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HEALTH ECONOMICS &
FINANCING PROGRAMME

Experiences of Contracting Health Services: an Overview of the Literature

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HEFP working paper 01/98, LSHTM, 1998

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Also published as a technical paper in the “Macroeconomics, Health and Development Series”, number 33, World Health Organization, Geneva, 1998.

ACKNOWLEDGEMENTS

This paper was prepared for a WHO Technical Meeting 'Towards new partnerships for health development: The contractual approach as a policy tool' 4-6 February, Geneva. The work on which it is based was funded by research project and programme grants from the UK Department for International Development to the Health Economics and Financing Programme, London School of Hygiene and Tropical Medicine. Shorter versions of some of the material presented here have been published in Mills (1997) and Mills (1998).

1. INTRODUCTION

Recent health policy debates in both developed and developing countries have been strongly influenced by a trend towards 'marketisation', involving the selective introduction of a range of market mechanisms within the public health system (Hurst 1991, Saltman and von Otter 1995a, Mills 1995, Saltman 1995, McPake and Ngalande Banda 1994, World Bank 1993, OECD 1992, Mills 1997). These developments are attributable to two main sets of influences. The first is the emergence of new trends in public sector management, which identify private sector mechanisms as a solution to many of the problems currently experienced by the public sector in many parts of the world (Walsh 1995, Moore 1996). A second key driver of these reforms has been the accumulating evidence of the failure of health care systems throughout the world to meet key objectives of efficiency, equity and responsiveness to users (Birdsall and James 1992, World Bank 1993, Mills 1995, Bennett, Russell and Mills 1996). Further factors have been growing demands for the extension of consumer choice and influence, and increasing tension between limited resources and increasing demands on health care systems (Robinson and Le Grand 1995).

'Marketisation' proposals and reform programmes have varied widely in terms of their scope, the components of the health system they address, and the specific mechanisms they rely upon. At their most ambitious, reforms have aimed to create full 'quasi-markets' in the health sector, with competition in either or both the funding and supply of health care. Less ambitious reforms have aimed at introducing more limited market elements, such as contractual relations between purchasers and providers.

Reforms of this kind have been debated, and in some cases implemented, in numerous developed countries including the majority of OECD states (OECD 1992, Saltman 1995, Saltman and Figueras 1997). Some of the better known instances include those in the United States (Iglehart 1993, Ellwood, Enthoven and Etheredge 1992), the UK (Great Britain Department of Health 1989, OECD 1992, Le Grand 1994), the Netherlands (van de Ven 1989), Sweden and Finland (Saltman and von Otter 1992, von Otter and Saltman 1991, Annel 1995; Diderichsen 1995) and New Zealand (Borren 1993, Ashton 1995).

Very few middle or low income developing countries have to date implemented large scale structural reform along these lines, one of the few exceptions being Colombia (Yepes and Sanchez forthcoming). However, there are several reasons to believe that such an approach to policy reform will become increasingly relevant in the foreseeable future. The health systems of several middle income developing countries currently feature limited market elements, such as selective contracting (public sector purchasing of specific services from either public or private providers). This occurs, for example, in some social insurance systems in Latin America and Asia (McGreevey 1990, Briscoe 1989, Kim 1987, Griffin 1990, De Geyndt 1990), and in several other countries in which public sector provision dominates, but where some services are contracted out to private sector providers (Price, Masobe and Booyesen 1993, McPake and Ngalande Banda 1994, Bennett 1991, Chandiwana and Chiutsu 1993, Cruz and Zurita 1993, Bennett and Mills 1993).

In the Latin American context, the Colombian reforms are based on the introduction of a split between purchasers and providers with competition amongst both insurers and providers, while Mexico is considering similar reforms (Gonzales-Sedano 1995, Mills, Hongoro and Broomberg 1997). Chile is also considering proposals to increase competition at the primary health care (PHC) level, by allowing private providers to participate in publicly funded provision (Jimenez 1993, Jimenez de la Jara and Bossert 1995). Similarly, most of the countries of the former Soviet bloc and Eastern Europe, including the Russian Federation, are experimenting to a lesser or greater extent with reforms of this kind (Robinson and Le Grand 1995, Saltman and Figueras 1997, Sheiman 1995).

In Africa, Zambia has begun to implement proposals which envisage extensive decentralisation of management authority and a purchasing role for district health authorities (Bennett, Russell and Mills 1996), while South Africa is considering the introduction of provider competition in the delivery of publicly funded PHC services (Department of Health, Republic of South Africa 1996), and already has extensive experience with selective contracting (see below). In a number of other countries (e.g. Ghana, Malawi, Nepal, Rwanda, South Africa, Swaziland, Tanzania, Zimbabwe) the public sector contracts for health service delivery, either explicitly or implicitly, with private (usually not-for-profit)

providers such as churches or other NGOs, and meets all or some of their costs through subsidies and grants (Gilson et al 1997, Green 1987, Gilson et al 1994, Hospital Strategy Project Consortium 1996).

Numerous other developing countries also contract out the delivery of a range of clinical and non-clinical support services (Mills 1995, Mills, Hongoro and Broomberg 1997, Bennett, Russell and Mills 1996, McPake and Ngalande Banda 1994). Finally, there is emerging evidence of a significant shift towards policies of this kind among influential donors and agencies in international health, which is likely to add impetus to such reform initiatives (Mills 1995, World Bank 1993, Cassels 1995, Kutzin 1995).

Despite the extensive debate and descriptive literature on these reforms, there remains very limited information, from either developed or developing countries, on the impact of marketisation reforms on the efficiency of providers and of the health system more generally, on equity and other social objectives, or on the costs of the reforms. This literature review focuses on these questions in the context of developing countries, with a specific emphasis on contracting as the key manifestation of the general trend towards marketisation. The review identifies from the literature:

- (1) the definitions of contracting in use
- (2) the theoretical rationale for governments to contract out services
- (3) issues relating to the design and implementation of contracts
- (4) results of contracting out
- (5) conditions conducive to successful contracting.

It focuses on the contracting of health services for the general population, referring to experience of contracting services for insured populations only where this is of direct relevance.

2. TERMINOLOGY

A variety of forms of contractual relationships have been identified (Walsh 1995), including:

- Competitive tendering (also known as market testing), where internal staff can bid for contracts in competition with private contractors;
- Contracting out, where only private bids are allowed and where contracts may be agreed without a competitive process (termed sole sourcing in the US);
- Internal contracting, where only internal bids are allowed;
- Performance contracts, which are explicit agreements between the government (at various levels) and public-sector managers (World Bank 1995)
- Internal market, where there is complete separation between the roles of purchaser and provider within the public sector, and they are linked through trading agreements or contracts.

These distinctions are based essentially on whether or not the contracting process is competitive, and whether the process allows both public sector and private sector bids, or restricts bidding to the public sector. Because of the attention attracted by the UK NHS reforms, where contracts are largely internal to the public sector, discussions of the merits of contracts tends to gloss over whether these are contracts between public agencies or between a public purchaser and private provider. Yet both the case for and nature of contracts are likely to depend fundamentally on the nature of the provider.

3. THE THEORETICAL RATIONALE FOR CONTRACTING OUT AND THE DANGERS

The general theoretical rationale for contracting out relates to theories of why governments fail in their provision of services. The last decade has witnessed a dramatic re-evaluation of the structure and functions of government in relation to the delivery of public services (Walsh 1995, Jackson and Price 1994, Mills 1995, Moore 1996). A central tenet of the new thinking, termed the 'new public management' (Hood 1991, Moore 1996), is that the traditional organisational form of the public sector, hierarchical bureaucracy, is inherently inefficient and that the introduction of various market mechanisms will substantially enhance the efficiency of public service delivery.

Two main schools of thought underpin this analysis. The first, property rights theory, contends that the main source of inefficiency in the public sector is the weakening of property rights, so that decision makers face few incentives to allocate resources efficiently. This is contrasted with the incentives facing entrepreneurs or shareholders in the private sector (Mills 1997). The second critique of the public sector, argued by 'public choice' theorists, is that the politicians and bureaucrats who control public bureaucracies cannot be assumed to be acting in the public interest, since they are more likely to serve their own interests, or those of powerful interest groups (Walsh 1995).

In response to these analyses, the 'new public management' envisages the use of market mechanisms to generate appropriate price and demand signals, and to weaken the influence of politicians and professionals over public service delivery, thus ensuring that these services are more responsive to market signals and to customers (Walsh 1995, Jackson and Price 1994, Moore 1996). It is also argued that private organisations can bring the advantages of functional specialisation, as well as speed and flexibility in adjusting to changing factor prices, technology and demand conditions (McCombs and Christianson 1987, Mills 1997). A central theme of this thinking is thus the view of the state as responsible for enabling or ensuring service delivery, rather than for direct delivery of services itself, except in certain identifiable circumstances (Vining and Weimer 1990, Moore 1996).

Since health care constitutes a major component of public services in most countries, it is not surprising that these new trends in public sector management have substantially influenced health policy debates (Mills 1995, Bennett, Russell and Mills 1996). Analysis of the efficiency arguments in the context of health care systems reveals a number of distinct, though linked claims. The first is that the replacement of direct, hierarchical management structures by contractual relationships between purchasers and providers will promote increased transparency of prices, quantities and quality in trading, as well as managerial decentralisation, both of which will enhance efficiency. The second is that these reforms will promote increased competition among providers, and that the increased level of competition will in turn enhance supply side efficiency.

These rationales rely largely on economic arguments. Contracting has also been justified in political terms - witness its wide popularity with politicians in a number of countries. One reason is that public sector management of services is widely seen to have failed. This is perhaps most true in the countries of Eastern Europe and the former Soviet Union, Latin America and Africa. Contracting, or marketisation more broadly, has been perceived as an attractive alternative, and one that has been in use for a number of years on a small scale and so need not involve too radical a change.

Contracting has also been justified in terms attractive to managers. It offers a means of distancing the provision of services from the political process. It challenges the established power of organised labour, and provides the means to use labour more flexibly (Saltman and Von Otter 1995b). With respect to contracting out non-clinical services such as cleaning, it may enable managers to concentrate on what they see to be the more important parts of the service.

Proponents of contracting also claim, often implicitly, that the overall benefits of contracting out will outweigh the potentially substantial costs involved in their creation and maintenance. These costs include transactions costs, the higher costs that may result from the loss of monopsony purchasing power, and the social costs arising from equity problems. In the case of transactions costs, theory suggests that there may be substantial transaction costs involved in creating and maintaining the contracts. The extent of such costs will depend on the numbers of contracts that have to be written, the extent of detail in their specification, and the intensity with which implementation is monitored, and will therefore vary between and within systems. While it is clear that contracting may incur high transactions costs, it is important to compare these with the explicit and hidden costs of directly managed public systems, rather than to view them as entirely incremental. For example, public agencies may face large costs in monitoring staff and output quality, and there may also be significant costs involved in bureaucratic administrative mechanisms and in the effects of political interference (Krashinsky 1986).

A second set of costs may come from the loss of monopsony power resulting from the fragmentation of the single purchasing agency in the traditional public health sector. This will not however be a problem where a single agency lets contracts for services.

Some critics of contracting reforms argue that they embody a potential conflict between efficiency requirements of the market environment and equity goals, and may act to undermine equity. Examples of this problem include the loss of comprehensiveness of local service provision, and potential loss of consumer choice. These may arise as inefficient local services are forced to close, as economies of scale dictate increasing concentration of service provision, or as hospitals concentrate on more profitable services at the expense of core services (Robinson 1990).

Equity may also be threatened through the practice of provider or purchaser selection of low risk patients where payment does not adequately compensate for the level of risk of specific patients or types of patient (Le Grand 1991, Bartlett and Le Grand 1993). von Otter and Saltman (1992) also argue that the participation of private sector providers in the market may force public hospitals to behave more like for-profit hospitals, focusing on profitable services and stripping out non-profitable but essential services. Further, for-profit hospitals may be better equipped to survive under market conditions and public hospitals would thus be disadvantaged, further aggravating equity problems.

Selective contracting may have a substantial impact on the wider health care system. Firstly, introduction of contracted providers may lead to fragmentation or lack of co-ordination within the broader public health system. Secondly, contracting could lead to competition between contractors and public providers for staff resources, particularly where supply is already constrained, leading to increasing salaries and to public hospitals being drained of key personnel, or suffering from increased staff turnover (Mills 1995). Thirdly, contracts can lock scarce resources into a particular allocation, even when changed circumstances dictate a reallocation.

4. TYPOLOGY OF THE ELEMENTS OF CONTRACTUAL ARRANGEMENTS

The contracting process involves defining the service to be provided and the conditions that govern the contract, and implementing and monitoring the contract. In addition, there will be a framework of rules and regulations that govern the contracting process and which are not specific to each contract. The crucial issue in contract design is ensuring that there is an efficient outcome.

The theory of contracting is part of broader economic theory concerned with the agency relationship (MacDonald 1984, Ryan 1992, Guesneri 1989, Lazear 1989, Ledyard 1989, Stiglitz 1989). The agency relationship arises out of the existence of asymmetry of information between individuals involved in a transaction. The agency relationship is characterised by a principal (ill informed individual) and agent (informed individual) both of whom seek to maximise their utility. Because of diversity of interest and asymmetry of information, the principal has to devise a contract or methods of remuneration to ensure the agent does not cheat. Thus the rules in the contract are crucial. The contract creates a distribution of risk and responsibility between client and contractor (Walsh 1995). Different distributions will have different implications for the price of the contract. For example, if all the risk that workload may vary is placed on the contractor, it will require a higher price than if the risk is more equally shared. In the review below of elements of contractual arrangements, attention is focused on what is known, or hypothesised, about their implications for efficient outcomes.

4.1. Rules of the game

Regulatory environment

All governments constrain the operation of the private sector in various ways, as well as having rules and regulations that govern all government contracts. For example, minimum wage legislation may affect the wages paid by the private sector, and there may be constraints on market entry such as controls on the establishment of private medical facilities. Firms bidding for government contracts may be required to show evidence of their financial state of health, and to provide a cash or bank guarantee. The regulatory environment will influence the availability of private providers and firms, their profitability, and their willingness to bid for government contracts.

Eligible bidders

Tendering can be selective or open, or a single contractor can be approached to negotiate a contract. McCombs and Christianson (1987) argued that open contracting is likely to have the advantage of encouraging new entrants, increasing competition and reducing prices. However

administrative and monitoring costs are likely to be higher because winners may be less experienced, and there is a risk that contractors may default on their responsibilities. Moreover, quality considerations need to be introduced at some stage - if not in the bidding process, then in the selection of bids. However, quality is difficult to assess, especially for health care provision, and experience may be used as a proxy. With selective tendering, already experienced firms are pre-selected to bid. Prices are likely to be higher than in a more open competition, but costs of monitoring the contract and of contract failure lower.

Contracting without competition may be used when there is only one possible contractor, or if the advantages of a close relationship with one contractor are perceived to outweigh the disadvantages of lack of competition. In the health and social services field, there is some debate over the merits of competition versus a strategy that recognises the mutual benefits each side gains from the contract (Le Grand and Bartlett 1993). This is particularly the case where the contractor is a not-for-profit service provider (Gilson et al 1997).

Most governments are likely to have established rules on the circumstances under which tendering need not be competitive, and on the circumstances in which invitations to bid can be limited to a restrictive list. Performance contracts within the public sector would not usually be awarded on a competitive basis, though there may be an implicit threat of sanctions (eg replacement of a management board) if performance is poor.

4.2. Contract design

Service contracted

A range of different services can be contracted out (Table 1). In addition certain functions, as opposed to services, may be contracted including purchasing itself (Hillman and Christianson 1984).

Table 1. Services that may be contracted

Category	Examples
Clinical services	Hospital facility Primary care facility Specific specialty or primary care service Specific diagnostic procedure Specific surgical procedure Public health activity Laboratory tests
Non-clinical services	Pharmacy Catering Laundry Cleaning Maintenance (equipment, buildings) Security
Functions	Personnel recruitment and employment Management Printing/photocopying Building design and construction Computing Purchasing Finance Legal services

Not all the elements of a service may be contracted. For example, the management of a hospital could be contracted out, but otherwise the facility and staff left in public ownership/employment. Alternatively, the contractor may supply the ancillary workers but not the professional staff. The greater the extent of contracting, the more complex organisational relationships may become, with a move away from a hierarchically-organised institution to an inter-organisational network (Walsh 1995).

Contract specification

Walsh (1995) proposed two basic approaches to specifying the work to be done in a contract. The first states the outcome and leaves it up to the provider to determine how the work is done. This is feasible for activities such as cleaning, but is much less easy for contracts for clinical care. The second states the methods to be used, for example a test to be done, or even just the workload, for example number of procedures. Because of the difficulty of specifying outcome, Walsh suggests that contracts will generally be a mixture of method and performance.

A method-based contract involves less risk for the contractor than a performance-based contract. Hence a contractor will normally add a risk premium to a performance-based contract to cover work that may be required. The client will thus pay a higher price, and despite the specification in performance terms, may still have difficulties ascertaining quality.

The level of detail in contracts will vary greatly depending on the nature of the service and the ease of specification. For a service like catering, it may be fairly easy to specify a diet in terms of quantity and quality. In clinical care it may be very difficult to specify precise services, and these may be settled by negotiation after the contract is agreed.

Indeed, recent research on contracts in the UK has highlighted that contracts are often broadly focused, informally worded, deliberately incomplete, and reliant on informal mechanisms for dealing with disputes (Flynn and Williams 1997, Spurgeon et al 1997). They conform more to what are termed 'relational contracts' (MacNeil 1978) where the contract is less important than the relationship between the parties over time.

Bidding price

There are many different approaches to specifying the bid price, depending on the service to be contracted and the degree of uncertainty on the workload. The mode of payment for contracts is generally regarded as crucial in providing powerful incentives which influence provider behaviour (Barnum, Kutzin and Saxenian 1995). In the case of hospital clinical contracts in the UK NHS, in the early years of the internal market, contracts were most commonly either block or cost and volume (Robinson and Le Grand 1995). In block contracts, access to a defined range of services is provided in return for an annual fee. Where the defined range of services encompasses the whole hospital, this is equivalent to a global budget. In the context of the NHS, block contracts had the advantages that the information requirements were relatively small, and they perpetuated existing service arrangements (which the government required in the first year of the internal market). Cost and volume contracts specify the provision of a given number of treatments or cases at an agreed price. If the actual number exceeds this, they are paid on a cost-per-case basis.

Cost per case contracts were initially less common in the NHS, though their frequency has been increasing. Other pricing systems found in contracts include cost per person per time period (ie capitation) and cost per unit of service. Capitation payment is particularly common for primary care services, though is increasingly being introduced for hospital care. Capitation has the advantage from the point of view of the client of placing a cap on total contract cost, unlike cost per case or per unit of service which may represent an open-ended commitment. However, since a crude capitation (unadjusted for likely need for health care) shifts the financial risk entirely to contractors, they will require a risk premium to take on the contract, and are likely to seek to 'cream-skim', i.e. select the cheaper cases to treat, and to minimise care given. Monitoring systems seek to control this. An alternative approach, now much investigated as capitation systems are extended to hospital care where risk of loss is much greater, is to adjust the capitation payment for risk. Such adjustments are used in some managed care arrangements in the US, for example for Medicaid patients (US GAO 1993a), and are necessary in the reformed Dutch health care system (Van de Ven et al 1994) and in the health sector reforms in Colombia (Gonzalez-Sedano 1995).

Capitation payment may be accompanied by other payments: in the case of primary care, fee-for-service for particular, desired procedures, and standard allowances as contributions to costs of such components as premises, training, and support staff.

Fee-for-service contracts are generally considered undesirable because of the incentives they provide to increase the volume of care (Barnum, Kutzin and Saxenian 1995). For historical reasons, and because this mode of payment is usually favoured by the medical profession and the hospital industry, fee-for service contracts still persist. Their tendency to produce cost inflation may be curbed by adjusting fees downwards if an agreed volume of services is exceeded (as in some Canadian provinces (Lomas et al 1989) and Germany).

An alternative form of bidding is where the client sets the price per item of service in advance and contractors put in bids to deliver this at the maximum standard they think affordable. In addition, they may be required to offer a rent for the use of the facilities of the client (eg kitchens, consulting

rooms). This approach may be attractive to budget-limited public organisations, since it guarantees that the cost of the contract will not exceed their budget. However, it runs the risk of discouraging bidders or attracting low quality providers if the price is set too low, and in the absence of good information on actual costs in either public or private sectors, the price may be quite arbitrary.

Saltman (1995) distinguishes between 'hard' and 'soft' contracts. In a hard contract the price is fixed in advance, and the relationship is more adversarial with litigation if something goes wrong. A soft contract may be agreed particularly between units which share common ownership; price and volume may be discussed initially but not agreed until the end of the contract period when terms that are mutually advantageous can be agreed. Such contracts resemble MacNeil's relational contracts (MacNeil 1978).

Single or multiple winners

The American contracting literature contains a debate on the relative merits of having a single winner versus multiple winners. The prospect of multiple winners is likely to increase the attractiveness of bidding, and awarding a number of contracts maintains a number of firms in the market (and thus potential competition in future rounds of bidding), provides backup if one winner defaults, helps to ensure availability of services if demand exceeds that anticipated, and makes contract termination a feasible threat for poor performers since other service providers are available (McCombs and Christianson 1987). However, if the number of potential bidders is relatively few, the incentive to bid low prices may be weak, and economies of scale may be lost by dividing up the contract. Multiple winners are more likely in contracts for primary care than for hospitals, where economies of scale may limit the number of suppliers.

Contract price

Winning bidders may be reimbursed at the rate of their bid. However, even where there is one winner only, and especially if there are more, bidders may not reveal their true costs in their bid. They may bid high and if all bidders do this, over time the distribution of bids will be inflated. Various alternative approaches can be used to counter this. For example the 'competitive rule' involves reimbursing all winners at the level of the highest winning bid, the lowest excluded bid, or

somewhere between (McCombs and Christianson 1987). Since most winners will receive more than they bid, there is little incentive to submit bids in excess of real costs plus a normal rate of return: it does not increase reimbursement but does increase the risk of losing.

Contract duration

Contracts can be for one or more years. Short-term contracts, such as for 1 or 2 years, increase competitive pressures and make it easier to change unsatisfactory contractors. However, they have their costs. Contractors may be reluctant to invest in equipment or training if they think they may lose the contract in the near future. Clients have higher monitoring costs if contractors are less committed, and also bear the costs of frequent re-tendering. It has been suggested in the context of the UK that longer term contracts would be desirable, since they would encourage collaboration and effective sharing of information and avoid excessive transactions costs (Robinson and Le Grand 1995). Indeed, the new government's reforms include the requirement for longer term, more cooperative contracts (Mays forthcoming). Trust can develop in long-term relationships: trust is efficient, since it reduces the need for detailed and expensive monitoring of performance (Walsh 1995).

Sanctions for non-performance

Walsh (1995) makes a distinction between punishment-based and co-operative contractual approaches. The former assumes that client and contractor have different interests, and each seeks to exploit the other. Sanctions are required to discourage the contractor from failing to deliver. A co-operative contract assumes that the two parties have interests in common, and that events outside the contractor's control are just as likely to affect contract performance. Hence the best solution is for client and contractor to work together to resolve problems. Such contracts are more likely for complex services such as medical and social care because of the difficulties of defining and checking on non-performance, whereas punishment-based approaches are more common for simpler services.

Price-changing rules

Longer contracts need to include provision for changing prices. Allowing the whole of any wage or price inflation to feed its way through to the contract price provides the contractor with no incentive to economise or adapt to new relative prices. However, excessive controls on the contract price will encourage the contractor to cut corners and under-perform (Lalta 1993).

4.3. Contract implementation

Requesting bids

A variety of approaches can be used to identify potential contractors. At one extreme, a direct approach can be made to a supplier if it is believed that there is no viable competition, and thus no point in going through the expensive process of competitive bidding. Alternatively, where specific expertise is sought and is in fairly limited supply, a short-list of providers can be directly approached and invited to bid. At the other extreme, invitations to bid can be widely advertised in the press.

Financing the contract

Normally contracts are financed from government or public agency budgets. However, when income results from the performance of the contract, income or profit may be shared between contractor and client, to encourage efficiency and maximum use. Such provisions are common in leisure service contracts, for example (Walsh 1995).

Location of responsibility for contract management

Management of the contracting process has two components: specification and approval of the contract, and monitoring of the performance of the contractor. These may be done by the same or different bodies. In some countries, particularly the poorer ones, the contracting process may be highly centralised, with approval required from a central tender board. It may even itself be contracted out (Hillman and Christianson 1984). In other countries both processes may be handled at the local health authority or health facility level. Management responsibility may also depend on the service contracted: national tenders may be agreed for some services (e.g. drug purchase), and others left to local tenders (e.g. building maintenance).

Various approaches are taken to try to enforce contracts. Experience indicates that responsibility for monitoring performance and enforcing standards needs to be clearly defined, and sanctions such as fines may be employed especially in manual services. In professional services, clients can try to ensure that contractors hold similar values to their own - for example through taking account of a contractor's reputation in selecting a winner. In addition, the existence of a quality assurance system in the contractor may reduce the monitoring that clients need to do. Such systems have developed rapidly in recent years, and can be interpreted as one reflection of the commitment of the contractor to the market.

Well-informed consumers can be a valuable monitoring tool, especially where contracts are awarded competitively. Governments can encourage consumer influence by collecting and publishing information on benefits, consumer rights, provider performance, and consumer satisfaction (Van de Ven and Van Vliet 1992).

5. METHODOLOGICAL APPROACHES FOR EVALUATING CONTRACTING

Methodological issues concerning the evaluation of contracting have been little discussed in the literature. From the point of view of the public enterprise considering contracting, the relevant question is the difference between the costs of providing the service itself and the costs of contracting out, which include the costs of the contract itself plus the transactions costs of managing the contracting process. The question is thus how costs will change at the margin.

These costs are difficult to ascertain in practice. They imply a before and after comparison, which is always prone to be affected by environmental changes (Appleby et al 1993) or by reorganisation of the pattern of service management or changes in service standards which are introduced at the same time as the contract. With and without comparisons - for example comparing public health centres with those run by contracted private providers - avoid the confounding influence of environmental change over time but have a different set of problems to do with the comparability of the two sets of

health centres. Both methodological approaches encounter the problems of public accounting systems which rarely identify clearly the costs of particular services let alone the transactions costs of contracting, and make it difficult to identify costs in a comparable way (Walsh 1995). Commercial confidentiality may also make both public and private sectors unwilling to participate in evaluation. Finally, it is important that evaluation takes a long time-horizon, since initial bids on the introduction of contracting out may be low, and may rise over time as firms gain a stronger market position.

The problems of assessing the success of NHS reforms led Bartlett and Le Grand (1993) to propose an indirect approach to evaluation (in this case of the creation of hospital trusts). They specified criteria for evaluation - productive efficiency, extension of consumer choice, responsiveness to users' wants and needs, and equity (treatment related to need). They then argued that to meet these criteria, the following conditions were necessary based on micro-economic theory: a market structure competitive on both the purchaser and provider side; both purchasers and providers should have good information about the costs and quality of the service being provided; transactions costs must be low; both purchasers and providers must be motivated to respond to market signals; and there should be no opportunity for purchaser or provider to 'cream skim'.

6. LESSONS OF EXPERIENCE FROM DEVELOPED COUNTRIES

Most evidence on the success of contracting in relation to health services comes from the US and UK and relates to contracting of hospital services (and most UK evidence relates also to competitive tendering). Evidence is available on financial savings and the source of savings, transactions costs, and quality changes. Evidence on contracting of primary care services is scanty, but there is some recent literature from the UK, US and Scandinavia.

6.1 Hospitals: clinical and support services

Savings

In the UK, large savings have been claimed as a result of competitive tendering of support services such as cleaning and catering in the NHS. In 1986, a National Audit Office study reported savings which amounted to about 20% of the costs before competition (Walsh 1995). A study by Domberger et al (1987), of domestic costs in around 1500 hospitals, found that hospitals which had contracted out services reduced costs by 34%, and those where the in-house provider won the contract reduced costs by 22%. Milne and McGee (1992), on the basis of a study of domestic and catering contracting in a regional health authority concluded that 'when looked at in terms of the costs saved, particularly for domestic services but also for catering, it must be judged some success. This conclusion stands, even when account is taken of the financial costs of setting up competitive tendering and the attendant cost of redundancies'. Gleeson (1996) estimates cost savings of approximately 1 billion pounds per annum as a result of the contracting out of NHS services.

This evidence is strengthened by evidence of significant cost savings in contracting out local authority support services, particularly refuse collection, building cleaning, and grounds maintenance (Walsh 1995). On the basis of these and similar studies from other countries, Walsh concludes that there are savings to be made on direct service costs, and that the greatest savings are likely to be found in the simpler, more repetitive services where unskilled labour can be used. However, there is some limited evidence that some of the savings from contracting can be eroded over time. In both the US and UK, there is evidence of under-bidding, whether accidental or intentional, in the first round of competitive tendering, and Szymanski and Wilkins (1992) found in their study of refuse collection that the cost savings associated with contracting fell significantly four years after the initial contract, coinciding with contract re-negotiation. Since the structure of the market may change significantly over time, with either increased monopoly or the entry of new firms, it is difficult to judge the long-term impact of contracting on costs.

The evidence on costs of contracted hospital clinical services is even more complicated. Evidence from the reformed UK NHS has been very slow to become available, partly because of the

previous government's antipathy to evaluation. While the first 'wave' of trusts did meet their financial objectives, Bartlett and Le Grand (1993) show this was not surprising since the market was heavily managed and they were a self-selected group of hospitals that were significantly more efficient than their non-trust equivalents. Limited evidence from health sector contracting in the US shows the emergence of long-term relationships, the consequent decline of competitive bidding, and a decreasing importance of price after the initial contract round (Propper 1993, Broomberg 1994). Competition took place for new contracts, not the re-negotiation of old ones. More recent evidence from the UK corroborates these observations: Flynn and Williams (1997) and Spurgeon (1997) comment on the extent to which contracts between Trust hospitals and District Health Authorities shifted over time towards relational contracts, involving long term, trust-based relationships rather than competitively awarded 'spot contracts'. A recent very comprehensive review of all the evidence available - which is likely to be the last word on the subject since new reforms are being introduced - concludes that trust status had relatively weak effects on provider performance (Mays forthcoming). Reasons included the relative absence of meaningful supply-side competition, government actions which had the effect of limiting competition, and purchasers who were not very effective at putting trusts under pressure. Indeed, the same review concludes that the introduction of health authority purchasing was associated with little change for good or ill.

Sources of savings

Sources of savings from contracting out have been ascribed to technical improvements in efficiency, for example from changes in factor mix, reduction in pay and conditions of workers, and increased pace of work. Managers in the UK NHS frequently argue that improvements have been made in work organisation and productivity. However, there is evidence of significant cuts in wages, especially in labour intensive, unskilled services such as cleaning (Jackson 1994, Walsh 1995). Lower wages, poorer conditions of service and reduced labour have imposed costs on the government (loss of taxes and increase in welfare benefit payments) which have been argued to erode savings (Carnaghan and Bracewell-Milnes 1993). An important point is that to the extent that savings depend on lower employment costs, their feasibility depends on the local labour market. Much of the evidence of savings in the UK relate to a period of relatively high unemployment and

government challenge to the power of trade unions. Similar savings are unlikely to be attainable where labour markets are tighter and/or union power stronger.

Transactions costs

Some calculations have been made of the transactions costs of introducing and maintaining contracting. Walsh and Davis (1993) estimated the costs of preparing for competitive tendering in UK local government at 7.7% of the annual contract value. They also found that the client costs of managing contracts were about 30% higher than the costs of managing the direct provision of the service. The average cost of monitoring contracts was 6.4% of the total value of the contract, with some services up to 10%. The Audit Commission (1993) found a range of 1.4% for education catering to 12.5% for vehicle maintenance. In the US, the costs of managing contracts have been estimated to be higher, often up to 10% and even 20% of the value of the contract (Walsh 1995). The costs of monitoring social care contracts in the UK are said to be high. The issue of transactions costs in the NHS have been extremely controversial since management costs appear to have greatly increased (Robinson and Le Grand 1995 p34), though exact figures are disputed. Estimates by Glennester and Le Grand (1995) suggest additional administrative expenditure of approximately 400 million pounds per year in the NHS, with administrative staff having increased from approximately 4600 to 13,000 as a result of the reforms. Similar concerns have been expressed in relation to the costs of organisational changes in government structures in New Zealand (Boston et al 1991).

Quality changes

There is mixed evidence on quality changes as a result of contracting out. In the UK NHS, there have been a number of instances of contractors withdrawing or failing to meet quality standards, for example in hospital cleaning. However, contracting has led to clarity on standard specification which was previously absent, and a level of monitoring which previously did not occur. In addition, there is evidence that quality improves over time, as both client and contractor gain experience. Thus the overall judgement seems to be that contracting leads to improved quality of some non-clinical services (Walsh 1995).

However, it is of interest that private sector bidding for public sector hospital contracts has been distinctly patchy, even in the UK where it might be thought that private firms should be readily available. Milne (1987) found that 63% of 32 hospital contracts had no outside bids, with a particular shortage of bids for catering contracts. In general, profit margins on contracts for ancillary services do not appear to be very high (5-7% according to Milne and McGee 1987). However, the threat of an outside bid appears to have led to improvements even where the contract was won by the inside bid or was uncontested.

Very little evidence is available on the results of contracting for hospital clinical care, hence questions of whether quality as perceived by users improves or worsens remain unanswered. Cream skimming does not appear to have occurred, though in some areas there was differential speed of access to hospital care depending on who purchased the services (GP or local health authority purchaser) (Mays forthcoming).

6.2 Primary health care

Contracts for primary care exist in a number of European countries, particularly the UK and Scandinavia. The introduction of contracts has thus not been an issue, with many contractual arrangements of long standing. The focus of attention has not been the relative efficiency of direct provision versus contracting, but rather the desirability of different ways of paying General Practitioners (GPs) and the primary care team, and different degrees of specification of performance requirements.

Payment to primary care physician can be on a fee-for-service basis (eg Germany) but not infrequently is capitation-based (eg UK, Netherlands). Often the payment system may be mixed, using fee-for-service for services where expansion is desirable (eg preventive care) and capitation for the rest. The focus of most evaluation has been on the effect of different payment systems on the volume of care provided.

Effect on services provided and costs

In the UK until 1990, the GP contract was extremely vague: in the terms of Culyer et al (1990) 'a GP's got to do what a GP's got to do!'. Per item fees were paid for certain services, such as maternity, vaccination and cervical cytology. Hughes and Yule (1992) comment that the effect of remuneration on GP behaviour had been the subject of little research but much speculation. The new contract introduced in 1990 sought to specify core services which all GPs were expected to provide and to relate payment to performance. In particular, fees were introduced or increased in order to encourage the provision of certain services, and in some cases payment was conditional on reaching a certain target level. There have been evaluations of the impact on the provision of, for example, cervical cytology, childhood immunisation, and skin lesion removal. In relation to the first two, payments are target-related.

In a study of the effect of fees on maternity care and cervical cytology before and after 1990, Hughes and Yule (1992) concluded that changes in fees prior to 1990 had little effect on the supply of services, but that the introduction of target payments for cervical cytology had had a major impact. Lynch (1994) sought to explain why over 25% of GP practices in the Greater Glasgow area did not qualify for the high target payments for immunisation in the last quarter of 1991/2. It was apparent that while financial incentives were important in encouraging high coverage, they were not sufficient alone to assure the high update rates desired by the government. Brown et al (1992) found that the introduction of a financial incentive for minor surgical procedures was followed by a large rise in skin lesion removal by GPs: presumably as a result of the changed payment system.

The few studies of budget-holding GPs in the UK suggest that the introduction of flexibility between drugs expenditure and expenditure on other services (previously drug costs were paid for separately) has encouraged a lower rate of increase in drug costs (Glennester et al 1993) because of lower volumes of prescribing and more rapid increase in generic prescribing (Gosden and Torgerson, 1997). There is also evidence of reduced hospital referrals amongst budget holding GPs (Gosden and Torgerson, 1997), although the cost implications of this have not been measured.

A few studies from the US evaluate the impact of contracting on the costs of delivering PHC. Begley, Dowd and McCandless (1989) evaluated 9 primary care projects set up in Texas to service low income people without health insurance. Models of service delivery included public clinics, public hospital outreach, private-for-profit health maintenance organisation, and private providers contracted by a local agency. Those projects following the public clinic model (ie using either project staff or local providers to provide services at a clinic) had lower average costs than those following a private provider model (providing services through the offices of local private providers).

McCombs and Christianson (1987) reviewed the literature on competitive bidding for health services under public programmes in the US. A number of the schemes reviewed had a primary care content, though no contract was specifically for primary care. They emphasised the complicated nature of what appears to be a simple process. They concluded that the performance of bidding systems is likely to be influenced by complex interrelationships among the market structure and characteristics of the product or service for which bids are submitted, the incentives in the bidding system design for providers and consumers, the political influence of provider associations, and the manner in which the bidding process is implemented and subsequently administered. They imply that competitive bidding may not produce cost savings because of the various influences on the contracting process.

The growth of managed care in the US has had major implications for the delivery of primary care (Kane 1995). The primary care physician is conceived of as a 'gatekeeper' and may be placed financially at risk (eg through the use of capitation payment systems, and withholding of a share of payments till the end of the year when the status of the referral fund is known) in order to encourage cost containment. Schlackman (1993) reported that almost 50% of HMOs pay primary care physicians by capitation, 40% by fee-for-service, and 13% by salary. 60% use withhold accounts, most of whom withhold 11-20%, and 25% place the individual physician (as opposed to the pool of physicians) at risk. The strategy of selective contracting promises greater patient volume to specific providers who agree to provide services under contract (Kane 1995). The contracts usually specify utilisation controls and discounted prices. Rules such as practice guidelines are also used to shape

physicians' practice. Kane reviewed the evidence on the outcomes of managed care. It appears that under salaried and capitated arrangements, physicians will substitute more frequent primary care for more expensive care. There is no evidence that selective contracting without financial risk-sharing will increase the efficiency of physician practice patterns. It is also difficult to introduce because a particular physician will have few patients under any particular plan. Physician profiling, plus gate-keeping and utilisation review, have been shown to reduce total costs of care. Kane concludes that the most effective managed care combinations are those that include limited choice of provider, an organisational culture that favours conservative practice, and gatekeeping. However limited choice is unpopular with users. Moreover, because those who enrol in managed care tend to be the healthier, the purchaser (eg Medicaid) may end up paying more for enrollees in HMOs than it would if they were in fee-for-service plans. In other words, Medicaid could not capture the savings because premiums were not closely related to health status (US GAO 1993b).

Quality changes

Evidence on the quality impacts of PHC contracts is limited. Alper (1994) expressed concern at the impact of the rapid growth of managed care on the primary physician who is expected to act as gate-keeper and, because of the capitation payment, is put financially at risk. The physician is at the mercy of large carriers offering non-negotiable contracts based on capitation, and bears some liability for services other than his own. Alper's fear was that primary care will become even less attractive for physicians, and that there will be a steady decrease in the quality of primary care. The introduction of contractual arrangements in countries where physicians have been paid fee-for-service and have been accustomed to few controls on their mode of practice is likely to raise very similar concerns. Silverstein and Kirkman-Liff (1995) present a more positive view of the attitudes of physicians to managed care, in a study of physician participation in Arizona's prepaid managed care Medicaid programme. However, they emphasise that remuneration was relatively generous and that physician cost containment through managed care approaches must involve adequate reward for primary care physicians.

Barnum, Kutzin and Saxenian (1995) argue that the need to compete for consumers can counter-act the quality-reducing incentives in capitation payment. They point to the success of the capitation-

financed health plans managed by Kaiser Permanente, which have been leading innovators in cost containment while maintaining quality. They also have very high coverage rates for preventive procedures - another expected benefit of capitation-based contracts. Schlackman (1993) reports successive quality-based compensation models introduced by US Healthcare, an operator of HMOs. Quality of service was initially measured by performance audit and patient satisfaction surveys, and capitation amounts were higher for higher performance. This was unpopular with physicians and proved inflexible. It was changed to a basic age-sex related capitation rate, adjusted by a quality factor reflecting quality, provision of comprehensive care, and cost-effective patterns of utilisation. Kane (1995) argues that numerous analyses of the quality of care of managed plans suggest that managed care medical quality is at least as good as unmanaged care, though patient satisfaction may be lower in terms of perceived quality. Anecdotal evidence in the UK is said to show that budget holding GPs have reduced waiting times (Smee 1995).

There is evidence that capitation contracts for PHC which exclude hospital care encourage a higher rate of referrals (Stearns, Wolfe and Kindig 1992). In contrast, capitated contracts which include hospital care provide an incentive to provide care at the lowest cost level - usually the primary care level. For example, budget holding GPs in the UK are said to be developing new services (such as testing in the practice, and chiropody) on a larger scale than non-fundholders (Smee 1995). In addition, the experience of budget holding GPs in the UK appears to have been very positive with respect to the pressure they have been able to bring to bear through contracts with hospitals to improve hospital efficiency (Glennerster et al 1993, Smee 1995). There is also evidence that the increased linkages between GPs and secondary care providers, specialists and hospitals, has led to some improvement in aspects of quality of care (Gosden and Torgerson, 1997).

Equity effects

Capitation contracts provide an incentive not to enroll those at higher risk of needing medical care if this risk is not adequately allowed for in the capitation payment. Evidence is limited, but HMOs in the US seem to have healthier enrollees than the rest of the population, suggesting that they have selected favourable risks to a certain extent (CBO 1994). Capitated primary care physicians may also avoid enrolling sicker patients (Hillman et al 1989). The potential for cream skinning by fund-

holding GPs in the UK has been identified (Glennerster et al 1994) but seems not to have materialised, probably because of the way in which reforms were introduced and protection for GPs against high cost patients (Mays forthcoming).

7. LESSONS FROM THE EXPERIENCE OF CONTRACTING IN DEVELOPING COUNTRIES

Evidence on the extent of contracting out in developing country health systems is extremely limited (Mills 1997) and evaluation of its advantages and disadvantages has been virtually non-existent. The review here draws largely on the results of research on contracting commissioned by the Health Economics and Financing Programme (HEFP) of the London School of Hygiene and Tropical Medicine over the last few years in Thailand (Tangcharoensathien et al 1997), Bombay (Bhatia and Mills 1997), PNG (Beracochea 1997), Ghana, Tanzania, and Zimbabwe (Gilson et al 1997, McPake and Hongoro 1995), South Africa (Broomberg et al 1997), and Mexico (Alvarez et al 1995)¹, plus some evidence from the very limited other published literature.

7.1 The extent of contracting

In developing countries, experience has thus far been limited to selective contracting for a range of non-clinical and clinical services, and there is greater experience with selective contracting for non-clinical than for clinical services, as demonstrated in Table 2. In addition, the extent of contracting between the public sector and the commercial sector appears to be relatively limited thus far. South Africa provides one exception to these patterns, having had a long history of contracting out to both for-profit and not-for-profit providers of hospital services as well as for a broad range of other clinical service contracts. In total, clinical contracts held by the various South African government authorities accounted for 9.4% of total hospital expenditure in 1995 (Hospital Strategy Project Consortium 1996).

¹ To avoid excessive repetition, these studies are not constantly referenced throughout the following sections; however they are the sources of information whenever information is reported for the relevant countries.

As shown in the table, contracts for provision of hospital services take a variety of forms. In South Africa, Zimbabwe and Papua New Guinea, there are explicit contracts, although in the latter two countries, only single hospitals are covered in each contract. In South Africa, on the other hand, a large number of contracts, covering both acute and long term hospital care, are held with a single for-profit provider.

Several countries also implicitly contract with a range of private, usually not-for-profit providers. As noted above, these are usually with hospitals run by church organisations, although the South African government authorities have similar arrangements with a charitable organisation which runs TB hospitals, as well as with numerous autonomous not-for-profit acute care hospitals (Hospital Strategy Project Consortium 1996). As Mills (1995) pointed out, these contracts are 'implicit' in the sense that there is no obvious competition in the award of the contracts, and governments have not historically specified contract terms or monitored performance. Tanzania is an exception here, since the government has explicit contracts in place with the various church organisations which provide district hospital services (Gilson et al. 1997, Bennett, Russell and Mills 1996).

There are a few examples of contracting for PHC from middle income countries (Swan and Zwi 1997). In Taiwan, private physicians are contracted to provide sterilisations and IUD insertion (Foreit 1992). In Costa Rica, the social security bureau has contracted out responsibility for providing primary health care for a population of 50,000 to a private entity; the contract allows the provider to gain financially if it provides services efficiently (Pezza and Barquero Bolanos 1994).

In the HEFP-commissioned studies, contracting for non-clinical services was more common than for clinical services, covering cleaning, catering, pharmacy, laundry, maintenance, printing and security. In Mexico and Bombay such contracting appeared fairly common, though with differences in which services were commonly contracted out (for example, catering was rarely contracted out in Mexico). In Thailand and PNG, non-clinical contracting seemed more restricted in scope and number of hospitals involved, to cleaning, security and grounds maintenance in Thailand, and

security, cleaning, catering, laundry and maintenance in PNG. In all countries it was likely that contracting was more common in large cities, especially the capital city.

Table 2. Selective contracting arrangements in developing countries

Service contracted for	Country
Non Clinical Services	
Laundry	India, Malaysia, South Africa, Sri Lanka, Indonesia, Bangladesh, Pakistan, Zimbabwe, Mexico, Thailand
Cleaning	Thailand, Jamaica, South Africa, Mexico
Security	Lesotho, South Africa, Malaysia, Sri Lanka
Billing functions	Zimbabwe, South Africa
Catering services	India, Lesotho, Malaysia, South Africa, Mexico, Catering
Equipment maintenance	South Africa, Venezuela, Zimbabwe, Mexico, Uganda
Patient transport	South Africa
Distribution of pharmaceutical supplies	South Africa
Gardening services	South Africa
Waste removal services	South Africa
Clinical services	
Acute hospital care (explicit contracts)	South Africa, Zimbabwe, Papua New Guinea, Tanzania, Thailand, Philippines ²
Acute hospital care (implicit contracts with church/NGO providers)	Ghana, Malawi, Zimbabwe and Nepal, Rwanda, Swaziland, South Africa
Long term hospital care	South Africa (TB and chronic psychiatric care)
Ambulatory care	South Africa, Namibia
Specific ambulatory procedures	Taiwan
Diagnostic services	Thailand (CT, ESWL, MRI) ³ ; Malaysia (CT, X ray, Radiation therapy)
Laboratory services	Nigeria, South Africa
Public health services	India (vector control)
Hospital management contracts	China, Bolivia, South Africa
Blood product supply	South Africa
Supply of nursing personnel	South Africa

Modified from: Bennett, Russell and Mills 1996. Additional sources: Mills 1995, Kutzin 1995, Hospital Strategy Project Consortium 1996.

² In the Philippines and Thailand, the contracts are held by the social insurance system.

³ CT: Computerised tomographic scanning; ESWL: Lithotripsy; MRI: magnetic resonance imaging

7.2 The rationale for contracting

In the HEFP case studies reviewed, non-clinical contracting was usually justified in terms of lower costs, less hassle for managers, and obtaining greater flexibility in the use of labour. The justification for clinical contracting was either the unavailability of the service in the facility or area, or the inability of government authorities to provide a service identified as necessary. In several contracts reviewed in South Africa, no explicit rationale could be identified (Hospital Strategy Project Consortium 1996).

7.3 Contract design

The HEFP case studies revealed considerable variety in service specification, even for the same service. For example, the following variants occurred in catering contracts in Bombay:

- the hospital provided the space and facilities, for which the contractor paid rent and utility charges
- the hospital provided the space only, and the contractor the equipment
- the contractor used his own kitchen outside the hospital
- the contractor supplied only the staff, with the hospital responsible for all else.

Similarly in South Africa, in one contract for district hospital services the contractor built, equipped, staffed, and managed a hospital. In a second contract for similar services, medical staff were employed by the government and in a third, medical and nursing staff.

Diagnostic service contracts showed a distinctive pattern, with a private company providing equipment free or at a nominal rent. In return, a fee per test or case was paid; in the case of laboratory services in Mexico City, all materials required were also purchased from the company.

Agreements with mission health care providers were formalised as contracts only in Tanzania, where a formal document was agreed between the diocese and the MOH. Elsewhere, the agreements were very vague.

Contracts varied considerably in how tightly they were specified and in what terms. Bombay catering contracts specified meals of a specific content, a PNG security contract the number of guards, and Thai cleaning contracts the area to be cleaned. The Thai equipment contracts specified the type of equipment and the fact that it should be new. Quality specifications appeared to be rare, and non-existent in contracts for clinical services.

Contract duration for non-clinical services was most frequently 1 year, although some contracts lasting up to three years were identified. In some cases, contracts included an option to renew. The clinical contracts reviewed in South Africa were of much longer duration; in two cases, contracts were for a 10 year period, renewable for a further 10⁴.

With regard to sanctions for non performance, in Bombay and Thailand, fines were commonly specified for non-performance; in PNG termination was the only option. Most other contracts reviewed failed to specify sanctions.

7.4 Contract implementation

Non-clinical contracts tended to be consistently agreed through a competitive process involving calling for bids through newspaper adverts or hospital notice-boards. However, changing a contractor was rare except for maintenance, printing and security in Mexico. In PNG, contracts had even been renewed against hospital advice.

The number of bidders for catering contracts was relatively few in Bombay, probably because the contract tender fixed the price per meal at a relatively low level. Similarly in Thailand for cleaning, the unit price was fixed and since it was well below private sector rates of payment, relatively few firms were interested in government contracts. In PNG, however, many firms were interested in bidding for security contracts, probably because start-up costs were very low, and staff could

⁴ these long durations arose because the contractor had financed the construction of the hospitals

readily be recruited at low wages. Similarly in South Africa, competition for most non clinical contracts appeared to be intense, with numerous firms bidding in all cases.

Clinical contracts were less commonly awarded competitively. In Mexico, it appeared to be up to the state to decide on the provider to be contracted, and similarly in Thailand the teaching hospital chose the private company to supply the equipment (or was approached by them). In such circumstances, pricing the contract seemed to be fairly arbitrary. In Mexico the price was based on the national fee schedule but considerable local leeway was allowed. The South African district hospital contracts had originally been negotiated, but one renewal had been done on a competitive basis. All mission/government contracts were agreed without competition.

In South Africa, Thailand, and Zimbabwe user fees were chargeable for some of the services under contract. In both South Africa and Zimbabwe, user fee collection and exemptions were handled by a government clerk: indeed, in Zimbabwe the contractor explicitly refused to take responsibility for deciding who should pay, or ensuring payment. Interestingly in Thailand, contractors were generally willing to accept the hospital's decision on who could not pay, although in a number of contracts they received no fee for such cases. A few contracts limited the number of exempt or subsidised cases.

Responsibility for management was often not clearly specified. In Bombay, there seemed to be a well organised system for contracting catering, with full involvement of hospital staff. In contrast in PNG, hospitals felt powerless to monitor the contractor or obtain improvements. In one of the South African hospitals, both contractor and government staff were expected to manage the hospital, resulting in lack of co-ordination and even conflict. In Thailand, the main complaint was that the contracting process was tightly controlled by the centre. In the case of non-clinical services, this meant rigid specifications and prices which hospitals had to adhere to although they were unrealistic. Regulations for contracting clinical services had only recently been considered. In mission/government agreements, there was minimal monitoring of mission performance.

7.5 The results of contracting

Despite the growing experience with contracting in developing countries, there is very little systematic data on the impact of these contracts on unit or system efficiency and equity.

The admittedly limited evidence on non-clinical contracting suggests that contracting was capable of delivering services at lower cost. For example, data from Bombay clearly suggested that contractors had lower costs than public providers, and that contracting the catering service was cheaper than direct provision. The same was probably true in Thailand and Mexico. However, it is interesting to note the evidence from Bombay that the quality and quantity of the diet was worse in the contracted service.

In the case of clinical contracts, the study of the contract with a mine hospital in Zimbabwe indicated that the government was able to obtain services of the same quality at a lower cost than the equivalent costs in a public hospital. However, the contract was also noted to be unable to control utilisation and hence total cost, and led to provincial resources being disproportionately concentrated in one district. This led the authors to query whether the contract could in fact be regarded as successful at all.

A recent comparison of contracted and public sector TB hospital services in South Africa found that costs were lower, and quality of care higher, at the contractor compared to the public hospital, although the authors identified a number of important systemic inefficiencies resulting from the contract, including lack of co-ordination between the contractor hospital and other public services (van Zyl et al. 1996).

A larger study of contracted out hospitals in South Africa provided important insights into the gains achievable from contracting (Broomberg, Masobe and Mills 1997). This study demonstrated that the contractors were highly successful in delivering services at a cost below that of the public sector, largely through lower staffing levels and higher productivity. Some structural aspects of quality were superior to that of directly provided services (eg cleanliness and building maintenance), but others

were similar, or inferior. Critically, however, the contractor was able to capture all of its efficiency gains in profits, leading to a situation in which the costs of direct provision were similar (and in some cases lower) than the costs to the government of contracting out.

The series of case studies comparing the performance of 'contracted' church hospitals with public sector hospitals in Ghana, Tanzania and Zimbabwe did not identify any systematic differences in performance or cost, except in the case of Zimbabwe, where the church hospitals were noted to have lower unit costs. These studies found, though, that the church hospitals were characterised by more highly motivated managerial staff, and enjoyed substantially greater autonomy than the public hospitals, suggesting potential for greater efficiency. One serious problem identified by the study was the fragmentation and lack of co-ordination in district health services resulting from the dual lines of accountability when church owned hospitals are introduced into the public health system (Gilson et al. 1997).

Analysis of the sources of efficiency or inefficiency in these various contracts highlights some important trends. Where cost savings were shown, they were in most cases due to some combination of lower wages, lower staffing levels, higher staff productivity, and tighter management of supplies (as found in the UK: Domberger, Meadowcroft and Thompson 1987). For example in Bombay, contract caterers had lower staffing levels in relation to the number of meals prepared than directly provided catering services. The South African contract hospitals used notably fewer staff, across most staffing categories, and emphasised worker motivation through approaches such as performance-related pay. They benefited from greater control over staff than that available to a public hospital manager, for example being able to 'hire and fire' at hospital level - facilitating control over pilferage. Wages were for some staff cadres actually higher than those for public sector workers. The evidence from PNG showed that where contractors paid low wages, this could bring disadvantages of low worker morale and poor performance.

Several studies point to the importance of the payment mechanism in influencing the performance of the contractor. A case study from Mexico, in which a state-owned company contracted with private providers, showed that the average cost per beneficiary was 15% higher than the costs of direct

provision, a result that was attributed to the use of a fee-for-service reimbursement mechanism. In contrast, a capitation based PHC contract for workers covered by the social health insurance system in Mexico demonstrated efficiency gains. In South Africa, contractors were paid per inpatient day, and had longer lengths of stay than the public hospitals studied. In Thailand, there is a capitation payment to hospitals which contract to provide comprehensive care for insured workers: this has led to hospitals contracting with outreach clinics to provide primary care more cost-effectively (Tangchaorensathein and Supachutikul forthcoming).

These studies have also identified a number of problems in the design, management and implementation of contracts which may help to explain the failure in some cases to generate efficiency gains. Firstly, many of the contracts appear to have arisen in an *ad hoc* way, with little explicit justification or evaluation of their likely costs and benefits, and they were often very vaguely specified (Bennett, Russell and Mills 1996, Hospital Strategy Project Consortium 1996, Gilson et al 1997, Kutzin 1995). This suggests that contracting in a developing country environment may have generally failed to live up to one of its objectives, that of clarification of organisational objectives and increased transparency of resource allocation through an explicit trading relationship between purchasers and providers (Bennett, Russell and Mills 1996).

Many contracts also resulted in a shift of most of the contractual risk to the government, thus putting no pressure on contractors to be efficient. This was apparent, for example, in minimal specification of contractor performance (especially in clinical contracts) and/or of sanctions for poor performance, through use of payment methods in which the purchaser bore all the risk, or through long contract terms. Specific examples of these problems were identified in South Africa (Hospital Strategy Project Consortium 1996) and in Thailand (Bennett, Russell and Mills 1996), and are attributable, at least in part, to poor government negotiating capacity. Similar problems were also noted in the contracts or agreements between governments and church hospitals in the study by Gilson et al (1997).

The Thai case-studies of diagnostic equipment and ESWL contracts showed some unusual features. Some contracts appeared highly advantageous to the public sector, and all depended on user fees

as the source of finance. The motivations of private sector ESWL contractors were explained by the reimbursement regulations of the civil service medical benefit scheme, an important source of funds for both public and private health care providers, which would not reimburse the cost of ESWL treatment in the private sector but would pay for the procedure if provided under contract to a government hospital. Other contracts advantageous to the public sector were explained by the concern of private companies to be seen as benefactors, and to provide their machines and services in teaching hospitals where specialists were trained and hopefully influenced in favour of particular technologies and brand-names.

Bennett, Russell and Mills (1996) argue that there is little evidence that contracting in developing countries has met the objective of encouraging provider competition, although as noted above, there has been little explicit effort to encourage competition in most cases. The South African study found very similar results, and in that case, the authors note that directly negotiated contracts appear to more strongly favour the contractor, again suggesting that contractors are often stronger negotiators than governments (Hospital Strategy Project Consortium 1996). There is also the risk, noted by McPake and Hongoro (1993) that, without competition, governments can become dependent on powerful monopolistic contractors.

Experience in some countries suggests that contracting has had mixed success in overcoming bureaucratic restrictions, despite the fact that this is seen as one of its key objectives. Evidence from Lesotho, Thailand and South Africa suggests that contracting has assisted governments or individual hospitals to overcome public service restrictions, but other experiences in South Africa, Thailand, Ghana, Zimbabwe and Tanzania suggest that the public procurement process itself can become highly bureaucratic, undermining the potential efficiency of contracted providers (Tangcharoensathien, Nittayaramphong and Khungsawatt 1997, Hospital Strategy Project Consortium 1996, Bennett, Russell and Mills 1996, Gilson et al 1997). Finally, there is fairly extensive evidence of very weak government capacity to monitor the performance of both for-profit and not-for-profit contractors (Mills 1995, Bennett, Russell and Mills 1996, Gilson et al 1997, Bennett and Mills 1998).

Since the contracts evaluated were of relatively limited scope, consequences for the health system as a whole (Mills 1995) were few. The Thai case-study expressed concern about the access of the poor to high technology services, given that user fees were the means of financing the contracts. The Zimbabwe contract also gave rise to equity concerns because it had led to provincial resources being disproportionately concentrated in one district. The PNG non-clinical contracts protected the contracted services from government cut-backs - whether this was seen as good or bad depended on the importance given to the contracted services relative to those that were cut. In the South African contracts, there was evidence of some fragmentation and lack of co-ordination between the contracted out hospitals and the surrounding primary health care services, which remained under government control.

Taken together, these observations suggest that, despite the fairly extensive experience with selective contracting and other marketisation reforms in both developed and developing countries, systematic evaluation and evidence on their impact remains very limited. The data which do exist show mixed results; there is fairly broad evidence of short-term gains in micro-efficiency, including cost savings and quality improvements, although several studies, particularly in developing countries, have also highlighted short term efficiency losses. It is also generally regarded as too early to judge the long term effects of these arrangements, although there are serious concerns as whether their high transactions and other social costs will reduce or even eliminate overall efficiency gains from these reforms. Finally, there is evidence that the potential efficiency gains from contracting may be undermined by the absence of critical environmental conditions, as discussed further in the following section.

7.6 Conditions conducive to successful contracting

It is possible to draw some tentative conclusions from the limited existing data on key conditions that may be conducive to successful contracting in a developing country environment.

Capacity of the contracting agency

The ability of the contracting agency to manage the contracting process is clearly crucial to its success. In Bombay, catering contracting appeared well organised, with a special central committee and adequate hospital involvement. In PNG, neither central nor local arrangements were satisfactory. In South Africa, health department staff had allowed contracts to persist that were highly favourable to contractors; the same was true of some medical equipment contracts in Bangkok.

Weak government capacity tended to lead to late payment, of which a number of contractors complained. This is likely to have made contractors more reluctant to bid for public sector contracts, thus leading to fewer bidders and higher bids to compensate.

Contract design

It is clear that some services were easier to specify for contracting purposes than others. For example cleaning and catering services, and provision of medical equipment, are relatively straightforward to specify. In contrast, clinical care contracts were rarely specific on the services to be provided, leaving scope for argument on the services contractors should be providing. It could be suggested that vague specification was optimal (based on the arguments in favour of relational contracts); however, there was little evidence of the close and co-operative relationship of relational contracts, but rather a simple neglect of basic requirements to be clear on what government funds were purchasing.

It was notable that contracts tended to be awarded for new services (eg cleaning a new building), thus avoiding the problem of terminating the in-house service. While this may have been a rational strategy for managers, it restricted the savings potentially available.

Limited budgets in poor countries often meant that poor quality services were provided. Inadequately funded contracts, as in PNG, are likely to be a source of unhappiness. Thus contracting out a service may require an increase in expenditure. For example in Jamaica, contracting-out cleaning and portering services cost 25% more than the hospital's previous costs,

but resulted in services of increased quality and scope (LAC Health and Nutrition Sustainability 1995). A judgement needs to be made on whether increasing expenditure in order to obtain higher quality is the best use of scarce funds. A similar cost/quality trade-off was evident from the Bombay data on catering: in this instance lower cost versus lower quality.

The data also highlight the importance of careful design of the price of the contract. Clinical contracts were particularly prone to manipulation by providers, and particularly difficult to monitor. Pricing systems that contain no incentives to control over-supply are undesirable. Fixed price tenders seemed to work relatively well in Bombay and less well in Thailand where the discrepancy between public and private sector prices was too great. In the South African study, initial prices appeared appropriate, but all contracts had built in price adjustment clauses, cushioning contractors from all cost increases and weakening their incentives for efficient production.

Sanctions also needed more attention in contracts. In PNG, termination was the only option and since this would have left the hospital without a service, managers were reluctant to request it. The optimal situation is probably as in Thailand where although financial sanctions were available, they had never needed to be used because the contractor had other incentives to keep the equipment functioning. The South African contracts provided no details on penalties for poor performance, aside from termination of the contract.

Contract implementation

Competitive contracting was the norm for non-clinical contracts and on the whole, competition was forthcoming for tenders, though the number of bidders might be quite small. Evidence was insufficient to judge the relative merits of competitive versus negotiated contracts for clinical care, though there was some evidence that contracts had been negotiated at inflated prices.

Contracts rarely included sufficient specifications or allocation of responsibilities to allow contract performance to be monitored. This was a particular problem for clinical contracts, though non-clinical contract monitoring was also considered poor. Lalta (1993) reported how careful contract specification and monitoring procedures (supported by USAID technical assistance) in a contract

for cleaning in a hospital in Jamaica led to generally satisfactory performance, though expressed concern that such assistance might not have lasting effects. All case-studies indicated the importance of devolving responsibility for monitoring to hospital level.

The characteristics of the supply and labour markets

Contracting out requires the existence of private sector firms capable of managing contracts. This requirement was met for hotel-type services in Thailand, Bombay, South Africa and Mexico, but probably not in PNG. (Availability of contractors with sufficient experience and capacity was a problem in Jamaica - Lalta 1993). These four countries also had sizeable numbers of private health providers, making contracting of clinical services a possibility. Nonetheless, the availability of private firms on its own was not a sufficient condition for successful contracting since public contracts might not be considered sufficiently profitable. This is especially likely to be the case where the private sector is growing rapidly and there are plenty of investment opportunities within it. When growth slows, as in South Africa, there may be more interest in government contracts.

For services dependent on manual labour such as cleaning, the ability of the private sector to recruit cheap labour was clearly an important factor in cost savings. Only in Bangkok was the labour market threatening to make it difficult to recruit cheap labour.

8. CONCLUSIONS

This review has identified a number of important conclusions and unanswered questions in relation to the implementation of selective contracting in the context of developing countries. Perhaps the most important conclusion is that there remains relatively limited and contradictory evidence on the impact of selective contracting on efficiency and equity at the facility and/or at the health system level. This is true for both developed and developing countries, and highlights the need for extensive additional research on the effects of the various reforms now being implemented in various countries.

This review has also shown that many of the theoretical claims on the basis of which contracting reforms are argued to improve efficiency themselves remain ambiguous. This ambiguity is important since it leads to uncertainty as to the determinants of efficiency gains through contracting, and hence, as to the set of conditions that are necessary for achieving efficiency gains.

This is illustrated, firstly, by the set of issues concerning the relationship between the nature of the contract, the contracting process, and efficiency. This review has highlighted several aspects of the design of contracts which may impact on contractor behaviour and hence efficiency, but the relative importance of each of these aspects, their interrelationships, and their individual and combined impacts on efficiency merit further investigation. Regarding the relationship between the contracting process and efficiency, the relative merits of awarding contracts competitively or through direct negotiation remain unclear, as do other issues such as the optimal number of bidders for a contract, and the trade-offs between securing adequate numbers of bidders and ensuring an efficient distribution of risk between the contractor and the purchaser.

Closely related to these issues of contract design and process are questions relating to government capacity to act as a competent purchaser of health services. This review has indicated that efficiency gains from contracting appear to be contingent on government capacity to act as an efficient purchaser, and more specifically, to make the appropriate decisions as to whether and when to let contracts, to design efficient contracts, and to monitor effectively contractor compliance. Conversely, lack of this capacity may lead to inefficiency through exploitation by contractors, through distorted resource allocation (Bennett 1991, Mills 1995), or through uncontrolled expansion of the private sector, creating further problems of fragmentation and inequity (Saltman 1991).

Some analysts have pointed to a generic set of skills and resources that governments require in this context, including skills in planning, economic analysis, and contract design and negotiation, as well as suitable information systems (Bennett, Russell and Mills 1996, Kutzin 1995, Bennett and Mills 1998), and sophisticated government regulatory capacity to carry out such functions as licensing and accreditation (Figueras and Saltman 1997). Not surprisingly, current evidence suggests that most developing country governments lack all or most of these capacity requirements (Bennett, Russell

and Mills 1996, Mills 1995). However, there is as yet limited evidence on the relative importance of these various aspects of government contracting capacity, or on their specific impacts on contractual efficiency. It is thus difficult, without further research, to identify accurately those situations in which governments are likely to achieve efficiency gains, or in which these reforms should be avoided until specific aspects of contractual capacity have been strengthened.

A second critical area of ambiguity concerns the relationship between competition and contractual efficiency. The theoretical literature suggests that at least some degree of contestability for contracts, or preferably actual competition, is required to ensure efficiency gains from contract-based provision. There is also some empirical evidence that where competition or contestability is absent, efficiency may be undermined through contracts biased towards contractors, through exploitation by for-profit contractors, or through governments becoming dependent on a single monopolistic contractor.

The limited evidence available on these issues suggests that the conditions necessary for competition, and even for contestability, are generally absent from most areas of most low and middle income countries (Mills 1995, McPake and Ngalande Banda 1994, Chernichovsky 1995, Saltman 1995). However, there remains scant information on the actual extent of competition or contestability in most countries, an issue that is made more complex by geographical variations in levels of competition, as well as by the fact that both local and international providers may compete for contracts. Similarly, there are still few data on the precise relationships between competition or contestability and contractual efficiency, so that it is not possible to predict the likely success of contracting under various competitive conditions.

This review has also suggested that the success of contracting may be contingent on a number of features of the broader social, political and economic environment. Important factors here appear to include a general political and social environment in which corruption is discouraged, in which contractors share a commitment to public responsibility and contractual compliance, and in which there is an effective legal system to ensure that sanctions for non-compliance pose a meaningful threat. Where such conditions are absent, there is the risk that contracts may be inappropriately

awarded, and that contractors may exploit contracts, thus undermining efficiency (Schieber 1995, Saltman 1995, Bennett, Russell and Mills 1996). There is also evidence that under conditions of inadequate financial resources, contracting may not lead to efficiency gains. For example, financially constrained governments may wish to let only short-term contracts, which may be unattractive to potential bidders. Contract prices may also be set too low, leading to poor quality of services (Mills 1995, Gilson et al. 1997); and contracts may lock public resources into a specific use, limiting the flexibility which governments have to reallocate such resources (McPake and Hongoro 1993, Beracochea 1997). Once again, however, there remains quite limited empirical evidence on the extent to which these various conditions relating to the broader environment, alone or combined, are necessary for the achievement of efficiency gains from contracting, and further research will be required before it is possible to predict the likely success or failure of such reforms under various environmental conditions.

A final area of ambiguity identified by this review concerns the impact of the relationship between public purchasers and contracted providers on provider efficiency. More specifically, it is not yet clear whether contracting leads to transparency in the contractual relationship, or to decentralisation of management authority, nor is it clear to what extent these consequences of contracting contribute to efficiency gains. The potential advantages of a greater awareness of needs, prices, quality and quantities in resource allocation are dependent on the availability of detailed information, and on the administrative capacity to use this information. The evidence, cited above, on poor government administrative capacity in many developing countries suggests that contracting may not necessarily produce the degree of 'transparency of trade' claimed by proponents of these reforms. Similarly, while contracting will clearly encourage some degree of managerial decentralisation relative to direct public management, the general lack of managerial expertise in developing countries may prevent effective decentralisation amongst the majority of providers, even where this is formally introduced. In developed countries and in some middle income developing countries, however, contracting may produce these desired consequences.

Together these observations suggest that there remains much uncertainty as to the overall impact of contracting on efficiency and equity, as well as to the determinants of efficiency and the necessary conditions for ensuring efficiency gains when such reforms are implemented.

REFERENCES

Alper PR (1994) Primary care in transition. Journal of the American Medical Association 272(19) 1523-7.

Alvarez F, Rodriguez C, Cruz C (1995) Contracting out of clinical and non clinical services: the case of Mexico. Paper presented at the second meeting of the Public Private mix network, Worthing, 4-8 Sept.

Annel A. (1995). Implementing planned markets in health: The Swedish case. In Saltman RB and Von Otter C (eds). Implementing planned markets in health care: Balancing social and economic responsibility. Open University Press, Buckingham.

Appleby J, Smith P, Ranade W, Little V, Robinson R (1993) Monitoring managed competition. In (ed) Robinson R and Le Grand J Evaluating the NHS reforms. Kings Fund Institute, London.

Ashton T. (1995). The purchaser-provider split in New Zealand: The story so far. Australian Health Review 18:43-60.

Audit Commission (1993) Realising the benefits of competition: the client role for contracted services. HMSO, London.

Barnum H, Kutzin J, Saxenian H (1995) Incentives and provider payment methods. International Journal of Health Planning and and Management 10:23-45.

Bartlett W and Le Grand J (1993) The theory of quasi-markets. In Le Grand J and Bartlett W (eds) Quasi-markets and social policy. Macmillan, London.

Bartlett W and Le Grand J (1993) The performance of trusts. In (ed) Robinson R and Le Grand J Evaluating the NHS reforms. Kings Fund Institute, London.

Begley CE, Dowd CM and McCandless R (1989). A cost-effectiveness evaluation of primary health care projects for the poor. Evaluation and the Health Professions 12(4)437-52.

Bennett S. (1991). The mystique of markets: public and private health care in developing countries. PHP Departmental Publication No. 4. London: Department of Public Health and Policy, London School of Hygiene and Tropical Medicine.

Bennett S and Mills A. (1993). Health insurance and the private sector. In Bennett S and Mills A (eds). Report of the workshop on the public/private mix for health care in developing countries. London: Health Economics and Financing Programme, Health Policy Unit, Department of Public Health and Policy, London School of Hygiene and Tropical Medicine.

Bennett S and Mills A (1998). Government capacity to contract: health sector experience and lessons. Public Administration and Development (forthcoming).

Bennett S, Russell S, and Mills A. (1996). Institutional and economic perspectives on government capacity to assume new roles in the health sector: A review of experience. PHP Departmental Publication No. 22. London: Department of Public Health and Policy, London School of Hygiene and Tropical Medicine.

Beracochea E. (1997) Contracting out of non-clinical services: the experience of Papua New Guinea. In Bennett S, McPake B and Mills A (eds) *Private Health Providers in Developing Countries: Serving the public interest?* Zed Books, London.

Bhatia M and Mills A (1997). Contracting out dietary services in Bombay. In Bennett S, McPake B, and Mills A (eds). Private providers in developing countries: Serving the public interest? Zed Books, London.

Birdsall N and James E. (1992). Health, government and the poor. The case for the private sector. PHN Working Papers. Washington DC: World Bank.

Borren P. (1993). Searching for the holy grail in the Antipodes. The market reform of the New Zealand health care system. Discussion Paper No. 103. York: Centre for Health Economics, University of York.

Boston J et al (1991) Reshaping the state: New Zealand's bureaucratic revolution. Oxford University Press, Auckland.

Briscoe J. 1989. Adult health in Brazil. Adjusting to new challenges. World Bank Report No. 7807-BR. Washington DC: World Bank.

Broomberg J (1994) Health care markets for export? Lessons for developing countries from European and American experience. Departmental Paper no 12, London School of Hygiene and Tropical Medicine.

Broomberg J, Masobe P and Mills A. (1997) Contracting out district hospital services in South Africa. In Bennett S, McPake B and Mills A (eds) *Private Health Providers in Developing Countries: Serving the public interest?* Zed Books, London.

Brown PAJ et al (1992) Skin lesion removal: practice by general practitioners in Grampian region before and after April 1990. Scottish Medical Journal 37:144-1.

Carnaghan R and Bracewell-Milnes B (1993). Testing the market: competitive tendering for government services in Britain and abroad. Institute of Economic Affairs, London.

Cassels A. (1995). Health sector reform: key issues in less developed countries. Forum on Health Sector Reform Discussion Paper No. 1. WHO/SHS/NHP/95.4. Geneva: WHO.

Cruz C and Zurita B. (1993). The public private mix - the case of Mexico. in Bennett S and Mills A (eds). Report of the workshop on the public/private mix for health care in developing countries. Health Economics and Financing Programme, Health Policy Unit, Department of Public Health and Policy, London School of Hygiene and Tropical Medicine.

Culyer AJ, Maynard A, and Posnett JW. (1990). Reforming health care. An introduction to the economic issues. in Culyer AJ, Maynard AK, and Posnett JW (eds). Competition in health care. Reforming the NHS. Macmillan Press, London.

De Geyndt W. (1990). Managing health expenditures under National Health Insurance. The case of Korea. World Bank Technical Paper No. 156. World Bank, Washington DC.

Department of Health, Republic of South Africa. (1996). Restructuring the national health system for universal primary health care: Report of the Committee of Inquiry into a national health insurance system. Department of Health, Pretoria.

Diderichsen F. (1995). Market reforms in health care and sustainability of the welfare state - lessons from Sweden. In Berman P (ed). Health sector reform in developing countries: Making health development sustainable. Harvard School of Public Health, Boston.

Domberger S, Meadowcroft S and Thompson D. (1987). The impact of competitive tendering on the costs of domestic hospital services. Fiscal Studies 8(4):39-54.

Ellwood P, Enthoven AC, and Etheredge A. (1992). The Jackson Hole initiatives for a twenty first century American health care system. Health Economics 1:149-168.

Flynn R and Williams G. (1997). Contracting for Health. Oxford University Press, Oxford.

Foreit KG (1992) Private sector approaches to effective family planning. Policy Research working paper 940, Population and Human Resources Department, The World Bank, Washington DC.

Gilson L, Adusei J, Arhin D, Hongoro C, Mujinja P, and Sagoe K. (1997). Should African governments contract out clinical services to church providers? In Bennett S, McPake B, and Mills A (eds). Private health providers in developing countries: Serving the public interest? Zed Books, London.

Gilson L, Dave Sen P, Mohammed S, and Mujinja P. (1994). The potential of health sector non-governmental organisations: policy options. Health Policy and Planning 9(1):14-24.

Gleeson G. (1996). The role of market testing in the NHS. British Journal of Hospital Medicine 55(7):449-450.

Glennester H, Matsoganis M, Owens P, Hancock S (1993) GP fundholding: wild card or winning hand. In Robinson R and Le Grand J Evaluating the NHS reforms. Kings Fund Institute, London.

Glennester H, Matsoganis M, Owens P, Hancock S (1994) Implementing GP fundholding. Open University Press, Milton Keynes.

Glennester H and Le Grand J (1995). The development of quasi-markets in welfare provision in the United Kingdom. International Journal of Health Services 25(2):203-218.

Gonzales-Sedano E. (1995). Health sector reform in Colombia. Modelling managed competition for improved efficiency and better quality in health services. World Bank: mimeo.

Gosden T and Torgerson D. (1997). The effects of fundholding on prescribing and referral costs: A review of the evidence. Health Policy 40:103-114.

Great Britain Department of Health. (1989). Working for patients. London: HMSO.

Green A. (1987). The role of non-governmental organisations and the private sector in the provision of health care in developing countries. International Journal of Health Planning and Management 2(1):37-58.

Griffin GC. (1990). Health sector financing in Asia. World Bank Report No. IDP-68. World Bank, Washington DC:

Guesneri R. (1989). Hidden actions, moral hazard and contract theory. In Eatwell J, Milgate M, and Newman P (eds). The New Palgrave. Allocation, information and markets. The Macmillan Press, London.

Hillman DG and Christianson JB (1984) Competitive bidding as a cost-containment strategy for indigent medical care: the implementation experience in Arizona. Journal of Health Policy, Politics and Law 9(3)427-51.

Hillman AL, Pauly MV and Kerstein JJ (1989) How do financial incentives affect physicians' clinical decisions and the financial performance of health maintenance organisations? New England Journal of Medicine 13, 86-92.

Hood C (1991) A public management for all seasons. Public Administration 69(1)3-19.

Hospital Strategy Project Consortium. (1996). Towards equity and efficiency in South Africa's public hospital system. Final Report of the Hospital Strategy Project. Volume 4. Module 3: Cost recovery and contracting out. Hospital Strategy Project Consortium, Johannesburg.

Hurst JW. (1991). Reforming health care in seven European nations. Health Affairs Fall:172-189.

Hughes D and Yule B (1992) The effect of per-item fees on the behaviour of general practitioners. Journal of Health Economics 11: 413-37.

Iglehart JK. (1993). Health Policy Report. Managed Competition. New England Journal of Medicine 328(16):1208-1212.

Jackson PM (1994) The new public sector management: surrogate competition and contracting out. In ed Jackson PM and Price CM Privatisation and regulation. Longman, London.

Jackson PM and Price CM. (1994). Privatisation and regulation: A review of the issues. Longman, New York.

Jimenez J. (1993). Chile's health sector reform. Paper prepared for conference: Health sector reform in developing countries: issues for the 1990s.: Data for Decision Making Project, Department of Population and International Health, Harvard School of Public Health, Boston.

Jimenez de la Jara J and Bossert TJ. (1995). Chile's health sector reform: Lessons from four reform periods. In Berman P (ed). Health sector reform in developing countries: Making health development sustainable.: Harvard School of Public Health, Boston.

Kane NM (1995) Costs, productivity and financial outcomes of managed care. In Saltman RB and Von Otter C (eds) Implementing planned markets in health care. Open University Press, Buckingham.

Kim Y. (1987). Health care financing in Korea. Country paper prepared for the regional seminar on health care financing.: Asian Development Bank., Manila.

Krashinsky M. (1986). Transactions costs and a theory of the nonprofit organisation. In Rose-Ackerman S (ed). The economics of nonprofit institutions: studies in structure and policy. Oxford University Press, Oxford.

Kutzin J. (1995). Experience with organisational and financing reform of the health sector. SHS Paper number 8. WHO, Geneva.

LAC Health and Nutrition Sustainability (1995) Divestment in Jamaica's public hospitals. Management and Financing Update, May.

Lalta S (1993). Cost containment and competitive tendering for support services in the health care system of Jamaica. Institute of Social and Economic Research, University of the West Indies, Jamaica.

Lazear EP. (1989). Incentive contracts. In Eatwell J, Milgate M, and Newman P (eds). The New Palgrave. Allocation, information and markets. The Macmillan Press, London.

Le Grand J. (1991). Quasi markets and social policy. Economic Journal 101:1256-1267.

Le Grand J. (1994). Evaluating the NHS reforms. In Robinson R and Le Grand J (eds). Evaluating the NHS reforms. King's Fund Institute, London.

Le Grand J and Bartlett W (1993) Quasi-markets and social policy. Macmillan, London.

Ledyard JO. (1989). Incentive compatibility. In Eatwell J, Milgate M, and Newman P (eds). The New Palgrave. Allocation, information and markets. The Macmillan Press, London.

Lomas J et al (1989) Paying physicians in Canada: minding our Ps and Qs. Health Affairs 8(1)80-102.

Lynch ML (1994) The uptake of childhood immunisation and financial incentives to general practitioners. Health Economics 3:117-25.

MacDonald GM (1984) New directions in the economic theory of agency. Canadian Journal of Economics 17:415-40.

MacNeil (1978)

Mays N (forthcoming) The impact of the UK internal market 1991-7: a balance sheet of the evidence. In Mills A (ed) *Reforming health sectors*. Kegan Paul, London.

McCombs JM and Christianson JB (1987) Applying competitive bidding to health care. *Journal of Health Policy, Politics and Law* 12(4):703-22.

McGreevey WP. (1990). *Social security in Latin America: issues and options for the World Bank*. World Bank Report No. 8456-LAC. World Bank, Washington DC.

McPake B and Hongoro C (1995) Contracting out of clinical services in Zimbabwe. *Social Science and Medicine* 41(1):13-24.

McPake B and Ngalande Banda E. (1994). Contracting out of health services in developing countries. *Health Policy and Planning* 9(1):25-30.

Mills A (1995) *Improving the efficiency of public sector health services in developing countries: bureaucratic versus market approaches*. Departmental publication no. 17, London School of Hygiene and Tropical Medicine.

Mills A. (1997). Contractual relationships between government and the commercial private sector in developing countries: Are they a good idea in health? in Bennett S, McPake B, and Mills A (eds) *Private health providers in developing countries: Serving the public interest?* Zed Books, London.

Mills (1998) To contract or not to contract? Issues for low income countries. *Health Policy and Planning* 13(1):32-40.

Mills A, Hongoro C and Broomberg J. (1997). Improving the efficiency of district hospitals: is contracting an option? *Tropical Medicine and International Health* 2(2):116-126.

Milne RG (1987). Competitive tendering in the NHS: an economic analysis of the early implementation of HC(83)18. Public Administration 65(2)145-60.

Milne RG and McGee MA (1992) Compulsory competitive tendering in the NHS: a new look at some old estimates. Fiscal Studies 13(3)96-111.

Moore M. (1996). Public sector reform: downsizing, restructuring and improving performance. Revised paper for Forum on Health Sector Reform. mimeo. WHO, Geneva.

Pezza P and Barquero Bolenos J (1994) Clinica Tibas: an experimental response to health system challenges in Costa Rica. Journal of the Royal Society of Health Oct 252-5.

Price MR, Masobe P and Booyesen M. (1993). The public/private mix for health care in South Africa. In Bennett S and Mills A (eds). Report of the workshop on the public/private mix for health care in developing countries. London: Health Economics and Financing Programme, Health Policy Unit, Department of Public Health and Policy, London School of Hygiene and Tropical Medicine.

Propper C (1993) Quasi-markets, contracts and quality in health and social care: the US experience. In (ed) Le Grand J and Bartlett W Quasi-markets and social policy Macmillan, London.

OECD. (1992). The reform of health care. A comparative analysis of seven OECD countries. Health Policy Series No. 2. OECD, Paris.

Robinson R. (1990). Competition and health care: A comparative analysis of UK plans and US experience. Research Report No. 6. Kings Fund Institute, London.

Robinson R and Le Grand J. (1995). Contracting and the purchaser-provider split. In Saltman RB and Von Otter C (eds). Implementing planned markets in health care: Balancing social and economic responsibility. Open University Press, Buckingham.

Ryan M (1992) The agency relationship in health care: identifying areas for future research. Health Economics Research Unit, University of Aberdeen, Discussion paper no 02/92.

Saltman RB. (1995). Applying planned market logic to developing countries' health systems: an initial exploration. WHO/SHS/NHP/95.7. WHO, Geneva.

Saltman R and Figueras J (1997). European health care reform: analysis of current strategies. WHO regional publications, European Series, No 72, WHO Regional Office for Europe, Copenhagen.

Saltman RB and von Otter C. (1992). Reforming Swedish health care in the 1990's: The emerging role of 'public firms'. Health Policy 21(2):143-154.

Saltman RB and Von Otter C (eds). (1995a) Implementing planned markets in health care: Balancing social and economic responsibility. Open University Press, Buckingham.

Saltman RB and Von Otter C (1995b) Introduction. In (ed) Saltman RB and Von Otter C Implementing planned markets in health care. Open University Press, Milton Keynes.

Schieber GC. (1995). Preconditions for health reform: Experiences from OECD countries. in Berman P (ed). Health sector reform in developing countries: Making health development sustainable. Harvard School of Public Health, Boston.

Schlackman N (1993) Evolution of a quality-based compensation model: the third generation. American Journal of Medical Quality 8(2)103-110.

Sheiman I. (1995). New methods of financing and managing health care in the Russian Federation. In Berman P (ed). Health sector reform in developing countries: Making health development sustainable. Harvard School of Public Health, Boston.

Silverstein G and Kirkman-Liff B (1995) Physician participation in Medicaid managed care. Social Science and Medicine 41(3)355-63.

Smee CH (1995) Self-governing trusts and GP fundholders: the British experience. In Saltman RB and Von Otter C (eds) Implementing planned markets in health care. Open University Press, Buckingham.

Spurgeon P, Smith P, Straker M, Deakin N, Thomas N, Walsk K (1997). The experience of contracting in health care. In: Flynn R and Williams G (eds). Contracting for Health. Oxford University Press. Oxford.

Stearns SC, Wolfe BL and Kindig DA (1992) Physician responses to fee for service and capitation payment. Health Affairs 12, 248-57 (suppl).

Stiglitz JE. (1989). Principal and agent. In Eatwell J, Milgate M and Newman P (eds). The New Palgrave. Allocation, information and markets. The Macmillan Press, London.

Swan M and Zwi A (1997) Private practitioners and public health: close the gap or increase the distance? PHP Publications no 24, London School of Hygiene and Tropical Medicine.

Szymanski S and Wilkins S (1992) Cheap rubbish? Competitive tendering and contracting out in refuse collection - 1981-88. London Business School, Centre for Business Strategy.

Tancharoensathien V and Supachutikul A (forthcoming). The social security scheme in Thailand: what lessons can be drawn? *Social Science and Medicine*

United States General Accounting Office (US GAO) (1993a) Medicaid: states turn to managed care to improve access and control costs. US GAO, Washington DC.

United States General Accounting Office (US GAO) (1993b) Managed health care: effect on employers' costs difficult to measure. GAO/HRD-94-3. Report to the chairman, Subcommittee on health, Committee on Ways and Means, House of Representatives, Washington DC.

Tangcharoensathien V, Nittayaramphong S and Khungsawatt S. (1997). Private sector involvement in public hospitals: case-studies from Bangkok. In Bennett S, McPake B, and Mills A (eds). Private providers in developing countries: Serving the public interest?: Zed Books, London.

van de Ven WPMM. (1989). A future for competitive health care in the Netherlands. NHS White Paper Occasional Paper No. 9. York: Centre for Health Economics, University of York.

Van de Ven WPMM, Van Vliet RCJA (1992) How can we prevent cream skimming in a competitive insurance market? In Zweifel P, Frech III HE (eds) Health economics worldwide Kluwer Academic publishers, Dordrecht.

Van de Ven WPMM, Schut FT, Rutten FFH (1994) Forming and reforming the market for third party purchasing of health care. Social Science and Medicine 39(10)1405-12.

van Zyl N, Fourie A, Heunis C, Pelsler A, Roosjen JA, Stander D, van der Merwe P and van Zyl H. 1996. Contracting out of institutional care for Tuberculosis patients in the Free State: An analysis. Mimeo. Centre for Health Systems Research, University of the Free State, Bloemfontein.

Vining AR and Weimer DL. (1990). Government supply and government production failures: A framework based on contestability. Journal of Public Policy 10:1-22.

von Otter C and Saltman RB. (1991). Towards a Swedish health policy for the 1990s: planned markets and public firms. Social Science and Medicine 32(4):473-481.

von Otter C and Saltman RB. (1992). Planned markets and public competition. Strategic reform in Northern European health systems. Open University Press, Buckingham.

Walsh K. (1995). Public services and market mechanisms: Competition, contracting and the new public management. Macmillan Press, London.

Walsh K and Davis H (1993) Competition and service: the impact of the Local Government Act (1988). HMSO, London.

World Bank. (1993). Investing in health. World Development Report 1993. Oxford University Press, Oxford.

World Bank (1995) Bureaucrats in business: the economics and politics of government ownership. Oxford University Press, Oxford.

Yepes F and Sanchez A (1998). Reforming pluralist systems: the case of Colombia. In Mills A (ed) Reforming health sectors. Kegan Paul, London.