
Efficiency in Health Care: a Market Model for Developed Economies

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From decade to decade the dominant ideological approach to 'the economy' shifts its ground. This shift all too often masks the real nature of markets, both public and private. This is certainly the case in the market for health care where there is a tendency for policy makers, when confronted by the problems of inefficiency and inequality, to be stampeded into the adoption of over-simple 'solutions' to the national health care problems. Thus in Britain the Labour Party, in France the Socialist Government, and in West Germany the recently ruling Social Democrats, in the United States the opposition Democrats, and in Australia the newly elected Labour Government, all have responded to the inadequacies of their domestic health care systems by pledging more public expenditure, and more public regulation of the finance and provision of health care.

This approach by collectivists has a parallel on the opposite side of the spectrum amongst the proponents of the liberal market tradition. The Conservative Government in Britain, the Giscard opposition in France, the Christian Democrat Government in West Germany, the Reagan Government in the United States, and the recently deposed Fraser Liberal Government in Australia, have all responded to the problems inherent in their health care systems by advocating the redesign of the public sector which provides health care, and the encouragement of the extension of private finance and provision of health care.

Ideological convictions lead policy makers to adopt opposite policies (privatisation and socialisation) to remedy the same problems in the health care market. Why are opposite policies adopted? What is the nature of the problems which exist in all health care markets? How can resource allocation be made more efficient? These are some of the questions that this article addresses.

¹This paper draws heavily on Maynard's material in McLachlan and Maynard [1982].

The Competing Ideologies

The competing policies offered by collectivists and liberals to remedy the defects of health care systems are derived from different policy goals and the different means that are available to achieve these goals. The liberal typically is concerned with the freedom of the individual and he sees this as the primary social goal. He fixes his sights on the competitive market with its private ownership and individual consumers. Thus in the UK the liberal 'reformers' of the national health service (NHS) have a strong preference for freedom as characterised in the market ideology, and from this prime objective it is possible to identify their preferred means to attain this goal, which are as follows:

Selectivity Health care is part of the reward system of society, and the wellbeing of society depends on this reward system. As a result access to health care is to be determined largely by ability and willingness to pay. Those without the ability to pay will be guaranteed some minimal level of access to health care. This approach regards inequality as efficient: it is the engine of economic growth and the guarantee of freedom. Also it implies private (insurance) finance of health care.

Private ownership Individual freedom requires decentralisation and private (usually non-profit making) ownership of the means of health care production (eg hospitals) with only minimal government control of finance and resource allocation.

Rewards Providers of care (eg doctors) will be directly rewarded according to market forces, usually with a fee per item-of-service system of remuneration for doctors and per diem fees paid to hospitals.

Those rejecting this ideology (eg the collectivist defenders of the NHS) regard equality of access to health care and of health status as their prime objectives. The means by which this goal can be attained are:

Universality Health care is not part of the reward system and should be allocated on the basis of need or the patients' ability to benefit from care regardless of their willingness or ability to pay. Universality implies public finance of health care.

Public ownership Equality requires centralisation and public ownership of the means of health care production (eg hospitals) with extensive government control of finance and resource allocation.

Rewards Providers of care will be rewarded by the outcome of bargaining procedures between monopoly providers (eg doctors) and monopsonistic financiers (eg the NHS).

The goals of 'freedom' and 'equality' are imprecise, and imply different emphases on equity. In addition, health care systems usually have goals whose nature is imprecise, and even where some degree of precision is attained in goal setting, the efficiency of the means is an area of supposition rather than of fact. The contending ideologies contain empirical statements about these means, whose verity could and should be tested. Unfortunately this rarely happens. As a consequence, we have, through time, the recurring advocacy of privatisation or socialisation. Whilst such advocacy may be the stuff of politics, it results in superficial policy formulation and the waste of scarce intellectual talent in policy analysis. In contrast, this article will strive to understand the precise nature of the health care market and the ramifications for policy, public and private, of the imperfections of this market.

The Nature of the Health Care Market

The supply side: monopolistic (non-competitive) market

The advocates of the market solution recognise that a major obstacle to the smooth running of a competitive market is monopoly power, or the ability of the sellers of health care services to influence (to their advantage) the prices of their services. As Adam Smith [1776, Bk 1 chap 10:117] observed: 'People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices'. The health care market is not competitively organised; it is highly imperfect and characterised by powerful professional monopolies which inhibit the competitive interplay of the 'hidden' hand of the market. The market for health care is also characterised by uncertainty: the patient does not know when he will be ill, and he is likely to be relatively inefficient in determining the appropriate diagnosis and treatment for his condition. Generally society, in order to protect its members from 'quacks' and

uncertainty, has created social institutions — professional regulations — to ensure that doctors are 'expert' in their trade and do offer efficacious health care [Arrow 1963].

The counter argument to this position has been set out by Friedman [1962]. He contends that professional regulation is used to further the interests of the profession. Citing US experience, he argues that the profession — by controlling entry into medical schools — has restricted the supply of doctors, and inflated their incomes. Furthermore, the profession is said to have inflated the 'quality' of doctors (measured in terms of duration of training) regardless of its costs, and this in the absence of scientific evidence that the present quality of physicians (measured in terms of their impact on the health status of patients) is adequate.

Whether Arrow's or Friedman's position is adopted, it is clear that the state, in all Western countries, has given the medical profession considerable monopoly power to influence the quantity and quality of its services, and its own remuneration. The profession appears to have used its power both in the public interest and its own self interest [Frech 1974, Leffler 1978]. Professional organisations use their power to influence their remuneration, and hence all such organisations in the health sector will seek to protect health care expenditure as this is the source of their income.

The uncertainty associated with health care, which led to the state enforcement of professional power, does create additional problems. Although it is generally an individual patient's decision to make the first contact with the health care system, after that the patient usually delegates much of the demand decision-making to the doctor. The patient thus uses the doctor as his agent to make health care demand decisions for him, so that in a sense the supplier of health care — the doctor — is also the demander [for a summary of the literature see United States DHHS 1981]. If this 'agency relationship' is used just in the interests of the patient, there may be only limited implications for the efficient use of resources. However the doctor may use this relationship to his own advantage, for example, to increase his income by raising the demand for his services.

The existing market for doctors is highly imperfect (ie non-competitive) and is characterised by monopoly. In addition, there are severe restrictions on competition elsewhere in the health care market. The pharmaceutical companies exert monopoly power, utilising patent legislation. In advanced market economies the hospital sector is mostly either publicly owned, at local or central level, or run by private

non-profit making bodies. In this situation, the incentives to seek out cost effective practices in both the public and private sectors may be similar and weak. In both types of organisation the managers get no direct reward for any cost savings, so why should they seek them out? Not only are incentives weak, there is also scope for 'producer agreements', often protected by state legislation, which may limit competition in the market for hospital beds.

Thus the supply side of the health care market is characterised by a lack of competition and by powerful, well established, state supported, monopoly power. It is not surprising that in this environment little is known about the efficiency with which resources are used. In the context of the health care market the doctor may regard a procedure as *clinically effective* if it is the most effective therapy available to improve the health status of an individual suffering from a particular complaint — but often evidence to reach this conclusion is absent due to the lack of evaluation of practice. A procedure may be *cost-effective* if it is the cheapest way of achieving a given therapeutic end, without the value of this end (outcome) being questioned. A procedure is *economically efficient* if cost is minimised, outcome benefit is maximised, and the services provided are those most highly valued by society. Thus therapy X may improve health status by 10 units at cost £10 whilst therapy Y may improve health by 10 units at cost £1000 and therapy Z may not improve health at all and cost £1. Therapies X and Y are clinically effective, they alter health status. Therapy X is cost effective, it is the cheapest way of achieving a 10 unit increase in health status. Therapy X may not be efficient: if alternative therapies of similar cost produce benefits more highly valued (by society), then therapy X, whilst cost effective, may not be implemented.

The existing supply side forces, which in competitive markets help to bring about economic efficiency, do not operate well in the health care market. Clinical freedom and professional power have prevented the creation of mechanisms which ensure that practitioners evaluate clinical outcomes and their cost implications. Such behaviour is not only inefficient but can also be said to be unethical: resources used inefficiently are not available to treat those who are in the queue and who could potentially gain more, in terms of health status, if they were treated.

Doctor demands, not patient demands

The effects of these 'supply side' failures in the market mechanism have been compounded by effects on the demand side, which are similar for public and private (insurance-type) institutions. The British NHS is tax financed and removes the price barrier to consumption.

With the demand for health care being infinite, and the supply finite and fixed by government *fiat*, the NHS inevitably manifests excess demand, as shown by waiting lists. Scarce resources are allocated amongst competing demands by doctors according to imprecise notions of 'need' [Williams 1978], eg scarce kidney machines are allocated in the NHS to young married people rather than single, elderly people: if you are over 45 years of age you are unlikely to get treatment for renal failure in the UK.

The insurance system allocates resources according to willingness and ability to pay. Insurance coverage may remove the price barrier to consumption just like the NHS, though premiums and coinsurance ration excess demand. This reduces the demand of the poor more than of the rich, but also the demand of the less ill more than of the severely ill [Cairns and Snell 1978, Maynard 1979, Newhouse et al 1981]. Those who can pay the price of the coinsurance and the insurance premiums can enter the market and, subject to the 'agency relationship', they will get access to care.

In both the NHS and the insurance system the doctor has a crucial role as an allocator of resources; effectively the doctor decides who will be treated or not treated, and how. The doctor is the 'guardian' who determines treatment patterns. He is guided by the ethic to provide the best care for the patient in his charge, regardless of cost. Either the state or the insurance fund meets the cost of care. Hardly ever does the doctor have to evaluate costs and benefits of improvement in health status at the margin. There are no effective institutional devices to persuade doctors and patients to be efficient users of society's scarce health care resources: the bill is picked up by a third party, either by the tax payer or by the insurance company.

The many imperfections of the health care market

Some people, in particular those who have adopted the market ideology, tend to believe that markets will be more efficient than governments in allocating resources, because the competitive process rewards cost minimisers and provides incentives for decision makers to behave efficiently. However, in the health care sector significant market imperfections — professional power, the 'agency relationship' and the nature of the insurance mechanism — blunt the competitive system considerably. Markets, both public and private, are likely to be inefficient allocators of scarce health care resources. The superiority of the market, if it exists, has to be identified and quantified empirically, not merely asserted as a matter of faith.

The Regulation of the Health Care Market

As was shown in the previous section, the incentives for the doctor to pursue the goals of efficiency and equity are very meagre, and inefficiency and inequity are readily identifiable [Maynard 1981, Maynard and Ludbrook 1981, Townsend and Davidson 1982]. Almost everywhere this leads to regulation of the health care market: the representatives of society want greater efficiency — value for resources — and less inequality in the distribution of health care.

Regulation means that activities will be controlled or moderated by rules. The acts of control and moderation can be exercised by public *or* private bodies, and an important question is how such regulation bears on individuals, the profession, and other providers. Both the public and private sectors can be regulated by rules devised within the sector, as well as from outside it (for example, both the state and professional bodies may have a role in the regulation of either sector).

The operation of public or private controlling bodies will be directed at moderating the activities of decision makers (primarily clinicians) and influencing the price of health care services, of labour (eg doctors' pay) and of capital (eg the rate of return on pharmaceutical or hospital investments), and the quality and quantity of these inputs. Often controls will be working against one another and have countervailing effects. Thus everywhere the doctors seek to increase their income, while the paying agencies, whether sickness funds or the state, will endeavour to reduce the rate of growth of expenditure, which in the event may restrict incomes or employment [see Lacronique 1982].

As Enthoven [1980] has argued for the United States, the liberal market 'solution' requires vigorous regulatory activity if competition is to be created and sustained in the financing and provision of health care. Similarly the Netherlands, Belgium, West Germany, and France are taking, or have taken already, steps to regulate their health care markets. In the UK, the NHS 'solution' has led to detailed regulation of budget allocation, priority setting and decision-making. Yet new incentives are clearly required to moderate the inefficiency of both types of systems [Maynard and Ludbrook 1980].

It seems unlikely that vigorous competition can be created and sustained in health care markets by simple solutions such as pluralisation of insurance sources as against single-source finance. 'Friedmanite' pro-competition reforms would impose employment and income losses which would be very 'expensive' in political terms [McLachlan and Maynard 1982]. As the distinguished economist Uwe Reinhardt has

pointed out: 'Friedman's vision should send shivers down the spine of any straight-thinking physician' [Reinhardt 1982]. Only a farsighted policy seeking to evaluate and innovate in all spheres of regulatory activity is likely to help reduce inefficiency and mitigate inequality.

Innovations in Health Care Management

Whatever the priorities settled on by policy makers, and whatever the nature of the public/private mix in health care in the years to come, there is a set of common challenges which must be taken up to make the system more efficient and effective in the face of rising demands. At the forefront of these challenges is the need to improve the managerial training of doctors and develop an efficient management structure which is provided with adequate evaluative information about the available public and private services.

Training of doctors

Doctors are the 'gatekeepers' of the health care system. In many places they decide who will get access to what health care. Yet their training in decision-making is quite inadequate. Moreover, in spite of the emphasis in medical schools on a scientific approach, doctors tend not to acquire the habits of scientific appraisal of their own performance and generally have limited skills in the management of resources. As Weed [1981], himself a physician, has argued:

Because the system has been so poorly defined over the years, there has been no way to relate the outputs of the system to inputs; conjectures piled upon conjectures have hardened into curriculums and licensing laws. Reviewing some of these conjectures in terms of the tasks of medicine, we can now see how far off the track the medical establishment has strayed.

This argument is consistent with that of Cochrane [1972] and many other observers, medical and non-medical, in the UK. The failure to evaluate input/output links in health care has led to training which is not based on scientific fact but frequently on conjecture. In this situation it is no surprise that students are not trained adequately to question existing practices. As a result of this inadequate training, doctors have neither the knowledge to use resources efficiently nor the incentive to research their practices and improve their efficiency. It could even be argued that this results in behaviour which, from the medical point of view, is unethical. Incidentally, the Hippocratic oath puts the social before the individual ethic, and the inefficient use of resources may result in care being denied to many. Efficiency requires that inputs should be used in a way that maximises output in terms of health status improvements.

One approach to remedying these shortcomings is the training of doctors in management, health economics and statistics, evaluation, and the identification of input/output links. This would involve an opportunity cost (ie something else in the curriculum would have to be given up). However, such special training may yield significant benefits, especially if it is sustained throughout the cycle of a doctor's practising life through a system of continuing education so that his evaluative and management skills are augmented regularly.

Such a change in training patterns may be helped by the slowly growing realisation of the potential contribution of economic knowledge to improving the efficiency of resource allocation in medical care. The Medical Research Council and the Social Science Research Council in the UK financed the work of Drummond to provide a guide for doctors to the principles and practice of economic evaluation [Drummond 1980, 1981]. Cost containment policies in many countries are obliging doctors to compete among themselves and to justify more explicitly than hitherto their claims on scarce resources. This competition for resources may in time provide a spur to doctors to identify input/output links and to use resources more efficiently — but they can only do this if their training has given them the appropriate tools.

Enabling managers to manage

Be it in the public or private sector, the managers of scarce health care resources must be given incentives and the means to manage. At present doctors *de facto* decide who will get the care, yet neither their training nor their professional ethic explicitly assign to them the management role. There still has to be a recognition of this problem in the policy approaches to health care systems, public or private.

The key to good management is information — 'intelligence' — about inputs and outputs, and knowledge of the linkages between these two elements. Good 'intelligence' is neither a cheap commodity, nor easy to come by. It is therefore naive to argue that Medicare in the US, or the NHS in the UK, are 'over-bureaucratised' as long as certain essential administrative jobs are not being done. Public and private health care systems require an efficient bureaucracy if they are to use resources efficiently. In certain respects, health care institutions may suffer from under-administration: they have inadequate means of keeping under review the quantity and quality of their medical, financial and other managers. Yet while it is conventional wisdom that public systems of health care are often inflexible and inefficient resource users, it is not easily accepted that this might be because of false economy in certain aspects of administration. In

the NHS, after 34 years of experience, there is still no adequate system of information gathering, evaluation and dissemination, which top management can use effectively and with confidence.

The availability of better information about the costs and benefits of health care, and the characteristics of decisions in health care systems, does not necessarily change behaviour. Good management is about 'selling' or 'packaging' this information in such a way that decision-making at the key levels is improved. One of the reasons why this may not happen is that health care institutions often fail to allocate clearly the role of the manager. In the NHS, medical, administrative, financial, and nursing managers have worked side by side, with no clear definition of who has ultimate responsibility. This carelessness in system design has contributed considerably the inefficient application of resources. Managers must have clear roles and their performance must be monitored carefully. It may be possible to use individual or institutional financial incentives to help achieve more efficient practice. Knowledge about the nature of these inducements and their effects on behaviour is less than satisfactory, but there is considerable scope for experimentation [McLachlan and Maynard 1982]. Overall management merits greater attention than it has had hitherto.

Research Priorities

The problems discussed in the preceding section have to be considered by policy makers if health care systems, public and private, are to be made more efficient. This section sets out briefly a series of questions which could lead to the establishment of policy-relevant research priorities for the next two decades, irrespective of the form of health care system and the public/private mix. The questions comprise most of the relevant issues facing any modern industrial society and would provide an agenda to specify the right directions for health service research in the remaining years of this century. Posing the questions also assumes that those in government with responsibility for scientific research, including health services research, will be willing to formulate a coherent strategy for the long term. The answers to the questions will differ from country to country, but answers must be sought if resource allocation is to be based on a real understanding of the issues and made less wasteful.

— What are the objectives of the health care system, regardless of the public/private mix? What ordering or weight do these objectives get and how are these changing over time? Equity in terms of distribution and access is important and covers

most systems: how is this likely to be affected by change in the public/private mix?

- Who is really responsible for control of the system(s), and who controls resource use at the 'boundaries' of care? Particularly relevant are the 'boundaries' between hospital and primary care; between capital and current revenue allocation; between capital and labour; between the public and private sectors. Who controls any movements in these boundaries? What criteria are used to determine policy-making at these boundaries? How could insurance principles and practice be made to concern themselves more with general practice, prevention, the care of the elderly, and other 'Cinderella' activities?
- Why do decision makers at the boundaries behave as they do? What incentives motivate public and private action, and the interaction between the public and private sectors? What monetary and non-monetary incentives are there to promote efficiency for individual managers and for institutions in the public and private sectors? Is inefficient behaviour an inevitable product of poor incentives? Could new incentives be identified that are likely to alter behaviour in the public and private sectors to make it more consistent with policy objectives?
- Who rations what and how in health care? What criteria are used by decision makers in the public and private sectors to allocate scarce health care resources at the micro (operational) level? Is the allocation which results consistent with the avowed rationing criteria of the sector and its policy objectives?
- What investment criteria are used in the public and private health care sectors — for example, to decide who will get a new hospital or a new piece of medical equipment? Are the techniques of investment appraisal used? If so, how? Are the criteria consistent with policy objectives and the optimum use of resources?
- What are the major unresolved problems in the health care system? This question takes us back to the first. Are outcomes, in terms of efficiency and distributional equity, however defined, consistent with policy objectives or does the system (and its public and private sectors) fail to meet its objectives?

These questions should help to clarify objectives, elucidate how decisions are made, and help make management more efficient. Most health care

activities have not yet been evaluated, and to identify efficient practice requires substantial investments in the evaluation of the outcomes of clinical procedures and of the cost-effectiveness of organisational practices (eg solo or group practice, health centres, etc). If the private sector expands, it should take an increasing share in financing this activity rather than, as at present, taking a 'free ride' off public action, which itself has so far been inadequate.

This type of analysis should also shed light on certain controversial issues in the organisation of health care. For instance, the case for contracting out NHS ancillary services (eg catering, cleaning and laundry) is unsubstantiated, being based on limited empirical knowledge and speculation. Experimentation is essential. Similarly, the case for the NHS buying surgical services from the private sector is based on the assertion that the private sector can provide such supplementary services more cheaply. Again the evidence to sustain this view is absent. If the view is wrong, 'privatisation' will in fact inflate public expenditure: a public service might be able to provide such services more cheaply and contain public expenditure on health care more effectively [Waxman 1982]. This is another area that needs experimentation, with controlled trials and monitoring over a reasonable period.

Research endeavours in these and other important areas will require the cooperation of practitioners in many disciplines: epidemiologists, statisticians, sociologists, accountants and economists, and will take time to provide answers. Defining and operationalising measures of output or outcomes will be difficult. A follow-up of patients for 5-10 years is required to ascertain the full effects of some medical interventions. Progress in evaluation will be slow, costly and difficult, but it must figure as a priority if scarce resources are to be used efficiently. There is also a need to investigate the behaviour of decision makers. For example, modelling the behaviour of doctors, nurses, the pharmaceutical industry, and public and private hospitals, could provide explanations of existing behaviour, and indicate how it could be altered and made consistent with policy objectives.

The research required to answer these various priority questions may be difficult and expensive, but applies to all health care systems regardless of the public/private mix. They do not involve ideological debate and foolhardy designs to solve fundamental problems whose nature is ill-understood and whose resolution is impossible in the present state of ignorance. The approach is that of science rather than of rhetoric.

Conclusion

Shifting the public/private mix, cost containment policies, and the pursuit of 'value for money', do not remove the need for regulation; they have a marginal effect and mostly just change its nature. This is specially true in periods of great financial restraint, as the present one. Such regulation is unavoidable because of inherent features of the health care market: monopolies fix the prices, quantities, and qualities of the goods and services they sell in a manner advantageous to them (the providers) rather than the clients (patients); social institutions (eg a tax-financed health service, and insurance arrangements, both private and social) reduce the price barriers to consumption and provide incentives for patients to over-consume because a third party (taxpayers or insurance contributors) pays; and there are few incentives for decision makers (doctors and managers of various sorts) to behave efficiently (ie to ensure costs are minimised and benefits maximised).

These market 'failures' occur in the public sector and the private sector alike. Both sectors are manifestly inadequate in the way they identify the goals of policy, and identify and evaluate the alternative means by which policy objectives can be pursued. Mere alterations in the public/private mix are often proposed which do not even attempt to draw on the lessons of the past. The 1948, 1974 and 1982 (re)organisations of the NHS, and the recent expansion of the private sector in the UK, have not remedied the failures of the health care market, public and private. Rather have they diverted attention — and energies — away from the fundamental problems of providing health care with efficiency and equity. The real resolution of the questions involved will take many decades of careful research, experiments and developments contributing to policy formation. It would be folly not to recognise the extent of the time scale required and the need for careful planning of this activity, in which government has a key role.

Elsewhere, the problems may be different, but not fundamentally so. Scarcity exists in all economies, developed and developing, and in all health care systems. The problems posed by scarcity — efficiency and equity — and by the nature of the health care sector are similar, and always and everywhere difficult to resolve. One lesson is clear, especially for developing countries. The adoption of technological innovations without a careful assessment of their impact on efficiency and equity is a simple leap in the dark. Very often such an assessment is likely to show that the latest 'technological marvels' have little impact on health but deplete resources significantly.

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