectively. Dispensing FHs increased generic prescribing rate from 26.9% to 34.5%, non-dispensing FHs from 44.5% to 48.7%, whereas NFHs showed no change. 5 FHs made savings on their drugs budgets (ranging from 2.9% to 10.7%), whilst 3 FHs overspent by up to 3.6%. All NFHs overspent (ranging from 3.2% to 20.0%).	Fundholding helped curb rise in prescribing costs, even amongst dispensing practices, for whom incentives are different. IPAs for NFHs did not seem to have the same effect.
Howie, Heaney et al., 1993	6 practices in Grampian and 3 practices in Tayside (organised into 6 funds) which agreed to act as pilot fundholders during 1990/91.	Proportion of consultations at which a prescription was given was 60.9% in March 1990, 56.7% in September 1990, 58.7% in September 1991 and 59.6% in March 1992. The average prescribing budget per patient was £50, with a range of £44 to £58.	Variation in budget allocations per patient results from budgets largely being set on a historical basis. Lack of sophistication in budget-setting needs to be addressed, especially as equity issues will become more relevant as fundholding reaches a larger proportion of practices.
Maxwell, Heaney et al., 1993	6 FH groups (9 practices) in Grampian and Tayside and 6 NFHs in Grampian during period November 1990 to October 1992.	Both FHs and NFHs reduced the volume of their prescribing for the classes of drugs analysed. The unit costs in some classes rose substantially, contributing to higher costs per patient. Unit costs rose more in NFH practices (24%) than in FHs (11% in Tayside, 16% in Grampian).	The use of 'defined daily doses' (DDD) helped identify costs and volume trends in specific areas of prescribing in FH and NFH practices. The basis on which budgets are set needs improving and the DDD methodology may prove useful for setting volume targets in many drug classes for both FHs and NFHs.

<i>Reference</i>	<i>Setting and subjects</i>	<i>Results</i>	<i>Conclusions</i>
Comptroller and Auditor General, 1994	Postal survey of 220 1st and 2nd wave FHs in England and visits to various NHS authorities and relevant bodies.	During first 2 years of scheme, growth in drug expenditure consistently lower amongst FHs. Proportionate increase in spending on previous year was 12% for FHs in 1991/92 and 8% in 1992/93 and 1993/94. For NFHs the figures were 15%, 13% and 11%, respectively. National figures indicate that generic prescribing rates higher amongst FHs. In 1992/93, national average for FHs was 52% compared to 46% for NFHs.	The budget-setting arrangement during the first 2 years of scheme was intended to minimise disruption to existing drug prescribing. As budget-setting moves towards greater use of benchmarks, it should become easier to demonstrate the fairness of the scheme.
Corney, 1994	Questionnaire study of all 15 1st wave FHs in South East Thames region undertaken towards end of first fundholding year.	2 practices had set up a formulary since becoming FHs. 3 practices increased their rate of generic prescribing, 2 practices increased their use of treatment protocols. Some practices felt budgets penalised them for previously being low-cost prescribers.	The way in which budgets are set may account for the lack of radical change in practices sampled. Many of the changes identified could have taken place in non-fundholding practices
Glennerster, Matsaganis et al., 1994	Interviews with 10 1st wave FHs, 1 2nd wave FH and 16 3rd wave FHs in 3 regions during first 3 years of scheme.	FHs had increased generic prescribing rates, monitored repeats, audited PACT and instituted practice formularies. Practices were experiencing problems with expensive hospital prescribing.	Most FHs over-spent on their drugs budget, the shortfall often being met by under-spends on the hospital budget.
Healey and Reid, 1994	6 1st wave FHs, 18 2nd wave FHs and 64 NFHs over 2 periods: October 1990 to September 1991 (baseline period) and November 1989 to September 1990 (pre-baseline period).	No significant differences in average prescribing costs per patient between each fundholding wave and non-fundholders in either pre-baseline or baseline period, or in mean differences in average costs per patient for either period for the 2 FH waves and NFHs.	Results do not support the hypothesis that prospective FHs inflate their prescribing costs prior to the receipt of their budgets. This conclusion should not be used to vindicate historic cost budget-setting.
Healey, Yule et al., 1994	Regression analysis of 88 practices in Grampian region.	97% of variation in prescribing costs explained by list size, deprivation, patient age and qualification for inducement payments.	Statistical models can be used to produce resource allocation formulae promoting horizontal equity.
Paris, Williams et al., 1994	6 FHs, 42 NFH participants in a local prescribing incentive scheme and 11 other NFHs, in Coventry during 1993.	The mean prescribing budgets per prescribing unit were £49.2 for FHs, £45.8 for participants and £45.3 for NFHs. The average overspend was -2.7%, 2.0% and 9.1% respectively. 4 FHs, 18 participants and no other NFHs under-spent their budgets.	FHs and participants curbed spending on prescribing significantly more than did non-participant NFHs. Local prescribing incentive schemes can be effective in containing costs.
Dowell, Snadden et al., 1995	Single urban practice in Scotland, on becoming FH in 3rd wave.	Generic prescribing increased from 37% to 58%. Volume of treatment dispensed fell by 10.7%. Average costs per treatment day fell by 9.4%.	Practice achieved a large reduction in prescribing costs rapidly. These were tolerated by patients; none left the practice for this reason.
Stewart-Brown, Surender et al., 1995	3 dispensing FHs, 5 non-dispensing FHs and 5 NFHs in Oxford region.	Prescribing costs rose by a third or more in all types of practices between 1990/91 and 1993/94. FHs had greater increase in generic prescribing rates.	Early reports of the effectiveness of fundholding in curbing prescribing costs have not been confirmed in this longer term study.
Whynes, Baines et al., 1995	19 FHs, 11 large NFHs, 21 single-handed NFHs, 54 non-single-handed NFHs in Lincolnshire.	Between 1990-91 and 1993-94, FHs emerge as lower-cost prescribers. Cost economies accomplished by prescribing fewer items overall and more items generically.	FHs have been more successful than NFHs in meeting prescribing budget targets.

<i>Reference</i>	<i>Setting and subjects</i>	<i>Results</i>	<i>Conclusions</i>
Wilson, Buchan et al., 1995	20 1st wave FHs, 31 2nd wave FHs, 49 3rd wave FHs and 312 NFHs in Mersey region.	Cost and volume rose for all groups over time, but rate of increase of prescribing costs significantly lower for FHs. FHs and NFHs have different characteristics.	Fundholding has altered practice prescribing patterns e.g. increased generic prescribing. Financial incentives are effective in changing prescribing habits quickly.
Wilson and Walley, 1995	20 1st wave FHs, 31 2nd wave FHs, 49 3rd wave FHs and 312 NFHs in Mersey region.	On becoming fundholding, growth in FHs' prescribing costs falls but then returns to a growth rate similar to that of NFHs, during 1991/92 to 1993/94.	The success of FHs in containing prescribing costs is not sustained over time. Future waves are less likely to be able to replicate this success.
Baines and Whynes, 1996	Regression analysis of data for 108 practices in Lincolnshire, 1993.	FHs in first 3 waves were more likely than NFHs to meet quality criteria, such as prescribing cost control and screening uptake. Characteristics of 4th wave FHs differ significantly from those of previous waves in many respects.	Early-wave FHs' control over prescribing costs was more likely to be an inherited characteristic, rather than one acquired by fundholding, i.e. a 'selection bias' in early-wave recruitment existed.
Bateman, Campbell et al., 1996	459 NFHs in Northern region, 1993-94.	Following the imposition of a local incentive scheme, 23% of practices achieved their target levels of savings from prescribing budgets. Increased generic prescribing was the most commonly-used strategy.	The prescribing behaviour of NFHs responds to financial incentives in a similar way to that of FHs. There was no evidence of a reduction in prescribing quality.
Eccles, Soutter et al., 1996	Questionnaire to NFHs in Northern region.	Generic prescribing and limits on volume prescribed were the most common methods of cost control. Frequency of use of prescribing guidelines varied with medical condition. Discussion with colleagues was main influence on changing prescribing decisions.	The GP's prescribing decision is influenced by a complex network of factors, with no single factor pre-eminent.
Harris and Scrivener, 1996	Quarterly Prescription Pricing Authority data for all English practices, 1990-1996.	Absolute prescribing costs rose by 66% for NFHs and 56-59% for FHs over the period. Maximum FH savings occurred in first year after entry and declined thereafter. Beyond the third year, FHs' cost growth was similar to NFHs'. The number of items dispensed remained stable over 6 years for all groups	FHs' real budgets were associated with a cost reduction of 6% compared with NFHs. The saving was retained over the period of study but is small compared with the absolute cost increases experienced by all practices. Savings were brought about by lowering the average cost per item.
Wilson, Hatcher et al., 1996	Regression analysis of PACT data, Mersey region, 1990-91 to 1993-94.	Variation in prescribing behaviour among practices was better explained by deprivation and structural parameters pertaining to the practice than by fundholding status.	Fundholding appeared largely responsible for differences in the rise in total prescribing costs between FHs and NFHs.
Avery and Heron, 1997	Postal questionnaire on attitudes towards prescribing, issued to GPs and prescribing advisors in 33 randomly-selected FHSAs.	On average, advisors tend to be more favourably disposed towards the Audit Commission's cost control measures than do GPs, although in many cases this result arises from a minority of GPs adopting extreme views.	There is little evidence that FHs' general views on prescribing costs and prescribing management differ from those of NFHs.
Baines, Tolley et al., 1997	Analysis of 1993-94 PACT data for Lincolnshire practices.	42 per cent of the difference in prescribing costs between FHs and NFHs resulted from the former's greater use of the cost reduction strategies recommended by the Audit Commission.	The incentives offered by the fundholding scheme appear to have encouraged FHs to rationalise their prescribing.

<i>Reference</i>	<i>Setting and subjects</i>	<i>Results</i>	<i>Conclusions</i>
Baines and Whynes, 1997	Regression analysis of prescribing and ACTAP data for Lincolnshire practices, 1993-94.	The prescription of medicines otherwise available over-the-counter is less likely when the practice is fundholding, but more likely when the practice has dispensing status and patients are exempt from prescription charges.	The incentive structure created by hard budgets appears to encourage FHs to moderate their prescription of over-the-counter medicines. Patient cost considerations appear to be a relevant factor in GPs' prescribing decisions.
Hancock and Porteous, 1997	Statistical analysis of 1995 prescribing data for 1,051 Scottish practices.	NFHs' mean prescribing costs per patient were nearly 8% higher than those of FHs, although only 11% of the difference could be attributable to unrealised savings on generics.	Remaining cost difference probably owing to differences in willingness to prescribe, in the supply of related services and in differences in population needs.
Rafferty, Wilson-Davis et al., 1997	Analysis of prescribing activity of 66 FHs and 268 NFHs in Northern Ireland, 1989-1996.	After joining the scheme, the rate of increase of FHs' prescribing costs was significantly lower than that of NFHs, whilst the rate of increase in generic prescribing was significantly higher.	Early-wave fundholders differed in important respects from those joining later, e.g. size, lower deprivation. FHs' incentives to make further savings appeared to diminish after two years.
Rutledge 1997	Analysis of 70 Lothian NFHs who elected to participate in a prescribing incentive scheme in 1995.	Practices received payments for achieving one or more of three targets: increased generic prescribing (97% so attained), completion of a prescribing quality project (64%) and prescribing within the budget (42%). A prescribing budget saving of £350,000 was obtained for an outlay of £196,000 in target payments.	Savings were largely due to increased generic prescribing. The scheme's success was attributed to financial stimuli and the education effects of the prescribing advisors, who assisted GPs in developing practice-specific prescribing strategies.
Whynes, Baines et al., 1997a	Time-series analysis for 19 waves 1-3 FHs, 23 wave 4 FHs and 63 non-FHs in Lincolnshire.	In their first year of fundholding, 4th wave FHs adopted the strategies previously employed by existing FHs, i.e. reducing the number of items prescribed and increasing generic prescribing. No evidence that prospective fundholders inflate costs prior to entry.	Practices adjust rapidly to the incentives embodied in the fundholding scheme although prescribing cost economies may be short-term.
Whynes, Baines et al., 1997b	1993-94 prescribing cost data for Lincolnshire.	In comparison with NFHs, FHs have lower prescribing costs per patient, lower prescription volume, similar unit costs, better prescribing management and higher rates of generic prescribing.	Changed prescribing behaviour of FHs is explained by a move from 'soft' to 'hard' budget constraints.
Whynes, Heron et al., 1997	Regression analysis of prescribing cost data for 841 Trent practices, 1991-92 to 1995-96.	Growth in prescribing costs is negatively associated with growth in generic prescribing, limitations on number of items prescribed and entry into fundholding.	Fundholding cost economies do not appear to persist beyond the year of entry; no evidence of strategic cost-raising behaviour prior to entry.

facilitated the conduct of large-sample quantitative analyses. Inevitably, much of the research was locality-based, reflecting the location and interests of the particular investigators involved. Table 2 contains, for example, four studies of the Grampian region and three for Merseyside, as well as our own work on Lincolnshire. Without complementary evidence from other parts of the country, it is, of course, impossible to determine how representative such locality-based findings might be, although the fact that similar conclusions tend to be reached inspires confidence in this respect. More recently, large-scale, aggregate studies have begun to appear which employ, for example, regional data over up to five years post-1991. Such studies delineate the aggregate time trends much more clearly than does the earlier research.

It should be noted that the Table 2 studies almost invariably focus on cost increases or cost inflation as opposed to changes in budget out-turn. By considering the impact of prescribing changes on average costs, none of the studies has addressed distributional issues directly, i.e. the impact of changing prescribing costs for particular groups of patients. Similarly, none of the studies has addressed outcome issues, although this is perhaps to be expected in view of the fact that the impact of the reforms on patient morbidity and health status is unlikely to be detectable in anything other than the longer term.

Of the 33 papers listed in Table 2, 28 reported the findings of observational studies of fundholding and prescribing behaviour. The remaining five were concerned primarily with GPs' attitudes and opinions, or the behaviour of non-fundholders or pre-fundholders. In all but three of these 28 cases, fundholders were found to have experienced a lower growth in prescribing costs than that of non-fundholders. In the remaining three cases, no significant difference was detectable at the time. With respect to the means by which cost economies had been effected, 15 papers specifically identified increased generic prescribing. Ten identified a reduction in prescribing volume, although two reported no observable change in this respect. Five studies concluded that cost economies had been effected by fundholders' general adherence to the Audit Commission's model of rational prescribing (which includes increased generic prescribing). None of the papers reported relative prescribing cost *increases* as a result of fundholders' employing any of the recommended methods.

Five of the Table 2 papers examined prescribing amongst non-fundholders and three of these focused specifically on non-fundholding prescribing incentive schemes. In all these cases, non-fundholders were

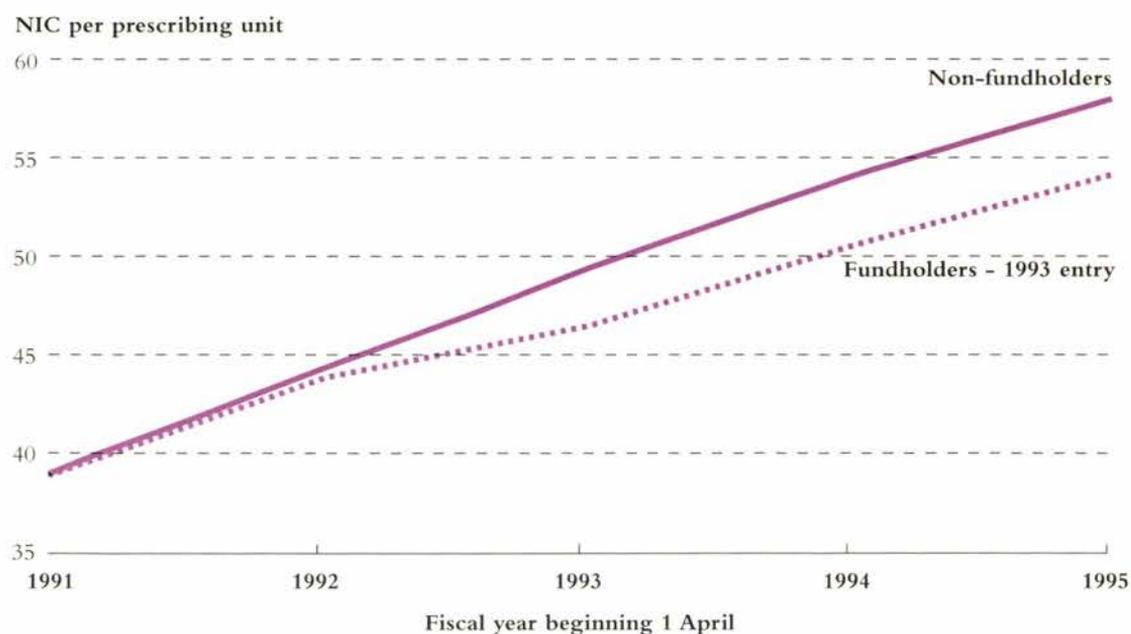
found to respond to incentives in the predictable fashion, i.e. similarly to fundholders. Four studies specifically addressed the issue of whether practices would inflate their prescribing costs prior to entry, with a view to securing a more generous budget. None found evidence for this possibility. In six papers, dispensing practices were a particular focus of concern and were invariably found to be higher-cost prescribers. However, all of these papers also concluded that prescribing cost growth in dispensing practices fell after the attainment of fundholding status.

Six papers addressed the issue of 'selection bias' and all concluded that fundholders in the earlier waves were qualitatively different from those joining the schemes in the later waves. Again, six papers specifically addressed the question as to whether the prescribing cost growth trends of fundholders and non-fundholders would continue to diverge over time and all concluded that marginal gains were unlikely to accrue beyond the short term. Fifteen papers, including many of the earlier ones, noted that prescribing cost performance was strongly influenced by the quality of the budget-setting process. Capitation-based budgets were invariably preferred to those based on historic costs, although much depended upon how 'hard' the budget was perceived to be.

In spite of the diversity of method and study area, we feel that the studies and papers cited in Table 2 are sufficiently consistent in their findings to enable us to draw three broad conclusions:

- when confronted with the financial incentives implied by budgets, GPs typically responded in a manner consistent with an economic decision-making calculus of benefit and cost. The response has been stronger when a change in prescribing behaviour produces tangible benefits to both the practice and the GP. The fundholders' potential for earning real and usable financial surpluses appears to have exerted a stronger and more rapid influence on behaviour than did the non-fundholders' prospects of generating purely nominal surpluses. None of the studies cited in Table 2 demonstrated superior cost containment on the part of non-fundholders in the absence of incentive schemes;
- in cases where they occurred, prescribing cost reductions typically arose from the employment of one or more of a relatively-narrow and well-established range of techniques or innovations. The principal techniques have been: increased generic prescribing, limitations on prescription volume, the use of practice formularies and the receipt of improved prescribing information;
- the principal improvements in cost control arising from the imposition of prescribing budgets appear to

FIGURE 2 The budget effect



have been effected rapidly. With respect to fundholding particularly, most of the innovations appear to have been implemented in the one or two years immediately following entry to the scheme. The scope for further economies being largely exhausted, the growth of prescribing expenditure has reverted to trend thereafter. The effect of the introduction of budgets thus appears to be representable as the sideways displacement of the prescribing cost growth trend, as opposed to a significant change in the rate of growth. Figure 2 illustrates this 'budget effect', using data for the third-wave fundholders in the Trent region (Whynes, Heron et al, 1997). The implication is that the introduction of budgeting appears to have delayed the time at which a given prescribing cost level is reached. In Figure 2, the savings arising from the introduction of budgeting are represented by the area between the two cost curves. Only time will tell whether this essentially-parallel shift can be maintained indefinitely.

4.2 Evaluation

Given that the fundholding scheme introduced budgets into general practice, it should primarily be evaluated on its ability at meeting the objectives of a budget-setting process. As expressed in the 1989 White Paper, the primary objectives have been to constrain the growth in NHS expenditure on drugs and to reduce the variation in prescribing costs between practices.

Despite a number of studies being undertaken, there is little evidence to suggest that the fundholding scheme can, in the longer term, meet the objectives of the budget setting process. Most of the published studies have examined prescribing patterns and costs in fundholding practices up until fiscal 1993/94 and, at this point, the budget-setting process moved away from historic costs towards budgets set using expenditure per ASTRO-PU as a benchmark. Therefore, these studies give little indication as to how fundholding practices respond to the dual objectives of containing costs and reducing variation. Moreover, the evidence suggests that fundholders make relatively more use than non-fundholders of particular expenditure control strategies, such as increased generic prescribing, to make savings. Given that the ability of these strategies to yield savings is inevitably limited, it is not clear whether fundholders would be able to make relatively more savings in anything other than the short term. Indeed, once such savings sources have been exhausted, fundholders will have to find new means of controlling costs. If they do not, the implication is that they will have to ration health care in order to stay within their budgets. As fundholding practices have autonomy as to how they spend their budgets, this may result in implicit rationing at the practice level, the cost-effectiveness of which cannot be judged.

Few studies have examined whether fundholding practices are more likely than non-fundholders to

contain their expenditure within the budget that has been set for them. Even those studies which have examined this issue consider mainly the years prior to the move towards capitation-based budget setting. Once both fundholding and non-fundholding practices are set corresponding budgets per ASTRO-PU, the only difference between the fundholding and IPA schemes may be whether one group is more likely than the other to keep expenditure within the budget allocation. Once fundholders have exhausted the expenditure control strategies available to them, then they may find it as difficult as non-fundholding practices to stay within their budgets.

It has been suggested that potential fundholders would artificially inflate their prescribing costs prior to entry in order to be given a larger budget once in the scheme. The preponderance of evidence does not support this theory and, with the move to capitation budgets, such a problem is likely to diminish. However, the fundholding scheme may well have encouraged non-fundholding practices planning to join the scheme in the future not to make all the current savings in prescribing costs that they potentially could at the time. It would be eminently rational to 'save the savings' until entry into the scheme because, at this time, the savings would be real rather than nominal. Therefore, whilst encouraging new fundholding practices to make rapid savings, the fundholding scheme may also encourage potential fundholders to reduce the savings they currently make.

Perhaps the principal problem surrounding the evaluation of the fundholding scheme is the attribution of causation. Evidence suggests that fundholding practices are lower-cost prescribers but is fundholding *per se* the cause? For example, the Audit Commission and other cited studies have found that fundholding practices are more likely to be training practices, which are held to be exemplars of good practice. They also tend to be larger practices. In the first few waves, therefore, training and fundholding status are strongly co-linear and it is hard to determine which attribute is properly responsible for subsequent prescribing behaviour. There is also very clear evidence of selection bias in the initial waves of fundholding. It is probable that these practices were self-selected, in that they believed that they could respond to the scheme successfully. Alternatively, there may have been screening on the part of FHSAs, who were advised to select only those practices with the apparent ability to manage the scheme. Given the relatively high quality of published prescribing data, it is possible that FHSAs used such information in making their choices. As a result, early-wave applicants for fundholding may have been approved on the basis of past prescribing

performance. If this is true, it might be argued that fundholders have been successful in controlling prescribing costs only because they are a group pre-selected on the basis of a proven ability to control prescribing costs.

At present, it remains far from clear whether fundholding has or has not improved the efficiency of the NHS. Although the scheme has almost certainly delayed the growth in prescribing costs amongst the practices concerned, practices have been able to retain any budget surpluses produced. Total NHS expenditure has therefore not been reduced and the gains from re-investment of budget savings have yet to be evaluated. With respect to cost-effective prescribing more specifically, it is obvious that, in themselves, budget constraints do not guarantee rational prescribing. Once the expenditure control strategies available to them are exhausted, fundholders will be obliged to:

- over-spend their budgets; or
- resort to cheaper, but not necessarily more rational, prescribing; or
- ration care to their patients.

The first option, of course, essentially invalidates the primary function of any budget-setting scheme, assuming that the budget has been appropriately set. The second will be detrimental to patient care and militate against a GP's duty to spend public money efficiently. The third is an explicit statement that the limited resources of the NHS are more firmly in the hands of GPs than they are in those of HAs or the government.

Summarising, it appears that, during the first few years in the scheme, fundholding practices have effected rapid savings in their prescribing costs using one or more of a range of well-established methods. This behavioural change appears to have resulted from both the incentive effects of the scheme and the characteristics of the particular practices that entered it. There is little evidence to suggest that fundholding practices will be more likely to stay within their budget allocations once the expenditure control strategies available to them have been exhausted. It goes without saying that, unless practices do feel the need to be constrained by the budgets allocated to them, the pursuit of managerial efficiency will fall by the wayside.

5 A FUTURE FOR FUNDHOLDING?

General practice in the UK is currently in a state of flux. The recent primary care White Paper (Cm 3390, 1996) advocated increasing the flexibility of the system. In the case of GPs, this could mean a salaried service within partnerships or trusts, practice-based contracts and a single budget for general medical services and prescribing. In the last-mentioned case, non-fundholders could potentially acquire the fundholders' existing capacity to vire budgets between prescribing and other activities. In addition, the proposals to strengthen community pharmacy would clearly impact upon the GPs' traditional prescribing role, for example, 'wider recognition of community pharmacy as the first port of call for minor ailments' and 'providing more advice on medicines to the rest of the primary health care team' (p.9). In stark contrast to the 1989 White Paper, the 1996 document expressed an interest in piloting new schemes and in developing strategies based on the success, or otherwise, of such pilots. The opportunities for such experimentation were formalised in the 1997 Primary Care Act.

At the same time, the General Medical Services Committee (GMSC) of the BMA has been concerned to define more tightly the 'core' and 'non-core' responsibilities of GPs (GMSC, 1996). The significance of this distinction lies in the fact that the latter are deemed independently contractible and thus could become the subject of additional budgets. A number of items on the GMSC's recommended list of non-core services would have implications for prescribing expenditures as they currently figure implicitly in the core. Examples include care of dependent patients in nursing homes and prescribing in cases where GPs do not normally possess sufficient specialist knowledge. Taken together with the White Paper proposals, it is clearly possible that primary care in the future could see a proportion of GPs' existing prescribing activities transplanted to other agents or financed through other budgets.

On the basis of evidence to date (NHS Executive, 1997), it appears that fundholding has survived the replacement of a Conservative by a Labour government. The terms and conditions, however, have been subtly altered and the intention to explore new models of care commissioning within the framework of the 1997 Primary Care Act has been clearly signalled. Entry into the eighth wave has been deferred until 1999, in keeping with a new policy of biennial

rather than annual recruitment, and £20 million in management allowances has thereby been released for alternative use in 1998/99. Concern has been expressed over possible financial inequity between fundholders and non-fundholders, especially in relation to budgets. Fundholders have been instructed to return 'windfall' savings and to hold unplanned savings against possible future overspends. Furthermore, it is evidently deemed appropriate to cover budget deficits which cannot be made good from existing savings by subtraction from future budget allocations. Other things remaining equal, these explicit constraints on budgetary autonomy would seem to have the effect of making the fundholding option somewhat less attractive to the GP in the future.

More generally, the Labour government has signalled its intention to eliminate the 'two-tier NHS' which fundholding has been perceived to have created. For example, it was announced in July, 1997, that steps would be taken to prevent hospitals offering preferential arrangements to the patients of fundholding practices, in the form of shorter waiting times. Whether it is prudent to continue to accept the logic of an internal market whilst, at the same time, imposing further constraints on market forces is a moot point. Moreover, it appears to have been overlooked that, on the basis of the evidence considered in this monograph, 'two-tierism' runs both ways. Whilst the patients of fundholding GPs may well have secured advantageous terms with respect to hospital waiting times, their receipt of prescribed medicines appears to have been more rigorously controlled than has been the case for patients of non-fundholding practices.

Although it appears that fundholding will be with us for the foreseeable future, new options for change are clearly being envisaged. Supposing that budgeting is to be replaced or modified, what options might exist in theory? Our list includes four possible candidates:

- *return to the pre-fundholding structure – education and advice, but no budgets or incentives.* In view of the proven efficacy of budgets and incentives in both changing prescribing behaviour and permitting external monitoring, this option appears both inadvisable and unlikely;
- *retain the status quo – fundholding and IPAs, with incentives and advice.* Evidence suggests diminishing returns to fundholding and budgeting in general, with

not all practices being willing or able to respond to incentives. It would be possible, however, to construct a 'two-speed' development model which offers the practice a choice over its own managerial autonomy and the degree of risk accepted. In the 'fast lane', rapid change and innovation would be sought and rewarded accordingly. Detailed checks of practices wishing to enter the scheme would be made and their performance would be monitored closely. The engine of change would primarily be the practice. In the 'slow lane', practices would be under less pressure to achieve targets, but would be offered correspondingly poorer prospective rewards. For both lanes, external help and guidance would be made available. Practices performing poorly in the fast lane could be exited to the slow lane, thereby providing the necessary incentives. Obviously this model could be extended to more than two lanes, whilst maintaining a hierarchy of expectation and prospective reward;

- *budgeting with consent – a change in the definition of rational prescribing.* This option assumes that the medical profession explicitly accepts the fact that NHS funds will be cash-limited at a global level and must, therefore, be limited at the practice level. With such acceptance, no incentives would be needed to change GP behaviour although payments could be made for the amount of work involved in reviewing patient prescribing. Examples might include extra consultations to review repeat prescribing and GP training on the most cost-effective of the new treatments. This approach would require that the profession augment its definition of rational prescribing – that which is 'appropriate, effective, safe and economic' – with 'financially responsible'. If based on national criteria, this approach would promote the equitable distribution of NHS funds across practices;

- *single budgetary regime, with incentives and education.* Instead of offering practices the option of two schemes as at present, only one would be operated. All practices would be set budgets based on an accepted capitation formula (Majeed, 1996) and GPs could be given direct payments for keeping expenditure within such budgets. Possibly the 'target payments' criteria for screening could be modified for prescribing. The practice could also be paid for improving the efficiency of their prescribing and the scheme would be supported by education and information. Being operated at the practice level, the scheme would not require the consensus of the profession. The fundholding and indicative prescribing schemes would be deconstructed and their most effective parts used to build this new version.

The post-1990 reforms of the NHS were fundamentally different from the regular waves of organisational changes which had preceded them.

Earlier re-alignments had been concerned primarily with administration as opposed to structure. Although the reforms have been criticised as lacking a strategic dimension (Ham, 1994), this is true only if one considers them, inappropriately we feel, as a simple extension of the approach which had gone before. In reality, the change in structure – the creation of the internal market – has implied that the strategic dimension has become evolutionary rather than pre-specified. The post-1990 strategy has been in the process rather than in the outcome. Now, it is quite probable that a 'permanent revolution' is unsustainable in the future. Arguably, 're-organisation fatigue' has set in and needs to be replaced by more pragmatic problem-solving within the evolving structure (Ham, 1996). It is important to appreciate, however, that the increased decentralisation advocated in the recent primary care White Paper (Cm 3390, 1996) is completely consistent with this new structure, for such is the logic of markets. Whether these implications have been fully recognised by government remains a moot point. Decentralisation trades local responsiveness to market signals against the dilution of central control. Unless it can be assured that the internal market will continue to function correctly – for example, budgets bite and incentives motivate – devolution risks an explosion of care costs initiated by increasingly-independent NHS agents.

One of the issues to be resolved, pragmatically or otherwise, will be the costs of prescribing. Irrespective of whichever scheme of cost management is eventually put into place, prescribing costs in general practice are likely to rise in the foreseeable future. As noted earlier, factors such as the ageing population and pharmaceutical innovation are likely to continue to drive costs upwards. Even with the imposition of the two budget schemes in 1991, the total cost of NHS prescriptions rose by 41 per cent between 1991 and 1995, an increase only slightly smaller than the 48 per cent rise during the five years prior to the reforms. Prescription volume, however, appears to have exhibited a more significant decline in growth rate, at 15 per cent as opposed to 25 per cent for the same periods (Office of Health Economics, 1997 p.63). The resolution of the prescribing issue, it must be stressed, does not exist in isolation. Although we now know a reasonable amount about factors influencing prescribing costs for both fundholders and non-fundholders, we know, not surprisingly, precious little about the long-term health consequences of the recent changes in prescribing behaviour. Assuming that the necessary trials are put into place, such evidence will gradually accumulate. It is not inconceivable that we shall then discover that there are other areas of health care expenditure in far more urgent need of cost containment.

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