



A DOCTOR LOOKS AT  
HEALTH ECONOMICS

Sir Douglas Black



Annual Lecture 1994

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## SIR DOUGLAS BLACK

Sir Douglas Black MD, FRCP was Professor of Medicine at Manchester University, and is a former president of the Royal College of Physicians and of the BMA. He served as Chief Scientist at the DHSS and was a member of the Medical Research Council. He chaired the Working Group on Inequalities in Health which produced the 1980 'Black Report' which the incoming Conservative Government issued in only a limited number of copies. Nevertheless it later became the Penguin bestseller 'Inequalities in Health'. Since his retirement he has continued to write and lecture extensively. His most recent article on inequality, 'Deprivation and health' appeared in the Christmas 1993 edition of the BMJ, and his critique of the internal market appeared in the Proceedings of the RCP, Edinburgh, Volume 24, 1994.

## Office of Health Economics

The Office of Health Economics was founded in 1962 by the Association of the British Pharmaceutical Industry. Its terms of reference are:

- To undertake research on the economic aspects of medical care.
- To investigate other health and social problems.
- To collect data from other countries.
- To publish results, data and conclusions relevant to the above.

The Office of Health Economics welcomes financial support and discussions on research problems with any persons or bodies interested in its work.

## FOREWORD

Inequality in health is back on the political agenda in the UK. Three factors have made inequality an issue – firstly, concern that the internal market will enable some, notably patients of GP Fundholders, to get better treatment than other NHS patients, secondly, a revival of interest in community values, bringing with it a recognition of the impact of poverty on life expectancy, and thirdly, greater awareness that health care is being rationed, and will increasingly be so, irrespective of which political party is in Government. These factors require a more explicit debate about entitlement to healthcare, and about how we decide how much to spend on healthcare.

It was therefore a particular privilege to have Sir Douglas Black give the inaugural OHE annual lecture, which was held on 8 March 1994. The 1980 ‘Black Report’ was the first to document the extent of health inequality in the UK, proposing measures to tackle some of the social roots of poor health, as well as to ensure that the NHS helped to reduce inequality in health. In his lecture Douglas Black discusses the factors determining health, how healthcare should be financed and organised to minimise inequality and the role that cost-effectiveness analysis and public consultation can play in taking difficult decisions about rationing healthcare.

Adrian Towse  
*Director OHE*

## A DOCTOR LOOKS AT HEALTH ECONOMICS

I appreciate and welcome the challenge of considering a topic which fully engages my interest, but which lies outside any area in which I could claim to be a true expert. It is in the oft-repeated hope that 'the onlooker sees more of the game' that I venture to address this very important and very topical subject. To 'men bred in the Universities of Scotland' – of whom I am one – Samuel Johnson ascribed 'a mediocrity of knowledge, between learning and ignorance, not inadequate to the purposes of common life'. In laying claim to that level of knowledge, I am recognising a distinction between *knowledge* (which comes from reading and discussion) and *expertise* (which can be gained only by actually working for some time in a discipline). When I was in the DHSS in the seventies, I had good tuition in health economics from David Pole and Alan Williams; I have maintained, nor could I have escaped from, an interest in the subject ever since, an interest which has been fostered over the years in a number of ways, not least by the publications of the Office of Health Economics; and in the planning of this lecture, I have had valuable discussions with Adrian Towse. But I must still declare the imbalance between the informed interest of an elderly trainee in economics, and the experience of medical practice which comes from many years of actually doing it.

So you may ascribe to me whatever general biases you associate with health professionals. But there is more. Although I latterly assumed responsibility for health service research within the DHSS, the greater part of my professional life was spent as a consultant in hospital, centred on the care of individual sick people rather than on general health issues. But I have a plea in mitigation. My speciality was nephrology, and I would claim that in that speciality we were among the first to be compelled to make explicit, considerations which had always been implicit in medical decisions, but had often been overlooked. Advances in medicine can sometimes solve problems, for example smallpox and until recently tubercle in developed countries; more often, the old problems are replaced by new ones, often with an ethical and economic dimension. When I was first concerned with kidney disease, irreversible renal failure led cheaply and sadly to death. Dialysis and transplantation brought the promise of maintained life and relative well-being; but with it a host of problems for doctors and patients, for hospitals and homes, and for society. The economic



aspects of the care of end-stage renal failure have been considered more fully elsewhere<sup>[1]</sup>, in illustration of the interdependence of clinical, ethical and economic aspects of a problem, and the consequent need for experienced and expert clinical participation in the decision process.

Similar problems have since become apparent in many other areas of medical practice, as new procedures are not only discovered, but are also made practicable by concurrent advances in what is termed 'patient support'. For example, the survival rate after operation depends not simply on the manipulative skills of the surgeon, but even more on his judgment of the most appropriate procedure, and on the quality of anaesthesia and post-operative care available. Although surgery affords the most clear-cut instances, similar principles apply to medical treatment; there is little point in subjecting the patient to an adventurous schedule of medication, if the facilities are not available to support him through his illness to ultimate survival in reasonable health. To give a few examples, coronary by-pass surgery can prevent or palliate 'heart attacks'; more patients survive, but require on-going or future treatment at some cost. When I was a student, leukaemia in childhood was uniformly fatal; now the survival rate in acute lymphoblastic leukaemia is of the order of 50 percent; but the treatment regimes can be both costly and exacting. The 'cost' of a treatment may not be readily translatable into cash terms. For example, a liver transplant can be life-saving, but considerable amounts of blood may be needed to ensure survival. We are fortunate in this country to have a voluntary blood donation service, which not only conceals this item of cost, but also spares us the risks of abuse of donors, who may also in a commercial service fail to declare transmissible disease. Even preventive measures are not cost-free, though the unit cost may appear small in comparison with that of treating disease; and their efficacy is less easily evaluated than is that of curative or palliative measures in established and defined disease.

These generalisations may appear on the surface as discouraging to economic analysis; they are not so meant. Rather, they emphasise the importance, indeed the inevitability, of taking account of the economic aspects of – at the very least – new procedures, and even of apparently established procedures. Admittedly, they illustrate the possible complexity of an analysis which should include, in commensurate terms, all of the costs and all of the benefits. For the individual patient, rough estimates can sometimes be made; but the

critique of extending this to groups of patients needs further study. Before undertaking that problem, I would like to consider in sequence the determinants of health and disease; the scope and nature of a health service; the determination of the total budget for health – the ‘macroeconomics of health’; and the allocation of resources within the global health budget – the ‘microeconomics of health’.

## DETERMINANTS OF HEALTH AND DISEASE

The distinction is sometimes made between a ‘medical model’, which stresses acute illness affecting individual patients, commonly in a hospital setting; and a ‘social model’, which emphasises the psychological and social aspects of health and disease, and focuses largely on the care of chronic illness, commonly in the community. In his inaugural John Fry Lecture, David Morrell<sup>[2]</sup> suggested that the diagnostic process as carried out by general practitioners conformed more closely to the social model; and referred to ‘the demise of the biomedical model in diagnosis in general practice’. It is, of course, true that by virtue of his continuing relationship with patients and their families, a general practitioner is well placed to take account of such factors as ‘the inherited constitution of the patient, the family power status, class and culture, the patient’s view of his illness, the patient’s image of himself and the patient’s image of the doctor’. It is also true that much physical and psychological ill-health does not fit easily into established disease categories; but a good deal of ill-health also does fit into such categories, which may then point the way to melioration or even cure of what is troubling the patient. I suspect that the good family doctor, even in the limited time available to him, considers both the known characteristics of the patient, and the probabilities suggested by his actual symptoms; but in considering the second of these – the actual diagnosis, for short – he must owe a huge debt, acknowledged or unacknowledged, to the massive store of knowledge of the causes and natural history of disease. His access to that store depends on sound clinical method, and on appropriate experience.

It would therefore be my contention that a good doctor dealing with individual patients will keep in mind both social and medical aspects of the problem, whose relative importance will be almost

infinitely variable from case to case, but neither of which can be ignored. The determinants of health in the individual include the social factors mentioned in the previous paragraph. The medical factors in relation to individual health are similarly complex, including hereditary factors with varying degrees of penetrance and severity; effects of the intra-uterine environment and the birth process; risks of infection, accident and faulty nutrition in infancy and childhood; opportunities for exercise and mental stimulation; habits and life-style; and the risks in some occupations, and also the important risks of having no occupation. I have outlined these more fully elsewhere<sup>[1]</sup>. For the purposes of the present study, it may be more relevant to consider the determinants of health which are important at the population level, not forgetting that these represent the aggregation of the factors which affect the health of the individuals who make up the population.

In considering the *health of a population*, we should indicate how this is to be assessed and measured; and then discuss the factors which are likely to determine it.

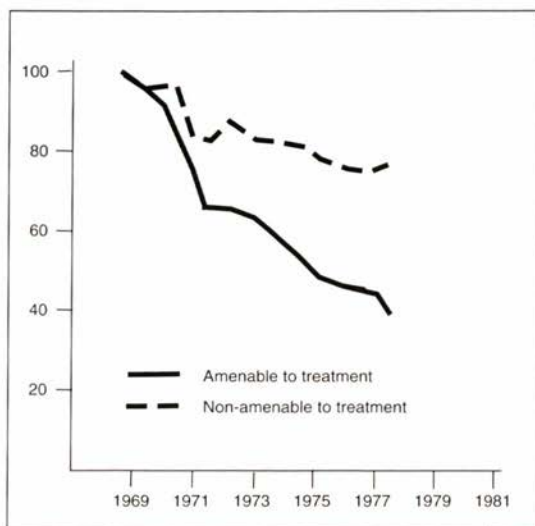
The most widely-used index of the health of a population is a measure of its mortality, either the death-rate per thousand per annum, or the expectation of life at birth. As tends to be the case with obvious points, the point is often made that what matters to people is the quality of the life they live rather than the timing or probability of their death; and of course various measures of 'quality of life' are being developed and brought into use<sup>[3,4]</sup>. But for the objective comparison of the health status of populations, indices of mortality have certain advantages. The outcome is sharp and ascertainable – 'stone dead hath no fellow'. The ubiquity of national mortality statistics allows geographical comparisons, which vividly demonstrate the enormous differences in health status between countries at different stages of development. Bills of mortality have been collected in this country as early as the sixteenth century, but a reliable compilation of national statistics came somewhat later, though McKeown<sup>[5,6]</sup> found figures from as far back as 1700 to support his historical picture of health in this country. One very necessary refinement in the use of mortality statistics for comparing the health status of populations is to correct crude death-rates so as to allow for intrinsic characteristics of the population, notably its age and sex composition. Women have a lower mortality than men; and after the vulnerable years of early childhood, mortality increases with age in



both sexes. One measure which allows comparison between defined populations is the standardised mortality ratio (SMR) defined as 'the ratio of the number of deaths actually observed in a study population to the number of deaths which would have occurred in the population if it had experienced the age-specific death rates of a standard population'<sup>[7]</sup>. (It may be worth pointing out that a comparable calculus should be applied to attempted indicators of the performance of hospitals, and of individual surgeons. An American study of 'hospital performance' showed that almost the entire variance in outcome could be accounted for by variance in the 'input', i.e. the characteristics of the patients being admitted in terms of 'disease factors and admission severity'<sup>[8]</sup>; and the surgeon who heads the list of merit may be the one who chooses to operate only on young patients, preferably women, at an early stage of mild illness).

On the grounds both of relevance and (comparative) simplicity, my brief survey of population factors in health is limited to this country, thus excluding broad climatic and cultural variations between different countries. There are, however, two historical changes which cannot be ignored. For the past two centuries at least, the death rate in both males and females has been falling very considerably, with a consequent increase in life expectancy. For example, in 1841 life expectancy at birth was 40.2 years for males and 42.2 for females; by 1989, males at birth could expect on average to live to the age of 72.9, females to 78.4. The second major historical change, not unrelated to the first, was in the age-distribution of the population. In the earlier years, there was a high birth rate and also a high mortality among infants and children, but on balance the population was still relatively 'young'; but now we have a lower birth rate, and also lower mortality, so we have an 'ageing' population. The underlying dynamism of these changes has been described by McKeown in detail<sup>[5]</sup>. He places the main emphasis on the control of infection by clean water supplies and sanitation, improved nutrition which increases resistance to disease, and improved housing conditions. His thesis is supported by the extent to which the improvement in health preceded specific medical measures which can be proved to be effective: even though surgery had been made reasonably effective towards the end of the 19th. century, the medical advances, prefigured by insulin and liver extract in the 1920s, only made a mass impact on mortality, including infant mortality, when sulphonamides, penicillins and other antibiotics came into widespread use in the 1950s.

Figure 1 Mortality of males in Finland over the period 1969-81, from diseases 'amenable' and 'non-amenable' to treatment



Note: The points from each year are expressed as a percentage of the 1969 figure, which was 47 per 100,000 population for 'amenable' diseases, and 222 per 100,000 population for 'non-amenable' diseases.

Source: Poikolainen, K. and Eskola, J.<sup>[9]</sup>

Accepting the predominance of social factors in determining health status at the population level, we have the paradox that many specific medical interventions can be demonstrated to be effective in common diseases, yet do not seem to have a heavy impact on total mortality. I believe this has essentially a quantitative explanation, brought out in Figure 1, which for simplicity shows data from Finland<sup>[9]</sup>, but a similar pattern has been shown for Hungary, Czechoslovakia, Poland, Germany, Canada, USA and England & Wales<sup>[10]</sup>. This graph differentiates the mortality due to diseases for which medical measures exist (amenable diseases) from diseases for which no effective measures exist (non-amenable diseases). Graphed in this way, there is a clear advantage for sufferers from 'amenable' diseases (not perhaps a great surprise); but as is made clear in the caption, deaths from the non-amenable diseases greatly outnumber those from amenable diseases, in a ratio of 222 to 47 in 1969. So if the two groups of

diseases were confounded, the decline in the deaths due to the amenable diseases would be concealed by the preponderance of deaths due to non-amenable diseases.

The historical perspective has great strength in demonstrating trends, but is perhaps less certain in defining causal factors, some of which at least are made conjectural by the lapse of time and memory. I would now like to turn to a contemporary phenomenon, with which I have had some acquaintance – the relationship between health experience and ‘social class’ (which is virtually a surrogate for socio-economic status). There is a wealth of evidence, well summarised and brought up to date in the 1992 edition of ‘Inequalities in Health’<sup>[11]</sup>, that there is at the very least an association between poverty (to use a shorter term) and ill-health, expressed both as greater mortality and increased morbidity. This is not really a very surprising finding, when we consider the multiple deprivations of extreme poverty, many of which would be expected to impair health, such as under- and mal-nutrition; overcrowded housing or at the extreme homelessness; greater risk of accident at work or play; more likelihood of being unemployed – and so on. What is more surprising, and also more suggestive that we are concerned with a real phenomenon, is the demonstration of a gradient of status-related health experience within the UK civil service<sup>[12]</sup>, which is innocent of the extremes alike of wealth and of poverty. Without entering here the long polemic on whether deprivation is the cause or the consequence of poor mental and physical health, I shall state my own belief that while ‘cause’ and ‘consequence’ do not exclude each other, the predominant relationship is that of social deprivation being a ‘cause’ of ill-health. This is not of course a universal belief, but it is one widely held by those with concern and responsibility for the public health. For example, the European Region of the World Health Organisation, noting the disparity in health between manual and non-manual classes, includes this among its targets:

‘By the year 2000, the actual differences in health status between countries and between groups within countries should be reduced by at least 25 percent, by improving the levels of health of disadvantaged nations and groups.’

And in this country an independent multidisciplinary group chaired by Alwyn Smith<sup>[13]</sup> included in its ‘goals’, ‘to promote equal opportunities for health’.

I shall be considering later ways in which a health service can contribute to reaching such objectives; but I have to recognise that a

radical approach to correcting ill-health associated with social deprivation must primarily be based on 'social' rather than on 'health service' provisions. To put it crisply, social evils call for social remedies. If we could once again bring ourselves to see the 'welfare state' as a necessary part of social engineering, and not as a monster devouring limited resources, we could begin to speak of trying to 'cure' the ill-health related to deprivation, and not simply of 'palliating' it by caring for the consequences. In seeming to describe measures within the health service as 'marginal' to social measures, I am far from saying they are 'negligible'. Health education, greater emphasis on prevention, more equal access to health care, and in particular emphasis on the health of mothers and children, all have an important contribution to make, both now and for the future.

### THE IDEA OF A HEALTH SERVICE

Before considering how a health service can be best financed, or even financed at all, it would seem logical to consider what a health service is required to do. At its broadest, there is a dual responsibility, whose recognition goes back to remote antiquity, as symbolised by the two Greek sponsors, Hygiea the goddess of preserving health, and Panacea, Aesclepios' daughter, whose business was with curing disease. In the medical world, we have fun trying to decide whether our craft is an art or a science, when it is quite obviously both. Similarly, disputes on the relative merits of 'prevention' and of 'care and cure' make topics for debate, but in the real world both must be done to the limit of available resources, of which perhaps the most important is the availability of people with the appropriate skills and dedication to pursue their own chosen objective. It could be, and has been, argued that more positive emphasis must be given to preventive medicine, since healthy people pay little regard to their health, whereas sick people are inclined to look for help, a legitimate desire which has produced the greater number of doctors and nurses whose concern is mainly with disease. The need for increased emphasis on prevention has rightly been recognised by Government, even if partly in the false hope that prevention is not only 'better' than cure (which it is), but also 'cheaper' (which in the longer term it may not be). Sometimes the argument is carried to the extent of advocating a radical change in medical education, to turn the minds of doctors from the treatment of disease towards an alternative concentration on



prevention; I do not think it is only my confessed bias as a clinician which makes me a sceptic in that respect. Every doctor (and nurse) should certainly be aware of what preventive measures and advice are relevant to the patient before them, and should also appreciate that what sociologists call the 'clinical encounter' provides a good opportunity of giving advice at a time when it is likely to be listened to and even acted upon; but before embarking on an educational opportunity, they should have won the patient's confidence by addressing his concern about what is wrong with him. For that, they must have attained and maintained the clinical expertise appropriate to their field of practice, lacking which even reassurance is empty and vain, let alone a decision on treatment when required. Quite rightly, increased emphasis is now being laid on validating the efficacy of the measures used in 'treatment'; a similar critique should perhaps be applied to measures of 'prevention'. It is possible that while childhood immunisations might easily prove their worth, advice on 'life-style', other than the unmitigated evils of smoking, might be harder to assess, both in relation to their intrinsic validity, and in relation to their practical acceptance. And to continue my qualified praise of the Government, the recent budget may show that, in relation to smoking, an ounce of taxation is better than a ton of exhortation – a ban on advertising and on smoking in public rooms would be even better.

Rightly or wrongly, the general image of medicine, not much modulated by the popular media, is one of treating disease. Although people in a general way might express a desire for 'health', and even pursue it in sensible ways, their interest in a 'health service' quickens remarkably when they notice something unusual which may betoken 'illness'. This may happen in myriad ways – physical, psychological or both –, but *need*, once perceived, is likely to be translated into *demand*, and that in turn will seek *supply*. In an ideal world, need and demand would be commensurate, and would be met by appropriate supply; but in the real world, we meet departures from this desirable equilibrium. The need may be misinterpreted by patient or by doctor; the demand may be inappropriate to it, or possibly misdirected; and supply may be inadequate to need, even when need has been correctly translated into demand. And of course there are needs which cannot be met by any exuberance of supply, a truth which is never palatable, but is perhaps more recognised in this country than in the USA. We have already had occasion to notice that potentially 'preventable'

deaths are greatly outnumbered by those due to diseases for which there is no effective treatment. That is of course less striking quantitatively than it was fifty years ago; then as now the majority of episodes of illness were minor and recoverable, but for illnesses that were life-threatening the outlook was then incomparably worse<sup>[14]</sup>. It could also be argued that 'preventing death' is certainly not the sole object, perhaps not even the most important object of a health service. The relief of physical and mental suffering is equally important, including that variety of relief which stems from reassurance, soundly based, and given sympathetically and convincingly.

In 1991, Culyer<sup>[15]</sup> criticised the 'almost entirely procedural and managerial way' in which reforms of the health service were being discussed, to the neglect of more important matters like efficiency and equity. The bad news is that more than two years later, his analysis remains cogent; the good news is that we remain largely, though not entirely, free of competitive private health insurance, which has problems going beyond those of mere cost. I see health economists as being allied with clinicians in the search for efficiency; and with the addition of ethicists, in the search for equity. We should remain faithful to the vision of the NHS, that care should be given freely at the time of need, however much that has had to be modified by lack of resources, with escalating charges for particular items. We need a balance between what *should* be done in terms of need; what *can* be done at practical clinical level; and what can be *afforded*; for this we need a combined economic, clinical and ethical appraisal. A critical concept is that care should be 'appropriate' both to the nature of the illness and to the circumstances of the patient. Appropriate is not a synonym for 'expensive', still less for 'wasteful'. The eradication of smallpox, and the treatment of infantile diarrhoea by oral rehydration are examples of efficiency at low unit cost. But there is justifiable concern in all countries about the increasing costs of health care. In this country, two important factors are an increasing proportion of elderly people, with their greater dependence on health care; and the considerable (and laudable) increase in what is medically and surgically possible. The economic problems in providing modern health care, irrespective of what system is in operation, are real, important and inescapable. They can usefully be resolved into two components, expressed as questions:

What share of national resources can/should be devoted to health care, and what general system of health care is appropriate in a

particular society?

Given an allocation of funds for health care, how are they to be distributed?

I shall discuss the first of these questions under the general heading of the 'Macroeconomics of health care'; and the second under 'Microeconomics of health care'.

## MACROECONOMICS OF HEALTH CARE

This part of the discussion relates to two different, but related, problems – the share of the national resources to be devoted to 'health', and the type of system which will give the best health care at the lowest cost.

On the first of these, I have little to say, since it is inescapably a political decision, on account of both the importance of health care to every citizen, and the sheer scale of expenditure involved. The direct allocation for a health service will of course be influenced by governmental opinion on the efficiency (or lack of it) with which funds allocated to health have been expended. Concern about perceived 'waste' has been one overt motivation of the current reforms. However, it has not yet been shown that the purchaser-provider split and the internal market have produced the economies for which they were designed. It is at least possible that a truer view of what was appropriate as a global allocation for health could be reached by making more explicit and transparent the costs and benefits of the various options for expenditure within the health system. Possible ways of doing this will be considered later. A complicating factor is that financial decisions which may appear remote from health can in fact influence the health of the nation profoundly. For example, it would benefit the nation's health, if more were spent on health education, better housing and necessary income-support through social security; yet these objectives must in a sense be in competition with direct expenditure on the NHS. Similarly, taxes on tobacco or alcohol are not just sources of revenue, they have social and medical effects. And if we accept, as I certainly do, equity as a criterion for social policy, we cannot be indifferent to the continuing transfer from direct to indirect taxation.

The second question, that of the optimal system for health care, is perhaps less obviously political. But if we accept the obvious, that in a just world a health service is for those who can benefit from it, not



for those who provide it, then it follows that an elected government has the right and duty to decide what system is best. I say this with reluctance, for I believe that the intrusion of an internal market, and a split between purchasers and providers, are unnecessary threats to the co-operation towards a worthwhile common purpose which was a hallmark of the NHS in the fifties and sixties. If mistaken decisions were deemed to take away the right to decide, any right to decide would vanish; and there is at least this comfort, that while at the margin some incentives have been introduced in favour of private provision, the principle of a national service is claimed – with varying degrees of joy or sorrow, belief or disbelief – to be unimpaired. Let me now try to justify my contention, that a national service funded in the main from general taxation, is the most efficient and equitable of the available options.

It should first be recognised that systems of health care do not exist in pure culture – there is a mix of provision by individual, corporation, or state in practically every country; it is the relative proportion of provision from these sources which varies. In this country, with which I am mainly concerned, the great bulk of the cost is covered from general taxation, with some revenue based on insurance contributions, and some private provision which was around 3 per cent of the total in 1980, and had increased to around 6 per cent by 1990. Before I lay out the merits of a national system, let me outline my appraisal of direct fee-paying by individuals, and of competitive insurance provision either for individuals or for groups.

Direct payment of doctors by fee or in kind goes far back in history, and it is fully compatible with good medical practice, with the notable advantage that there may be more time available to gain understanding both of the illness and of the patient. Convenience and amenity are legitimate purchasable commodities; and the legitimacy of private practice is a safeguard against a state monopoly. Although I am generally egalitarian in outlook, I can see that it would be unfair to prevent those with surplus resources from spending some on 'health'. They may not always get the best bargain, for they may judge the advice they get on superficial criteria, such as 'the bedside manner', which is certainly an asset in practice, but is not in itself a guarantee of competence. More serious objections are that the matter of a fee per item of service may induce some doctors to advise interventions which are less than necessary; and of course the obvious fact that the great majority of people cannot afford to have recourse to private



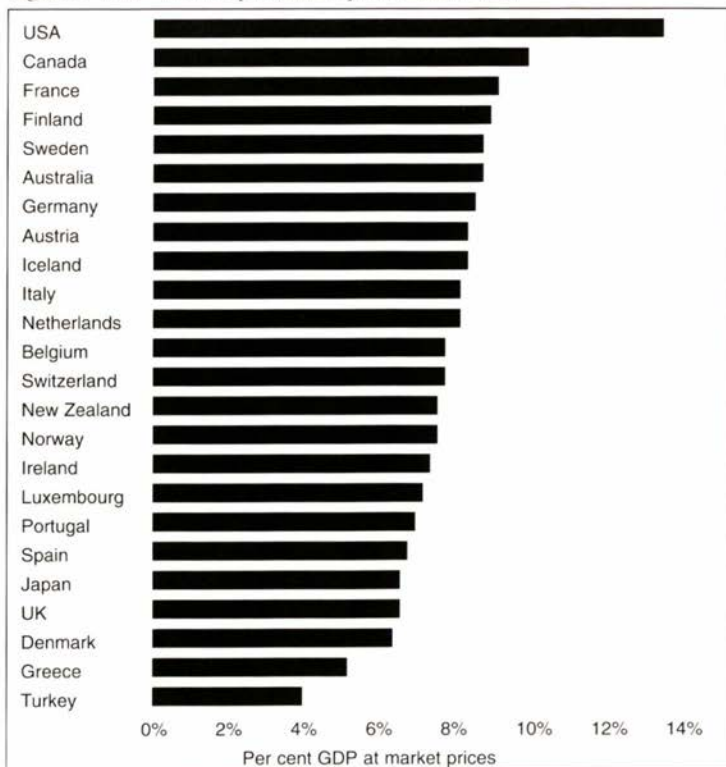
medicine on an individual basis.

That last consideration has encouraged the growth of various forms of private health insurance, both for individual subscribers and for defined groups such as employees of a business, or trade union members. A prevalent form of corporate health provision in the USA is the 'health maintenance organisation' (HMO). Such schemes have the overt attraction of disseminating what is seen as a better standard of care over sections of the population who could not afford strictly private medical care. This goes some way, but by no means the whole way, towards meeting the egalitarian criticism of individual private medicine; in the USA, where insurance schemes of various types account for a high proportion of expenditure on health, a quarter of the people have no such cover. A more subtle accusation might be made, also on grounds of 'fairness'. Since insurance agencies wish to make a profit, or at least, in the 'non-profit' sector, to remain solvent, there is a strong incentive to avoid clients who are at greater than normal risk. The practice known as 'risk-rating insurance' operates in various ways, including exclusions, loadings, selective marketing, payment capping, and policy churning, described in detail by Light<sup>16</sup>. And there is the further consideration, which might also apply to the 'internal market', that management of insurance and its supplementary devices must engender a cohort of functionaries who do not directly contribute to health care.

Possibly the greatest merit of a national, as opposed to any form of selective scheme, is the universality of its potential coverage. Even if laws cannot compel take-up, they can at least legitimate entitlement; and in this country we have also the framework, in the shape of nation-wide general practice, to match entitlement with practical access. Although I believe that the argument on the grounds of equity is sufficient to establish the advantages of a national system, it is also appropriate in this context to draw particular attention to its economic efficiency. The USA spends on health twice as great a proportion of their gross domestic product (GDP) as we do; and since their per capita GDP is 50 percent greater than ours, the averaged cost for each US citizen is three times that in this country. That may be an extreme case (and scarcely one we should be striving to imitate); but our service is also more economical than that of the majority of comparable countries (Figure 2). The explanation for the economy of our health service does not lie in lack of coverage, given the universal title of access. I have already mentioned one marginal factor, the

absence until recently of a cadre of watchdogs on expenditure (2000 men in grey suits and 20 doctors, as Mr. Redwood remarked, somewhat out of turn). But more important factors are an efficient system of raising funding; universal potential access to primary health care; effective 'gate-keeping' by family doctors; a general hospital service led by fully trained consultants; the privileged position (not self-appreciated) of government as a monopoly employer; and the coherence of a system which encourages health service research.

Figure 2 *Total\* health expenditure as percent GDP, 1991*



Note: \*Figures include public and private expenditure.

Source: OECD.

Let me be brief about the first and last of these factors. Our national mechanism for tax collection is efficient, so why not use it as the main source of finance for health? And research on the operation of the health service both documents its present state and points to possible improvements; a central directorate with reasonable funding for health service research has at last been established. If this had preceded, instead of following the 'reforms', we might have had a happier story. The contribution of government as a monopoly employer has been to keep the salaries of doctors and nurses below those in most Western countries, and now below those of senior managers.

By far the most important reason for the combination of efficiency and economy in our health service is its framework which permits and indeed encourages health care to be given in a setting most appropriate to the needs of the particular case. Community care, family practice, general hospital care and specialist hospital care form an ordered sequence appropriate respectively to self-assessed illness; to minor episodes of illness; to illness calling for consultation and investigation; and to illness needing special categories of treatment. These stages also form a hierarchy of cost. The great mass of illness is treated in the community, at considerable social cost, but at comparatively little cost to the service. The doctor of first call should be the family doctor, who is of course competent to cope with the great majority of those who consult him. But he has also the highly important task of deciding which patients need referral to a hospital, which is likely to be a general district hospital. Only a tiny minority of patients need the care of intensively specialised units or hospitals. Correct allocation of patients to primary, secondary or tertiary care is the most effective method for avoiding waste of resources. The criteria for allocation are clinical, depending on the nature of the illness and on the specific needs of that patient. Over the past decades, there has been built up a body of well-trained and confident family doctors, well aware of the importance of selective referral to hospital care; and also a consultant-led hospital service, competent to prescribe appropriate secondary or tertiary care. I am not so rash as to claim that mistakes could not be made; but at least we had a framework within which it was possible to exert clinical judgment. Doctors may in the past have acted with little concern for the financial impact of their actions; but they are less likely to do so in future, should they emerge from the healing waters of a finance-led service. What will not improve the accuracy of allocation is the modulation of an essentially

clinical decision by a network of contracts, different for fund-holding and non-fund-holding doctors, and for Trusts and directly-managed hospitals.

Although I have emphasised the economic advantages of a national system, as seems appropriate given the title of this lecture, I would now draw attention to the opportunity offered by such a system for planning in the pursuit of social objectives. I realise, of course, that 'planning' and 'social objectives' may not be universally agreed priorities – few things are. But with my own modest preference for order over chaos, and for equity over inequality, I see the advantage of a system which at least makes it possible to mitigate at a national level the health disadvantages associated with social deprivation. As has been pointed out (p.11), lessening the disparities in health status between groups has been accepted internationally as an objective. More important than the statement of an objective is the demonstration that something can be done about it; and within our national system, the allocation of resources for health has been altered in favour of regions judged to be disadvantaged on the basis of various indices of health status. The greater financial freedom now being given to Trusts and to fund-holding practices would allow them to take action within their own bailiwick in favour of disadvantaged groups, or even – in the case of practices – of disadvantaged individuals, as could happen under any system. Business acumen and altruism are not intrinsically antithetic, they may indeed be complementary. Such action might not arise spontaneously within the 'internal market'; nor on the other hand would an ethically neutral market inhibit it, once it had been recognised as a priority. Initiatives of this type could supplement national measures to lessen inequalities, but could not fully replace them.

By way of summary of 'macroeconomics', I suggest that the global allocation of funds for the health service has to be balanced against other claims, the final decision being a political one. The best system for health care is one financed from general taxation, and focussed as sharply as possible on clinical need, with a view to providing appropriate care. We had a service which went a long way towards realising such a system; to some extent, recent changes have been a departure from it.

It is now time to consider the factors which should determine the allocation of funds within an established global health budget.



## MICROECONOMICS OF HEALTH CARE

With the exception, not a specially happy one, of Neville Chamberlain, Ministers of Health have not tended to become Prime Ministers. The poison in their chalice may be this, that while they can influence and to some extent control the total allocation for health, and even the main heads of health spending, the problems which cause public concern and political opprobrium are problems of detail, which come welling up from the murky depths of what the members of central departments, perhaps with a measure of distaste, call 'the field'. The lengthy wait for operations, the child sent abroad for treatment, the unkind computer system which doesn't work, these are the things which breed headlines, and parliamentary questions (other than those planted by the department itself). It may have been some realisation of this, as well as a general desire to deconstruct any public service within range, that inspired the 'decentralisation' component in the 'reforms'. Enoch Powell, not regarded as a left-wing political analyst, has suggested that there was in the reforms a desire to evade detailed central responsibility for the myriad things that can go wrong in a health service; he also suggested that the attempted evasion would fail<sup>[17]</sup>. Events so far have not proved him wrong.

The faint hope that criticism of health service failings might be enmeshed at a lower level, and not rise to the top, is not the only reason why the reforms have brought criticism, not just from political opponents but from those who work in the service and from those who hope to benefit from it. Another reason is that a system which substitutes line management for consensus is no way to run a multi-disciplinary service, which depends on co-operation at all levels, and whose problems call for analysis, including professional analysis, rather than rules promulgated from general managers ignorant alike of economics and of health. I have discussed elsewhere what I see as the ill-founded theoretical basis of the reforms, drawing on no less an authority than my countryman Adam Smith, the darling of the monetarist right<sup>[18]</sup>. What I want to do now is to discuss possible ways in which priorities can be assessed on a consensus basis.

It must surely be common ground that the assessment of health service priorities is inescapable. Alan Williams<sup>[19]</sup> puts the issue with characteristic clarity:

'No society can afford to offer all its members all the health care that might possibly do them some good. Each society has therefore

to establish priorities, i.e. it has to decide who will get what and, by implication, who will go without.'

Not only is priority-setting inevitable, it is not in conflict with either conventional medical ethics or with conventional welfare economics, provided that it is based not simply on efficiency or on the convenience of providers, but primarily on equity for patients and potential patients. There follows a lucid analysis of 'equity', identifying its 'horizontal' and 'vertical' components. In essence, horizontal equity accords equal treatment to equals; and vertical equity gives unequal, but appropriate, treatment to individuals or groups who are 'unequal' in specified respects, thereby meriting different provision. Though it is relevant to groups as well as to individuals, this concept is more easily exemplified at the individual level. Given that there are more 'candidates' for a worthwhile procedure than there are 'places' available, horizontal equity might be satisfied by a lottery, by selection on a 'first past the post' basis, or by strict serial removal from a waiting list; whereas vertical equity involves selection on specified ethically justifiable criteria, such as greater need, greater prospect of benefit, or even characters specific to the prospective patient. It is apparent that unlike horizontal equity, vertical equity involves discrimination, so that there will be losers as well as gainers. The grounds and the level of discrimination must be acceptable, if scarcely to the heaviest loser, at least to the collective sense of the community, expressed – however imperfectly – by its elected representatives.

Some years earlier, Williams<sup>[20]</sup> had drawn attention to a tension between 'egalitarian' and 'libertarian' attitudes towards health care. In the egalitarian view, which is loosely conformable to horizontal equity, 'access to health care is every citizen's right (like access to the ballot box or to the courts of justice), and this ought not to be influenced by income or wealth'. In the libertarian view, 'access to health care is part of the society's reward system, and, at the margin at least, people should be able to use their income and wealth to get more or better health care than their fellow citizens, should they so wish'. (The libertarian attitude could be taken as expressing a particular case of vertical discrimination, one hesitates to call it equity). Although grounded in moral perceptions, these attitudes have important implications at the practical level of resource allocation. The diffusion of resources dictated by the egalitarian attitude might limit any surplus set aside for specific initiatives dictated by vertical

equity, including funding of measures directed at reducing health inequalities – ‘fairness’ is not entirely straightforward, given the two faces of equity.

(Of course, one way of evading the dilemma of choice between pursuing horizontal or vertical equity would be to pursue neither. This was the way of Thrasymachus of Chalcedon, in Plato’s Republic, who equated justice with the will of the stronger – ‘I declare that justice is nothing else than that which is advantageous to the stronger’. This view has its modern equivalents, under such names as ‘Law and Order’, or even ‘Back to Basics’.)

In the context of health care, horizontal equity could be regarded as equal access to what is available, vertical equity as the apportionment of care in relation to need. It should be noted that the valid application of these two types of equity hinges on accurate categorisation of those designated, in the relevant respect, as ‘equal’ or as ‘unequal’. It may happen that those who are in fact ‘unequal’ may be wrongly classed as ‘equal’, and conversely. For example, people may be ‘equal’ in their entitlement to receive advice on health; but if their circumstances, like those of manual workers and their families, make acting on that advice more difficult, they are at least pragmatically ‘unequal’; and equity – other things being equal – would entitle them to special attention. A less serious, but still annoying, example of the fallacy of treating as ‘equal’ those who are in fact significantly ‘unequal’, may be seen in the linguistic fashion of ‘politically correct’ speech and writing; as when anxiety to avoid the offence of addressing a lady as a man leads to addressing her as a chair.

In his ‘Conclusions’, Williams<sup>[19]</sup> admits to ‘a high level of abstraction’ and ‘a sense of vision’; but also to ‘setting aside the severe practical difficulties that confront us in implementing such a system’. We must now consider possible criteria for the setting of priorities, with due but not undue regard to the practical difficulties. There are, however, two general constraints on the setting of priorities, irrespective of the particular criteria selected for doing so – the rigidity of the system in being; and the inconstancy of need. The first of these is most visible in terms of buildings, but that is not the most important element of rigidity, which lies in the staffing structure. Wages and salaries now account for just over four-fifths of the gross expenditure on the NHS, so this is not an expense which can be neglected; but also a high proportion of those employed in the service are both highly trained, and adapted over time to their present



function. Their loyalty to the particular institution in which they serve adds a glow of pride to their service; the planner anxious to close a hospital may see things differently. The second general constraint on priority-setting is the Protean inconstancy of need. The age structure of the relevant population changes; the pattern of disease prevalence changes; and the scope of medical intervention changes. The first of these has engendered the geriatric speciality, and facilities for its exercise. The second can be illustrated from a single disease, by the disappearance first of sanatoria, and later of the mass-radiography programme. The third is legion, leading as a rule to increased demand and concomitant expense. There is of course an interaction between disease prevalence and medical activity, but it is only the latter which can be pragmatically 'controlled', a matter to which I return later.

Given the need to set priorities, we must consider the 'units' to which priorities might be assigned. Are these to be individuals (surely a matter for individual consultation); so-called 'client groups' (e.g. children, blind or otherwise handicapped people); types of service ('caring' or 'curing', as if the two were easily distinguishable); types of illness, necessarily in broad categories; particular procedures (e.g. those designated as 'high technology'); even value to the community, preferably not self-assessed; or the parent of them all, ability to pay? Let me simplify the task, to a limited extent, by taking out of it 'the individual', and the cognate attributes, value to the community and ability to pay. I am discounting these on pragmatic, not on ethical grounds – it still leaves plenty to think about.

Taking first the 'client group' approach, each of these tends to generate at least one and often more 'pressure groups', whose competition then imposes on decision-makers an array of value judgments. To deliver what may seem a harsh opinion, while I acknowledge the immense humane achievement of many pressure groups, I cannot see this as the basis for setting priorities. The only group for which I can see a strong pragmatic case (as we did in the 'Inequalities' Report) is that which we lump together as 'children', the case for them resting on the long-lasting dividend to be expected from a successful investment in their health. Even so, given the general aversion of finance departments to 'top-slicing', I think it unlikely that ministers would take the risk of openly making a substantial special 'allocation for child health' out of a generally straitened health budget.

There must also be an element of value judgment in setting priorities between types of service. Following the Ely enquiry RHS



Crossman in 1969 spoke of ‘the Cinderella services’ a graphic phrase which legitimated the transfer of large resources to a sector which almost at once began to be transferred to ‘the community’ (a move which the resources largely failed to follow, which lesson has been well learned by Crossman’s successors). It may be difficult to decide whether a change in priority between sectors of the service is the result of a decision, or the unintended consequence of changes made on other grounds. A topical example is the additional leverage given to family doctors, especially those who have chosen to be ‘fund-holders’, to secure hospital admission for their patients. Without opining on the merits of a real change in balance, it can be asked whether this was an intended consequence of the ‘internal market’, or just a ‘happening’.

It is not on the face of it ‘fair’ to discriminate between sufferers from different types of illness. It is not, however, without interest to look at the degree of burden laid on the health service by broad categories of illness. David Pole and I quantitated for fifty categories of illness the burden laid on the service in terms of hospital bed use, outpatient visits, and visits to family doctors; and on the community by sickness benefit and loss of life expectancy.<sup>[21]</sup> The detailed results are interesting, but as a basis for priority-setting they have the drawback that the different categories of burden have very different profiles of related types of illness. For example, mental illness and handicap at that time accounted for 46.5 percent of hospital bed occupancy, but less than 3 percent of loss of life expectancy; whereas arterial disease, expressing itself as ischaemic heart disease or ‘stroke’, accounted for 33 percent of loss of life expectancy, but only 7 percent of bed occupancy.

Given the cacophony of demands of varying intrinsic merit from all sides, there is never going to be an easy way of reaching agreed priorities, which in effect means that some demands, or classes of demands, will not be met. My own view is that the least difficult way of setting about this task would be to exclude from public funding certain categories of procedures or treatments. The first steps in that direction might not be too difficult – to take an extreme example, people of some means might be expected to pay for the removal of once-treasured tattoos which the lapse of time had made embarrassing, or for repeated facial operations attempting to restore bygone youth and beauty. However, economies thus made could not be expected to go very deep; and it would also be important to avoid

any stigmatisation of those suffering from diseases to which their life-style might have contributed – we have all, or most of us, paid our taxes.

One suggestion sometimes made is that the practice of medicine should be liberated from the demands of what is termed 'high technology'. There is, of course, a great deal that can be done at the level of primary care; and it is also true that on the basis of a good 'history' many clinical problems can be sufficiently defined for appropriate advice to be given, or action taken. However, there are also many clinical problems whose elucidation calls for investigation involving chemical, radiological, or microbiological technology; and of that technology only a small part could be defined as 'high'. The challenge of high technology has been considered in depth by Bryan Jennett<sup>[22]</sup>. For me, the criterion is 'appropriateness' rather than 'height'. CT-scanning or NMR (in America, MRI) might be considered moderately 'high'; but they have saved many patients from the discomfort of air-encephalography or the use of contrast media. The greatest waste in technology-based investigation comes not from the use of high-cost procedures, but from unnecessary medium-cost tests driven by fear of litigation or simply representing 'sloppy medicine'. Another potentially correctable cause of waste is the dissemination of technologies which have not been adequately evaluated. The criteria for evaluation are well known<sup>[23]</sup>, but there is a problem of timing, and sadly still a lack of statutory provision for doing so. An intervention made too early might stifle innovation; one made too late would be ineffective, for there are fashions in medicine as in raiment.

Discrimination both in investigation and in treatment is an integral part of good medical practice; but the experience of individual practitioners is limited, and their skill variable. There is therefore a strong case for reducing the management of defined syndromes to standard procedures, perhaps made accessible by algorithms; but these should not be based on individual authority, but on consensus conferences for general systems of treatment, and on controlled trials for specific medicines or operations. To some extent, that is a counsel of perfection, given the vastness and diversity of diseases and possible remedies; but for common defined problems this approach is under-used.

Again, my own view is that for the individual patient the choice of investigations and of subsequent management is so much influenced

by the nature, stage and severity of the disease, and by the circumstances of the patient, that it must remain as a clinical challenge, and not be made the basis for rationalisation of the service. But that does not at all rule out the consideration of medical and surgical interventions on a group basis, and if possible arranging them in a hierarchy of usefulness. This has been done, or attempted, in Oregon, where 688 'medical treatments' have been ranked 'on the basis of a complex formula that considered efficacy, seriousness of disease, prevalence of disease, and cost'. A cut-off point at number 568 in this array excluded less than a fifth of available treatments, and the application of this procedure has been sanctioned by President Clinton at federal level<sup>[24]</sup>.

This type of exercise is a difficult one, for two main reasons. The first of these is the difficulty of reaching a median score for the group, in view of the diversity in possible outcomes. However, difficulty and impossibility are not the same thing, and in other fields biometry has surmounted similar problems. A more formidable difficulty arises in this way, that while it is comparatively easy to estimate the average cost of a procedure, and even reduce it to monetary terms, it is much more difficult to get a quantitative estimate of benefit, let alone assign to it a cash value to be compared with that of cost. The approach which has been most studied in this country is that of estimating the increase in survival consequent on the procedure, and modulating it to take account of any reduction in 'quality of life' which might also be expected. It is possible in this way to arrive at an estimate of 'Quality-Adjusted Life Years', or 'QALYs'<sup>[25]</sup>. Even though QALYs cannot well be translated into cash terms, they do at least give a quantitative estimate of the average benefit of a procedure, to set against its cost. Besides being a pioneer effort in an important direction, the QALY approach has the great merit of stressing the quality as well as the duration of the life to be extended. There is, however, a difference in 'measurability' between duration and quality. Even duration is not entirely straightforward in interpretation, for survival depends on the selection of patients and on the skill of the whole team, as well as on the intrinsic merits of the procedure itself. The first estimates of quality were made by a panel of only seventy members, assessing various hypothetical states of 'disability' and 'distress'. Other indices of quality of life have since been developed, based on self-assessment and on interrogation of actual patients with various states of ill-health. One such is the 'Index of Health-related



Quality of Life' (IHQL), which also differentiates between 'physical' and 'emotional' distress, and incorporates more sophisticated techniques of scaling<sup>[26]</sup>. There are now on both sides of the Atlantic a great variety of indices of 'quality', some of which include social adjustment for work and recreation<sup>[3]</sup>.

It has been suggested (and denied) that the QALY approach is 'unfair' to the elderly. This criticism could be met by some form of loading of the QALY value; but when loading is mentioned, it is usually loading in favour of children which is advocated – a proposal from which I would not dissent, except that there is already a bias in favour of younger people, and attempts to put a figure on loading generally founder in disagreement. Another criticism made of the QALY approach is that it 'is largely insensitive to considerations of distributive justice'<sup>[27]</sup>. For example, a population drawn from the professional classes would be likely, after any particular procedure, to 'do better' (and thus register a higher QALY), than a population drawn from unskilled manual workers or from the unemployed. This could, for example, enhance the QALY rating of coronary bypass operations, largely done on the affluent, compared with operations for hernia, which is more prevalent in manual workers. This matter could also be dealt with by loading, but the amount of loading would in the end be arbitrary.

Before leaving QALYs, I would express general agreement with the assessment of a Director of Public Health, speaking as a 'purchaser of health services'<sup>[28]</sup>:

'QALYs may not be the universal calculus of health care, and using them will not result in the depoliticisation of setting priorities for health care. However, they represent, I believe, an important stage both of our thinking about health status, and of a common language for expressing health states.'

So far, my discussion of the microeconomics of health has been concerned primarily with economic efficiency – getting the best value for money, to use a phrase which is more often on the lips of politicians than it is demonstrable on the ground, except sometimes at the lowly level of responsible clinical practice. But as Culyer<sup>[15]</sup> and many others have pointed out, a decent health service is marked by concern for equity as well as for efficiency. One manifestation of that concern in our NHS was the move to transfer resources towards those regions of the country where need was greatest. The Resource Allocation Working Party (often referred to by the acronym RAWP,



which lacks the euphony and the egalitarian overtones of its Scottish analogue, SHARE, an acronym from Scottish Health Authorities Resource Equalisation) devised a formula which in essence used relative mortality as a surrogate for relative health need. Substantial reallocation did in fact take place at the Regional Health Authority (RHA) level; but within the health regions great variations remained, with deprivation focussed not as formerly on rural areas, but on the inner cities. The decentralisation of funding which is (by some) an acclaimed feature of the reforms might enable these local issues to be addressed, using the improved indices of deprivation which have been developed in the past decade<sup>[11]</sup>. This possibility has been realised by enlightened local authorities. For example, Manchester City Council and the Manchester Health Authorities have set up a joint Health for All Working Party, which has produced for ten defined areas of the city an analysis of social factors (housing, poverty, crime, ethnicity – even down to ‘complaints about cockroaches’) which can now be compared at local level with similarly detailed health statistics (mortality and morbidity, both total and from specific diseases, hospital admissions, birth-weights, and so on)<sup>[29]</sup>. This kind of detailed fact-finding is a necessary precursor of appropriate action; but for that to be taken, there must also be a determination which appears to exist at many peripheral areas; but if it exists at the level of central government its profile remains low.

Personally, while I welcome and admire such local interest and initiative, I believe that the problem of ill-health related to social deprivation is of an importance which warrants an approach at national level which would strike at the root of social deprivation by restoring the welfare state<sup>[30]</sup>, and also by embracing EC initiatives on employment rather than obstructing them. But in the health field itself, the type of initiative which I have illustrated<sup>[29]</sup> should be fostered and also appropriately funded for subsequent action.

At the end of the day, however, we have to realise that the vision of a health service which is free to the consumer, open to all, and offering the whole gamut of procedures which might be of benefit is not one which even the wealthiest of countries can afford to finance in its entirety. Something has to give. The main options would appear to be, to charge for certain services; to limit the beneficiaries; and to ration the procedures. We already do the first of these, to an increasing extent; but with any acceptable system of exemptions, this can only be a marginal economy. The second is inherently inequitable; and

even in the USA they are now striving to get away from it to a comprehensive system. I hope I have sufficiently indicated my preference for the third option, but it still requires a great amount of interdisciplinary work to make it practical. Much effort has been put into the development of information systems in the reformed NHS, with the avowed purpose of ensuring, or trying to ensure, that 'money follows the patient'. But they could bring the benefit (uncovenanted, unanticipated, and unintended) of facilitating analysis of the cost-benefit aspects of procedures, a prerequisite of any equitable attempt to ration them. Analysis of the relative value of different interventions has been a stated objective of the Directorate of Research and Development, in itself a welcome response to recommendations from the House of Lords.

## CONCLUSIONS

Having reviewed the determinants of health, and the objectives of a health service, I conclude that the allocation of funds to 'health' cannot be viewed in isolation, but must be related to expenditure on other areas which have a bearing on health, such as housing, employment, social security and education. Because of this, and also because of the sheer magnitude of the sums involved, the global allocation for a health service has to be the responsibility of central government.

Again because of the size of the necessary expenditure, the money required must be raised by the most efficient means available, which is from general taxation, and not from insurance or private levy. To the extent that health could benefit from social equalisation, direct income-related taxation should be preferred to indirect taxation, which constitutes in relative terms a greater burden on the poor.

When it comes to sharing out the budget allocated to the health service, a national system gives the greatest cohesion for rational decision-making, and also the widest opportunities for virement in response to changing needs. The recent reforms seem to me to have been counter-productive to these objectives in several ways. The fund-holding split in general practice and the encouragement of trust status for hospitals have prejudiced the cohesion which is one element of a sensible service. A genuine or 'perfect' market in 'health care', even if it were desirable, may be unachievable, in view of the complexity and uncertainty of the putative merchandise. An artificial or 'managed' market, besides being alien to an equitable national service<sup>[18]</sup>, carries within itself the reasons for its own failure – reasons of which Donald Light<sup>[31]</sup> has identified no fewer than ten.

Good decision making and good management are important in a health service as in any other. But a service, while having recognisable business components, is not itself a business; and line management has not proved itself superior to the consensus management which worked well until it was submerged in a succession of theoretically-based reorganisations. The NHS was quite a healthy plant, until the fashion for repotting it took over in the early seventies.

But decision-making cannot be left to pressure groups, or vested interests of providers. I have suggested that one possible objective basis for 'prioritisation' could be the further analysis of available medical and surgical interventions in terms of their cost and their benefit, taking account of both quality and duration of survival. Techniques for doing this are developing, and should be encouraged further.

As a mechanism for social engineering, I admit with some reluctance that even a national health service is of limited value, since so many of the roots of illness lie outside it, in our genes and in our social environment. But I am well prepared to settle for that which it can do, cure when possible, relieve suffering, and always sustain. 'Guerir quelquefois, soulager souvent, et conforter toujours' is not an unworthy aim.

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