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New Directions in Health Economics

by

Ray Robinson



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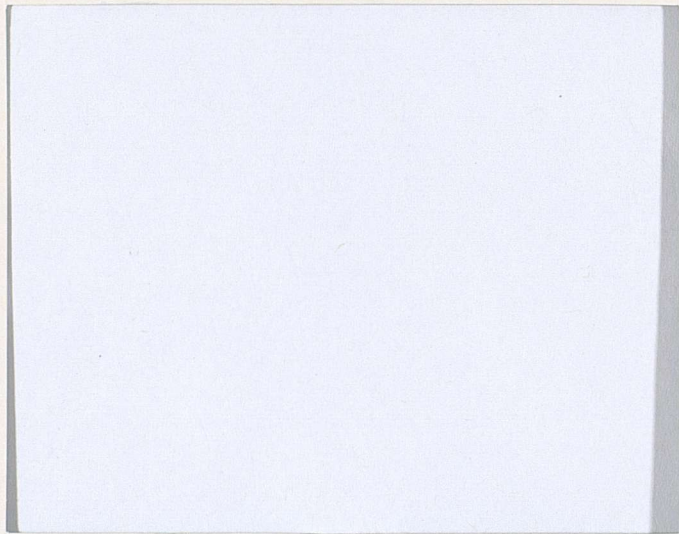
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**INSTITUTE FOR HEALTH POLICY STUDIES
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NEW DIRECTIONS IN HEALTH ECONOMICS

by

**Ray Robinson
Professor of Health Policy
Director of Institute for Health Policy Studies**

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CONTENTS

1.	Introduction	1
2.	Coping with rising costs	1
2.1	Macro Efficiency	6
2.2	Micro Efficiency	8
3.	Priority setting and rationing	14
4.	Conclusion	19

NEW DIRECTIONS IN HEALTH ECONOMICS ¹

1. INTRODUCTION

Health economics is a relatively new branch of economics. Nonetheless, it has already established a broad agenda of work which has been summarised in the form of a schematic taxonomy by Culyer (1987). (See Figure 1). This paper concentrates on two current strands of this agenda, both of which are closely related to the policy process. First, it examines the contribution that health economics can make towards understanding the almost universal problem of rising health care costs and the policy instruments for dealing with them. In Culyer's terminology this represents evaluation at the whole system level. Second, it considers the role of health economics or more particularly, micro economic appraisal, in relation to the future use of scarce resources: the so called priority setting or rationing debate.

2. COPING WITH RISING COSTS

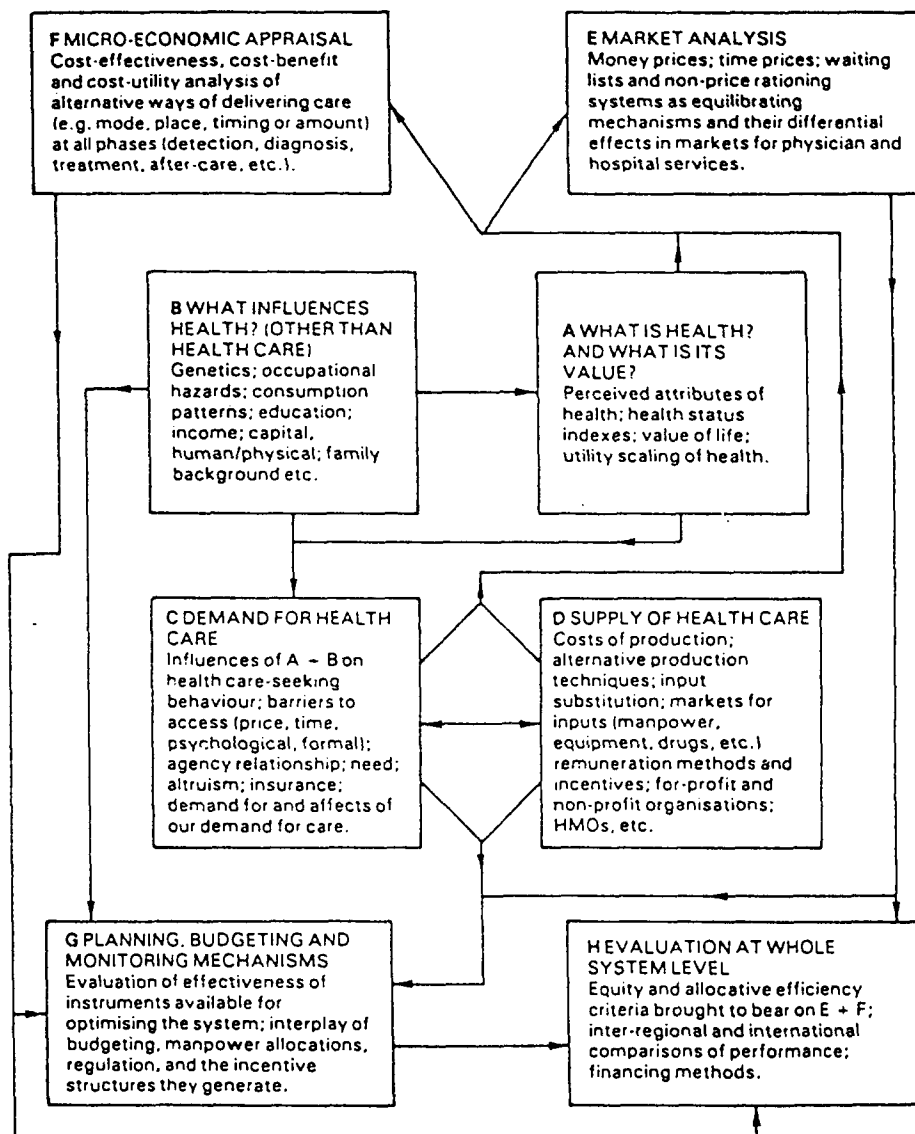
Practically everywhere governments are facing rising demands for health care resulting from demographic changes, new medical technologies and public expectations. These demands are leading to strong pressures for increased spending (OECD, 1990).

In the case of demographic change, for example, in many countries there are rising numbers of elderly and very elderly people. The costs of providing health care for these people are

¹ This paper was delivered at a seminar New Directions in Health Policy, University of Hong Kong, 28 - 29 October, 1994 and will be appearing in a special issue of the Asian Journal of Public Administration.

Figure 1 . A schematic diagram of health economics

Source: Culyer (1987)



often up to ten times more than the costs of treating people of working age. Similarly, medicine is characterised by the emergence of numerous new technologies. In many industries new technology actually reduces unit costs. In health care, however, while new technologies may well improve the quality of service they often lead to increased costs (Ham and Costain, 1988). This is particularly the case with many new pharmaceuticals that have recently come onto the market. Finally, we live in a world where knowledge of what is going on in other countries is transmitted widely and rapidly. This often leads to expectations of health care on the part of people in particular countries based upon their knowledge of what is available elsewhere.

All of these pressures are leading to demands for increased spending on healthcare. As Figure 2 shows, over the period 1960 - 1990 all countries experienced an increase in the percentage of their GDP devoted to health care. Moreover, predictions of the growth in health care expenditure based upon econometric estimates suggest that these proportions are likely to rise even more between 1990 and the year 2000 unless policies designed to constrain this growth are devised (NERA 1993).

As Figure 3 indicates - with the notable exception of the United States - public expenditure accounts for three quarters or more of health expenditure in all the countries shown. This dependence on public spending means that the pressures of rising demand tend to impact heavily on public budgets. Government responses to these pressures have taken two main forms. First, there have been a range of policies designed to restrict the growth in total health expenditure. In the health economist's terminology these are designed to achieve macro efficiency. Second, a variety of organisational forms and financing mechanisms have

Expenditure on Health Care

Percentage of GDP

Percent

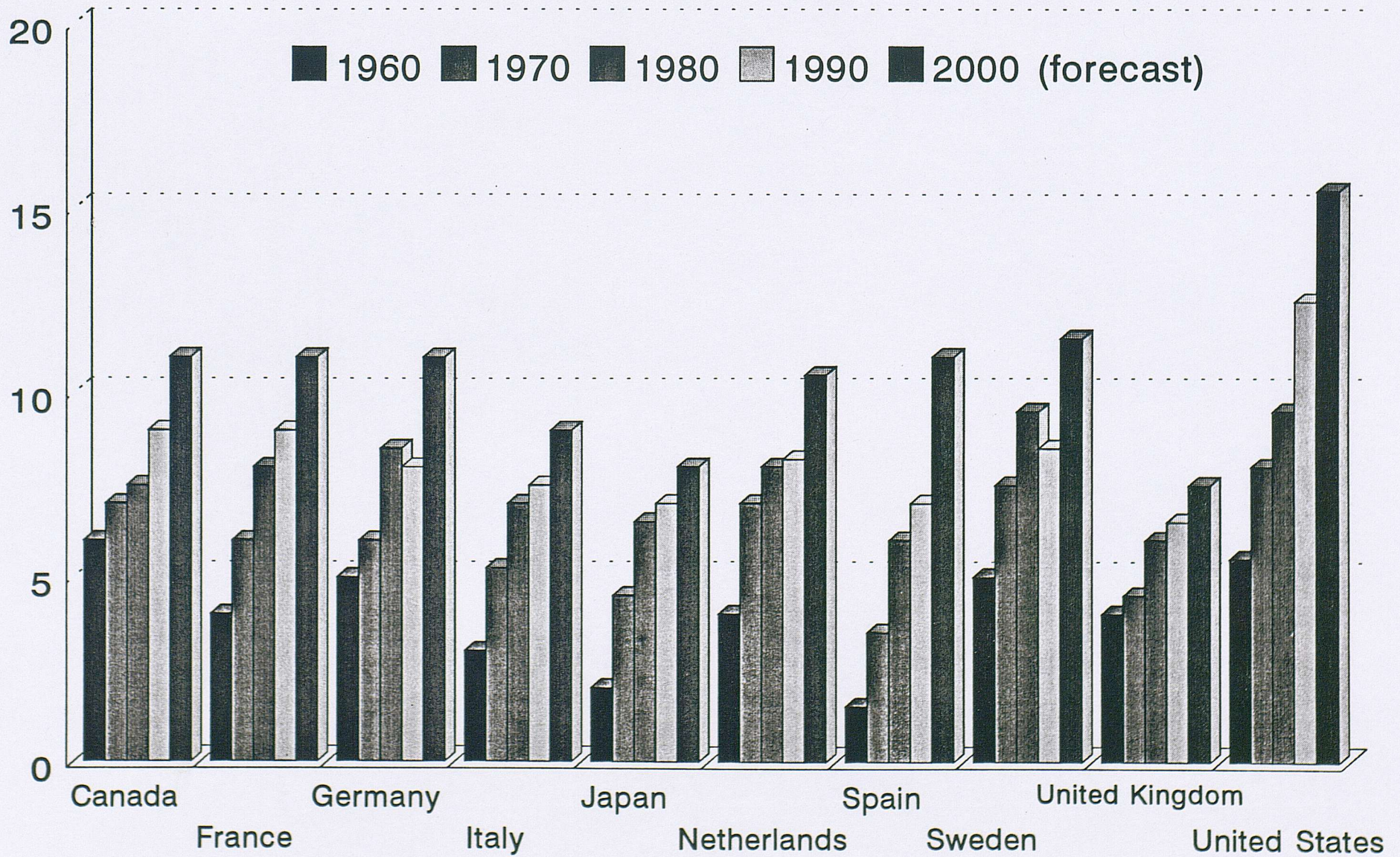


Figure 2.

Source : NERA(1993)

Health Expenditure: Percent Public Spending (1989 figures)

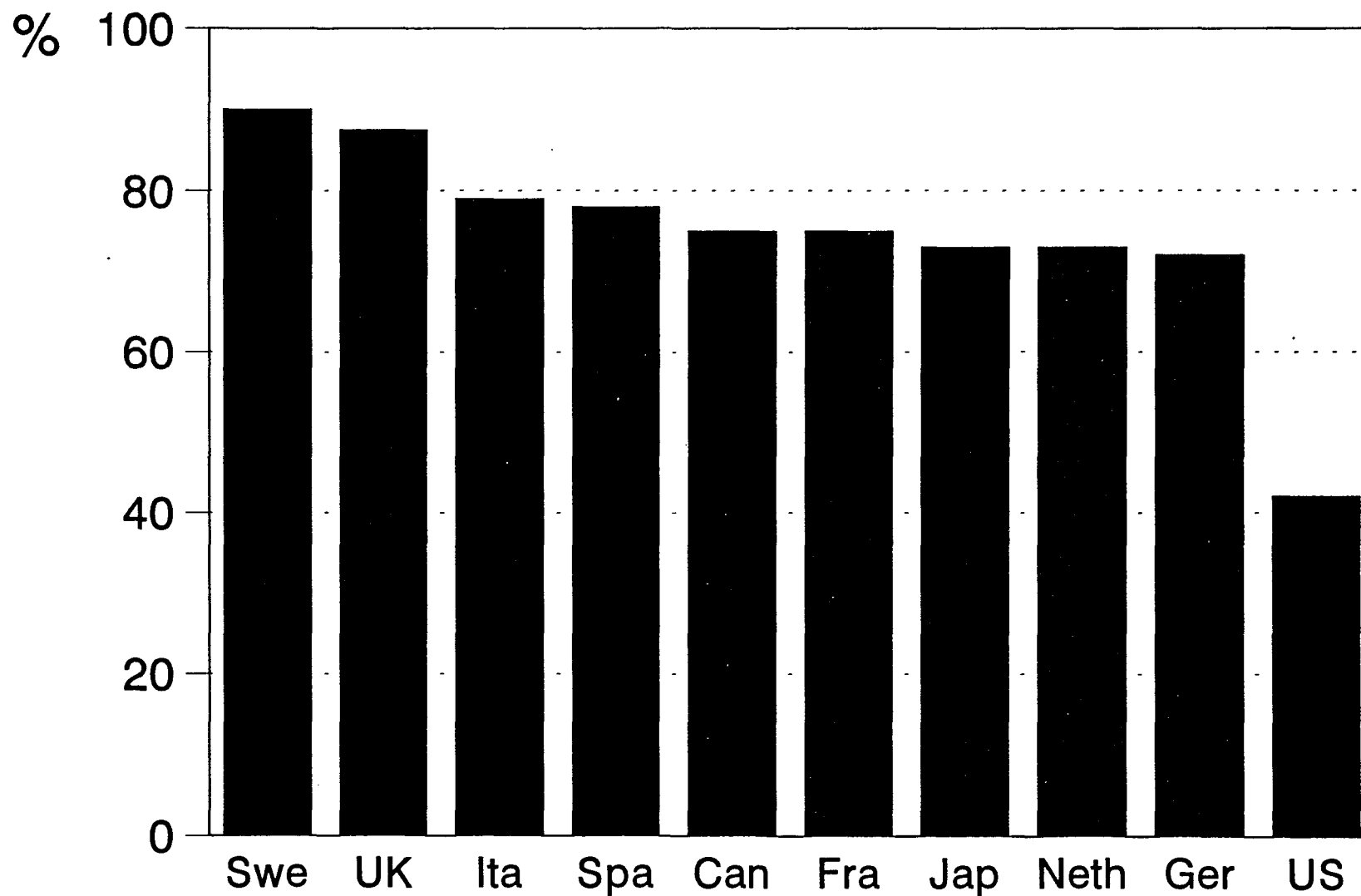


Figure 3.

Source: OECD(1990)

been developed to encourage the more cost effective use of health care resources. These are often referred to as policies designed to achieve micro efficiency.

2.1 Macro Efficiency

As far as policies aimed at macro efficiency are concerned, these may seek to control total health spending directly through the specification of global budgets; or they may seek to control the unit costs of particular services; or they may seek to control the volume of services provided. In the case of total expenditure control, a number of countries have specified global budgets which restrict the amounts which can be spent on either health care overall or on particular sectors such as hospital expenditure. The U.K. provides an example of a country in which global budgets are set for public expenditure on health care in total. These budgets are set prospectively each year as part of the overall public expenditure planning process. Canada, on the other hand, provides an example of the latter approach. Each year the provincial governments enter into negotiations with hospital providers and agree upon a total budget that will be available for hospital services in the coming year. Both sides then know what is available and seek to work within these limits (Ham et al., 1990).

Moving on to strategies which are designed to control unit costs, or prices, the diagnostic related group approach developed in the United States provides a good example (Robinson, 1990). This system was first introduced as a form of price control under the Medicare prospective payment system in 1983. Under this arrangement patients are allocated to one of approximately 500 in-patient diagnostic related groups (DRGs) on admission to hospital

and the hospital receives a fixed payment per DRG. The DRGs themselves are determined by classifying treatments into homogenous categories which form the basis for measuring different levels of resource use. Subsequent initiatives in the U.S. have sought to extend the scope of DRGs and also to include physician payments within a similar model.

Finally, expenditure controls may seek to regulate the volume of services provided. This can take place through, for example, regulations which govern permissible increases in the number of hospital beds. Alternatively, many countries seek to control the quantity of services, such as pharmaceuticals, through the use of positive and negative lists. Positive lists identify those products that will be reimbursed from public budgets whereas negative lists identify those pharmaceuticals which do not qualify for reimbursement. Both strategies seek to control the proliferation of new products that are funded from public sources. In this connection, it is interesting to note approaches being developed in Canada and Australia which seek to draw on evidence of cost-effectiveness as a basis for determining whether or not a drug should qualify for public reimbursement (Rutten and Drummond, 1994).

All of the above methods have been used to control the growth in aggregate health spending. Evidence about their relative effectiveness is far from definitive. However, the case for control through global budgets seems to be a strong one. The comparative experience of the U.S. and Canada, when the latter country moved to a system of global budgets, is striking. More generally, countries such as the U.K. - which have traditionally relied on global budgets - have succeeded in restricting the proportion of GDP that is spent on health care far more effectively than most other countries. On the other hand, both price and volume controls have had only limited success. Providers of health care have typically responded

to the imposition of controls in one sector by expanding activity in non-controlled sectors. One U.S. analyst has drawn the analogy of pushing on a balloon (Long and Welch, 1988).

Before leaving the subject of aggregate cost control, however, it should be borne in mind that there are some health economists who challenge the legitimacy of the aim itself. These economists argue that the proportion of a country's GDP which is spent on health care is an irrelevance as long as these expenditure levels genuinely reflect what people want to spend. A strong advocate of this point of view is Professor Mark Pauly, an American health economist, who claims that individual consumers are better judges of what should be spent on health care than are governments (Pauly, 1988). Others associated with this school of thought have gone on to argue that global budgeting typically imposes hidden costs, e.g. waiting times, that are not conventionally recorded in public accounts (Danzon 1992). Even among those economists who do not share these views, the arguments of Pauly and others raise important questions about the appropriateness of particular social objectives.

2.2 Micro efficiency

In recent years a number of countries which have traditionally relied heavily upon command and control systems for the allocation of health care resources have started to introduce quasi-markets into the health sector (e.g. U.K., Sweden, New Zealand, the Netherlands). These quasi-markets have a number of common characteristics: namely, they generally retain public funding of health care; they separate responsibility for purchasing services from responsibility for providing them; and they seek to promote supply side competition between health care providers. Based upon the general assumption that markets and competition increase

efficiency, quasi-markets seek to stimulate greater efficiency in the purchasing and provision of health care.

The health reforms introduced in the U.K. have probably gone faster and further in this connection than any other country and therefore provide an interesting case study of the quasi-markets approach (Robinson and Le Grand, 1994a).

The first point to strike any independent analyst viewing developments in the U.K. is the simplistic nature of the market model that was introduced initially and the total lack of any empirical evidence upon which to base the expectations of greater efficiency. Subsequent development of the market, and recognition of the need for regulation/market management in order to both promote competition and to preserve wider NHS objectives, has gone some way towards addressing these initial failings. However, one strand of economic thought continues to cast doubt upon the wisdom of the quasi-market model. This is the transactions cost approach.

The NHS internal market has incurred substantial costs through the need to set up systems for recording, costing and billing. In fact, the possibility that excessive transactions costs may be a source of inefficiency for market or quasi-market mechanisms has attracted the attention of a number of economists over the years. In particular, the work of Williamson (1975, 1986) has sought to identify those factors which, if present, mean that market contracts will be expensive to write, complicated to execute and difficult to enforce. If these conditions apply, firms may choose to bypass the market and rely on internal, hierarchical forms of organisation instead. Hence, transactions that would otherwise have taken place in

the market are dealt with internally through administrative processes. Put another way, management hierarchies and markets can be viewed as alternative methods of economic organisation for dealing with transactions. The choice between them should depend on their relative efficiency.

In his work, Williamson identifies three features which, taken together, can be expected to favour internal organisation over market transactions. These are bounded rationality, opportunism and asset specificity.

Bounded rationality means that decision makers, whilst seeking to act in a rational manner, can only be expected to do so to a limited extent. The bounded nature of behaviour arises because the capacity for individuals to formulate and solve complex problems is necessarily limited. These limitations become particularly important when faced with uncertainty about the future. If it becomes very costly or impossible to identify all future contingencies, and to specify adaptations to them, it may be more efficient to replace contract arrangements with internal, hierarchical organisations.

Opportunism refers to behaviour whereby individuals can be expected to pursue their interests through devious means. They may seek to derive advantage from the selective or distorted disclosure of information, or from making false promises. Information may be manipulated in a strategic fashion and intentions may be misrepresented. The existence of opportunism means that uncertainty is introduced into contractual arrangements as neither party can rely on the other one honouring non legally binding promises. In such a world, internal organisation may be a more effective means of controlling opportunism. It permits

additional incentive techniques to be developed in order to curb opportunistic behaviour

In the limit, this may be achieved by fiat.

Asset specificity arises when transactions require investment in assets - both physical and human - that are specific to these transactions. As such, the parties to a contract have a continuing interest in each other because the nature of the commodity being traded depends upon an ongoing supply relationship. This arrangement is the converse of a spot market, where deals are struck by anonymous buyers and sellers. With asset specificity, market competition is liable to break down, as existing suppliers will enjoy advantages in relation to new entrants.

Hence the transactions cost approach suggests that when bounded rationality, opportunism, and asset specificity are all present, internal organisation may be a more efficient method of economic organisation than market type contracting between separate units. In the context of market oriented health service reforms, this consideration raises the obvious question: will transactions involving health services display these characteristics?

On the first characteristic - that of bounded rationality - there seems to be little doubt that this applies to health services. The nature of health and social care is highly complex, with major areas of uncertainty regarding, inter alia, the cost of individual services, their quality and, most important of all, measures of their outcomes.

Whether opportunism will be a problem is less clear. Health services provision is traditionally viewed as embodying a set of values - based upon professional ethics and caring



- which might be expected to exclude self seeking and opportunistic behaviour. On the other hand, it will be naive to suggest that the strategic pursuit of self interest has not always represented an element of health service provider behaviour, whether through corporate or professional vested interests. Whatever else it achieves, it seems extremely likely that the introduction of a more market based approach will increase the incidence of this behaviour, and hence the potential for opportunism.

Asset specificity is another characteristic which seems to apply with particular force to health care services. Few of these services correspond to the simple type of consumer good which allows a person to enter a store, choose an item from the shelf, pay for it and disappear into the anonymity of private consumption. Much health care is a continuous, or at least a long term, process involving treatment by a variety of agencies in many different contexts. This is especially true of long term care and treatment of chronic conditions. Even in the case of elective surgery, however, there is a complex chain stretching from pre admission assessment through in patient or day case treatment, to post discharge care. All of these considerations suggest that continuity in relations between purchasers and providers is likely to be important.

Taken together, therefore, there are strong reasons for believing that the conditions highlighted by the transactions cost approach are present in health services. One interpretation of how this might be expected to influence the contracting process between purchasers and providers has been put forward by Bartlett (1991). As he points out, block contracts have been the dominant form of contract in the NHS in the short run. These specify an annual fee in return for access to a defined range of services. They are broad

brush and do not endeavour to specify prices for every eventuality. For this reason, they are necessarily incomplete and subject to opportunism. In particular, Bartlett believes that, despite the creation of mechanisms for measuring performance, opportunistic behaviour could lead to reductions in the quality of service provision, to an overemphasis on prestige treatments, and to an increase in organisational slack in the form of increased perks and side payments to staff. These can all be expected to raise the costs of services above the efficient level.

All of these considerations may be taken to suggest that efforts to create a quasi-market with a separation of purchaser and provider functions might be misplaced. Paradoxically, the transactions cost approach seems to suggest that pre reform hierarchical structure within a unitary health authority may have been the more efficient organisational structure, after all. However, before reaching this judgement, it is necessary to consider transactions costs alongside the incentive structures designed to promote greater efficiency that are offered within the internal market. Possible methods for economising on transactions costs while simultaneously offering incentives for growth efficiency are considered in another paper involving one of the authors (Robinson & Le Grand, 1994b).

One final consideration on the subject of micro efficiency concerns the role of prices or user charges. The economist's approach has, of course, always placed great emphasis on the price mechanism as a means of transmitting information to both buyers and sellers about the real costs of their decisions. The dependence on third party payers in health care (either public or private) has typically reduced the role played by prices. Recently, there have been some proposals for greater reliance to be placed upon the price system through the use of

cost sharing, i.e. arrangements through which users meet a proportion (or a larger proportion) of the costs of health services. This, it is argued, will increase cost consciousness and relieve hard pressed public budgets by providing supplementary private funding (NERA, 1993). Such arguments should, however, be treated with caution. If non price methods are used to ration the supply of health services, the question of excess consumption is unlikely to arise. Moreover, user charges can have detrimental effects upon access to services, particularly on the part of low income groups. In short, despite the appeal of user charges as a direct means of equating demand and supply, there are many complications associated with their use in health care on both economic and social grounds.

3. PRIORITY SETTING AND RATIONING

The growing demands for health care in relation to the scarcity of resources available to meet these demands has stimulated world-wide debate about the best way to equate the demand and supply of health care in the future. Given that their whole subject is based upon devising optimal strategies in the face of resource constraints, economists have understandably been prominent in these discussions.

Methods of economic evaluation - which seek to identify the costs and consequences of alternative health programmes and procedures - have been drawn upon to offer a basis for priority setting. The early stages of the Oregon experiment in which some 1,600 condition treatment pairs were ranked in terms of cost and quality of life provides a well known example of this approach (Strosberg, 1993). In the U.K., health economists have also been active in this respect. An illustrative cost per quality adjusted life year (QALY) table has

been published for a range of alternative procedure (see Table 1). Interest in this approach has been further stimulated by the knowledge that the Department of Health has been constructing a more comprehensive handbook on cost per QALY evidence, although publication has not yet been decided upon (Robinson, 1993a).

Somewhat paradoxically, however, the prominence of this work has not only attracted criticisms from known critics of the QALY approach, but it has also led to a backlash among economists themselves (Mason *et al.*, 1993). Reservations about the sometimes poor quality of data and methods used, about the difficulties of comparing studies undertaken in different years and using diverse measures of costs and benefits, and about the inappropriateness of transferring the results from one local setting to another have all led to a more modest stance on the contribution that economics can make towards the current task of priority setting. While the task of extending our knowledge through research based economic evaluations must continue, there are simply too many gaps in our knowledge at the moment to be able to rely on extant evidence as a basis for decision making. In view of this deficiency, a number of economists in the U.K. have been developing a more practical agenda, which does not claim the precision of the cost per QALY approach, but nonetheless seeks to structure health care choices within a cost benefit framework (Mooney *et al.*, 1992).

Even with the adoption of a more pragmatic approach, however, it is important to stress that the results of economic evaluation are simply one input to a complex process of decision making. Robinson (1993b) has summarised this process in terms of the diagram shown in Figure 4. This indicates that health authorities charged with the responsibility of purchasing a range of services on behalf of their resident populations need to balance four main

TABLE 1

COST PER QALY (1990 PRICES)

Treatment	Cost per QALY (£ August, 1990)
Cholesterol testing and diet therapy only (all adults aged 40 - 69)	220
Neurosurgical intervention for head injury	240
Advice to stop smoking from general practitioner	270
Neurosurgical intervention for subarachnoid haemorrhage	490
Antihypertensive treatment to prevent stroke (ages 45-64)	940
Pacemaker implantation	1,100
Hip replacement	1,180
Valve replacement for aortic stenosis	1,140
Cholesterol testing and treatment	1,480
Coronary artery bypass graft (left main vessel disease, severe angina)	2,090
Kidney transplant	4,710
Breast cancer screening	5,780
Heart transplantation	7,840
Cholesterol testing and treatment (incrementally) of all adults aged 25-39	14,150
Home haemodialysis	17,260
Coronary artery bypass graft (one vessel disease, moderate angina)	18,830
Continuous ambulatory peritoneal dialysis	19,870
Hospital haemodialysis	21,970
Erythropoietin treatment for anaemia in dialysis patients (assuming 10% reduction in mortality)	54,380
Neurosurgical intervention for malignant intracranial tumours	107,780
Erythropoietin treatment for anaemia in dialysis patients (assuming no increase in survival)	126,290

Source: Mason et al. (1993)

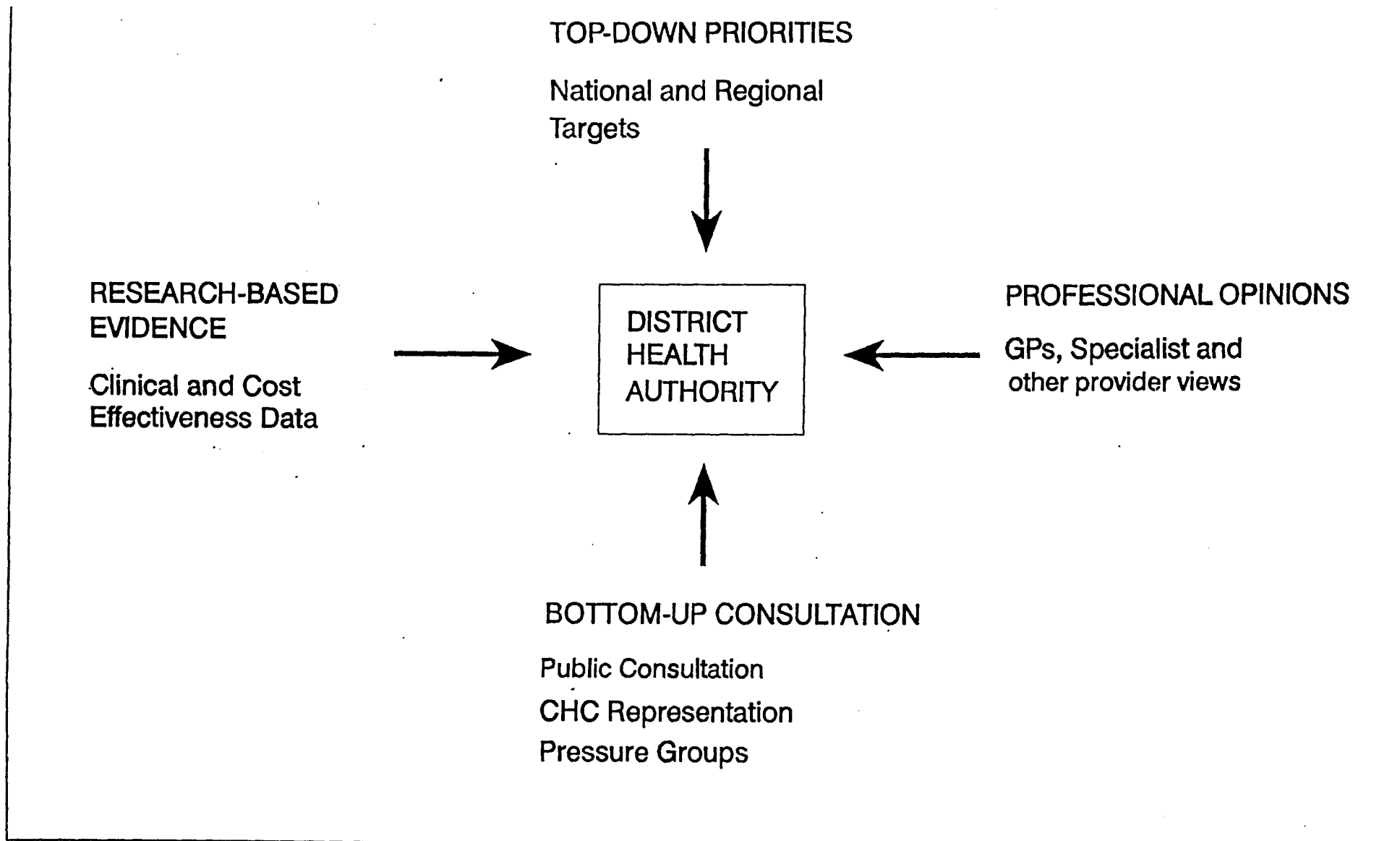


Figure 4

Source: Robinson (1993b)

considerations; namely, top-down priorities, bottom-up public consultation, professional opinion, and research based evidence.

How health authorities approach this task has been the subject of some debate. Most commentators argue that it should be an open and explicit process. However, Hunter (1993) is not convinced that greater explicitness in debates about prioritisation and rationing is necessarily desirable. In particular, he is wary about current attempts to increase public participation, believing that the public's views are often ill informed and that participation is inherently inequalitarian. Furthermore, he argues that widening the debate about rationing could give rise to a new individualism or narrow utilitarianism which may weaken the collectivist ethos upon which the NHS is based. He is also concerned that openness and explicitness will lead to incrementalism and will inhibit imaginative innovation. Lack of visibility in decision making, he argues, may be necessary for the political paternalism required to overcome both consumer and producer lobbies.

Hunter is also sharply critical of the allegedly dominant role played by economists in rationing debates, especially those using cost per QALY calculations. He is distrustful of quantification which he believes leads to spurious objectivity and to an unwarranted belief that work is scientifically based.

Not surprisingly, this author disagrees with these views. He believes that, if properly used, economic evaluation can guide decision makers in the direction of making choices which yield the greatest benefits. Currently a number of health authorities are adopting this

approach to help them structure decision making in the area of priority setting. This is not an easy task but progress is being made.

4. CONCLUSION

Despite its relative youth, the field of health economics is developing rapidly. Its appeal to policy makers is that it offers an approach to the universal problem of making the best use of scarce health care resources. No serious commentator would claim that health economics offers definitive answers to this problem. On the other hand, used sensitively, the health economists approach can aid understanding of questions surrounding the use of scarce resources and contribute towards the development of effective mechanisms for using them more wisely.

REFERENCES

Bartlett W. (1991). Quasi-markets and contracts: a market hierarchies perspective on NHS reforms. Public Money and Management 11: 3, 53 - 61.

Cochrane M et al. (1991). Rationing at the cutting edge. BMJ; 303: 1039 - 42.

Culyer AJ. (1987). The future of health economics in Teeling Smith, G. (ed). Health economics: prospects for the future. London: Croom Helm.

Danzon PM. (1992). Hidden overhead costs: is Canada's system really less expensive? Health Affairs, Spring: 21 - 43.

Ham C., Costain D. (1988). Advances in health care technology. Minutes of the evidence taken before Social Services Committee on Resourcing the NHS: short term issues 33 - 34. 27 January. London: HMSO.

Ham C., Robinson R., Benzeval M. (1990). Health Check: health care reforms in an international context. London: King's Fund Institute.

Hunter D. (1993). Rationing dilemmas in health care. Birmingham: NAHAT.

Long S., Welch W. (1988). Are we containing costs or pushing on a balloon? Health Affairs 7: 4, 113 - 117.

Mason J et al. (1993). Some guidelines on the use of cost-effectiveness league tables. BMJ; 306: 570 - 2.

Mooney G. et al. (1992). Priority setting in purchasing: some practical guidelines. Birmingham: NAHAT.

NERA (1993). A report on the economics of health care reform. London: National Economic Research Associates.

OECD (1990). Health care systems in transition: the search for efficiency. Paris: OECD.

Pauly M. (1988). Efficiency, equity and costs in the US health care system in Havighurst C. (ed) Americal Healthcare, what are the lessons for Britain? London: Institute of Economic Affairs.

Robinson R. (1990). Competition and health care. London: King's Fund Institute.

Robinson R. (1993a). Economic evaluation and health care. BMJ 307: 859 - 62, 994 - 6.

Robinson R. (1993b). Purchasing, priorities and rationing in Harrison A. (ed). Health Care U.K. 1992/93. London: King's Fund Institute.

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

Robinson R., Le Grand J. (1994b). Markets and Contracting in Health Care. Southampton: Institute for Health Policy Studies.

Rutten F. Drummon M (1994). Making decisions about health technologies: a cost-effectiveness perspective. York: Centre for Health Economics.

Strosberg MA et al. (1993). Rationing America's medical care: the Oregon plan and beyond. Washington D.C: The Brookings Institution.

Williamson O. (1975). Markets and bureaucracies: analysis and anti-trust implications. New York: Free Press.

Williamson O. (1986). Economic organisation: firms, markets and policy controls. Brighton: Wheatsheaf Books.

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