

The promise of a reformed NHS: an economist's angle

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What I have to say can be divided into two parts: the angle and the promise. First, the angle. There are two overriding concerns that must lie at the heart of any economic appraisal of the NHS reforms: the first is efficiency, the second equity. The white paper, its associated working papers, and subsequent circulars have all been unaccountably thin in laying out a coherent and ethical justification for the reforms in terms of these two concerns. This accounts, at least in part, for the almost entirely procedural and managerial way in which the substance of the reforms has been discussed. In this paper I take up the challenge posed by this vast void and try to fill it.

One cannot begin to discuss efficiency without talking about objectives, nor can one discuss equity without talking about the entity that is to be equitably distributed. I shall assume that we are concerned with *health*. Efficiency means using resources in the NHS so as to ensure that they have maximum impact on health; equity means distributing resources in the NHS so that their fruits in terms of better health are fairly distributed among the population.

Efficiency

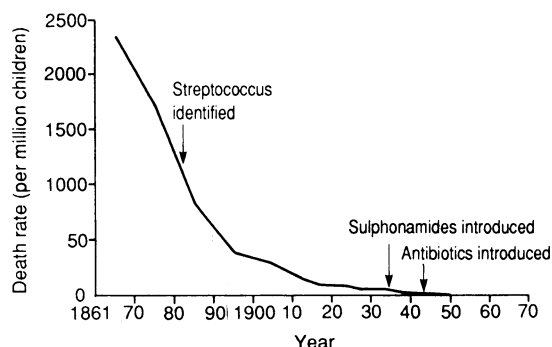
Efficiency can be refined into four kinds. The first is *providing only services that are effective in the sense that there is believable evidence that patients will enjoy better health with the interventions than without them*. This reminds us that clinical epidemiologists tell us that much medical care has never been subject to systematic scientific testing, that much practice is based on that species of gossip known as the case study, that there is often a strong "medical signature" in explanations of costly differences in practice, and that the statistical design of much clinical research has in the past left much to be desired.¹⁻⁶ Moreover, health care as such is only one of the various determinants of health, and it may be marginal at that—at least in global terms. Take scarlet fever.⁷ In the 1860s the mortality for children under 15 from scarlet fever was higher than that from whooping cough, measles, or diphtheria, but as McKeown's results show (figure) the rate was declining before the streptococcus had been identified, and by the time that effective chemotherapy in the form of

the early sulphonamides became available the vast bulk of the death toll had already been eliminated. Apart from any spontaneous decline in the virulence of the disease, the main factors promoting better health seem to have been better nutrition (probably) and better hygiene (almost certainly). The activities of the humble apothecary or the prestigious fellows of the Royal College of Physicians were alike relatively insignificant—and this seems to have been true of infectious diseases generally.

I draw your attention to these things not in order to belittle the achievements of scientific medicine—but to draw out two lessons: one factual, the other moral. The factual one is that it was and is reasonable to ask questions about both the absolute and the relative effectiveness of every clinical procedure. The moral lesson is that to offer ineffective care is unethical if you allow that maximising the impact of health care on health is a properly moral objective. The reason for this is simple: if resources are used up on ineffective care, or even on only relatively ineffective care, then resources are denied to care that is effective and that must—there is no denying this—reduce the overall impact of health care on health.

The second kind of efficiency is *providing whatever effective services are provided at least resource cost*. This may seem a distressingly economic view of efficiency, but its high morality is scarcely in doubt: if one is not efficient in this sense then, again, one is using resources unnecessarily that could have been used to promote the health of some without disadvantage to anyone else's health. In the end, the true cost of health care is not pounds and pence but, rather, the health that the system has not generated but could have, given its resource base.

The third kind of efficiency is *concentrating resources on those effective services, provided at least cost, that offer the biggest payoff in terms of health*. Commonly used measures of health outcome are reductions in mortality, survival rates after x years, or years of life gained. Because much of modern medicine is not concerned with saving lives but to improving the quality of life, I much prefer the approach to outcome that is exemplified in quality adjusted life years (QALYs), though that instrument is still far from perfect and may well come to be superseded by others (such as healthy years equivalents). A trawl through some recent publications yielded the results shown in the table. Regardless of data imperfections (and probably methodological quibbles too) the differences in cost per unit of outcome indicate that it is more than merely likely that some redistribution of resources away from high cost per QALY activity towards low cost per QALY activity could substantially increase success at being efficient in the third sense. Indeed, the belief that health care is not as efficiently applied to meeting needs as it could be is underlying governmental reluctance to fund the NHS at a much higher level, so using existing resources in demonstrably better ways may be the best strategy for raising the



Mortality of children under 15 from scarlet fever

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Intervention	Cost per QALY (£)
Benign intracranial tumours	240
Subarachnoid haemorrhage	310
Pacemaker implantation for heart block	700
Hip replacement	750
Coronary artery bypass grafting for severe angina, left main disease	1 040
GP control of total serum cholesterol	1 700
Coronary artery bypass grafting for severe angina with two vessel disease	2 280
Renal transplantation (cadaver)	3 000
Breast cancer screening	3 500
Heart transplantation	5 000
Metastatic tumours in central nervous system	11 000
Coronary artery bypass grafting for mild angina, two vessel disease	12 600
Haemodialysis (in hospital)	14 000
Malignant brain tumour	69 000

Sources: references 8,9.

proportion of the nation's resources devoted to the NHS.

The fourth kind of efficiency is *providing such a mix of effective services at the least resource cost, and on such a scale, that the benefit from having more resources is no larger than their cost*. This is evidently the test for an efficient scale of operation of the NHS: the marginal cost of additional QALYs (or whatever outcome measure takes your fancy) rises as increasingly recalcitrant cases are treated, and the time to stop putting resources in is when the worth of the additional outcome is judged to be equal to the cost of the additional resources. Needless to say, this is hugely difficult to assess. One reason is that one can never be sure that the additional resources really will go into cost effective services with a high health payoff (or cost effective research with sufficiently valued expected research outcome, or cost effective teaching . . .). Another is that the judgment required is an inherently difficult one—and political at that—as to whether the extra health (assuming it to be positive) is worth the additional resources (which have, of course, valuable uses in other public expenditure programmes or in taxpayers' pockets).

Equity

Most discussions of equity are disconcertingly vague—even vaguer than those of efficiency. There must therefore be virtue in trying to be precise. Equity (following Aristotle) is of two sorts: horizontal and vertical. *Horizontal equity consists in the equal treatment of individuals who are equal in relevant respects; vertical equity consists in the appropriately unequal treatment of individuals who are unequal in relevant respects*.

To get further with this one needs to identify the relevant respects and the appropriate treatments. Two commonly adduced relevant respects are in terms of presenting health and of need. This gives two sets of principles—*Horizontal* (1) *Individuals with equal health (or ill health) ought to be treated equally*; or (2) *Individuals with equal needs ought to be treated equally*—and their corresponding vertical versions—*Vertical* (1) *Individuals with worse health ought to be treated relatively favourably*; or (2) *Individuals with greater needs ought to be treated relatively favourably*.

These distinctions imply a distinction between presenting states of health and need. The main difference between them seems to be that, while the presenting state is whatever it is (along with a prognosis) if nothing is done, the need for health care embodies an opinion of the difference that medicine can make. It is not a before and after comparison but a with and without comparison. It may be described as “capacity to benefit”¹⁰⁻¹³ and is a kind of differential prognosis. If there is no effective care it cannot be held to be needed. But if there is, and it can benefit a particular individual,

then that individual is in need (of health care). It is entirely another matter as to whether all such needs ought to be met. It is entirely possible to talk about meeting needs equitably without insisting that all needs ought to be met. Indeed, in general it would be neither efficient nor equitable to meet all the needs for health care, for that would involve too great a sacrifice of the other good things of life, which ought also to be efficiently and equitably distributed.

Of the two kinds of “respect,” I much prefer the one based on needs, on the ground that giving resources to the sick simply because they are sick is rather like giving meat to vegans simply because they are hungry. Resources are a means to an end. If no good end can be served, there is no point in either efficiency or equity in using up resources that could be better employed elsewhere. It is, however, evidently a good deal more difficult to measure needs in my sense than it is to measure, say, mortality or morbidity. So, if you agree with my “angle” there is some tough thinking, measurement, and assessment to be done and some difficult judgments to be made.

What about treatment? There seem to be two main candidates, one focused on inputs, the other on outcomes: *treatment in the sense of equal or preferential use of resources (for example, as measured by expenditures)*; and *treatment in the sense of equal or preferential gain in health*.

The first of these has become quite popular in studies of who benefits most from the NHS¹⁴⁻¹⁶ but is, in my view, handicapped by the problems that, firstly, not all resources in health care are of equal equitable concern (such as hotel services of hospitals); secondly, that not all resources in health care are equally effective in their impact on health; and, thirdly, that equal expenditures for equal need or equal presenting health may easily imply quite unequal gains in health (with some being denied care although their potential gain is large). Similar problems arise with vertical equity.¹⁷

I much prefer, then, the second version of “treatment,” which focuses on the health improvements that are possible. As with need, this angle requires attention to be given to outcomes and to the links between the outcomes and the inputs that are necessary to bring them about.

Both these angles—efficiency and equity—are challenging to implement and both will be implemented only imperfectly. But let us remember two useful principles to guide us along what Tom Lehrer called the razorblade of life: *never let the perfect become the enemy of the merely good*; and, *our judgments may be imprecise but let's not pretend that the principles are, too*. It can do us no harm to have these encouraging maxims before us to remind us of what we seek to achieve and how far short of it we may be falling, without letting the inevitable failures and compromises cause us to throw out the baby with the bathwater.

The promise

Once the angle has been dealt with, the first thing that needs to be said about the promise is that one of the most promising features of the white paper was that it did not go in for private competitive health insurance. Private health insurance is invariably a disaster, and it is extremely difficult to see how it can be prevented from being a disaster.¹⁸ Firstly, all insurance worth the name involves billings by items of service or courses of treatment per patient; reimbursement of providers or patients by insurers; monitoring of and controls on providers by insurers; checks for abuse, error, and fraud; and the legal correction and enforcement of infringed rights. There are therefore large transactions costs that are substantially avoided by funding health care from general taxation. If these costs are avoidable

they ought to be avoided, on the same ground that any inefficiency ought to be avoided. Secondly, it is extremely hard to get premiums to satisfy the principles of horizontal and vertical equity on the payments side: equal contributions from those with an equal ability to pay, and higher contributions from those with greater ability to pay. Thirdly, if premiums are unregulated, they will be related to experience of ill health. Those with the worst health will pay the most, and these are generally the people with the lowest incomes. If premiums are regulated at, say, a standard community rate, then voluntary insurance will mean that some will choose not to take out insurance, especially relatively healthy and relatively reckless people—for them the regulated premium will seem too high. If they later fall sick or have a major accident they may be bankrupted or may become charity cases. If insurance is made compulsory to avoid this difficulty the competition between insurers presents each insurer with a strong incentive to “cream skim” by accepting only clients who are actuarially better risks than the average (there are plenty of informal methods for discouraging those whose custom is not wanted). This has happened among even non-profit insurers in the United States. Fourthly, health insurance is nearly always tied to employment, which can easily create anomalies for dependants, those changing jobs, unemployed people, and retired people. Finally, funding based on insurance has the world’s worst record for controlling health care costs. There is no perfect solution to any of these problems, but the one that most nearly completely avoids them is the efficient and reasonably equitable one that we already have in Britain: keeping private insurance on the fringes and using the general tax base with central budget allocations to regions and districts on an adjusted capitation principle.

Turning to the positive things the reforms have introduced, there can be no doubt that these flow entirely from the separation of the purchaser and provider roles: purchasers articulate the needs for health care; providers respond by supplying the services specified as needed in a broadly competitive frame. The greatest promise of the reforms flows from the first of these, though most public and managerial discussion seems to have focused on the second. The real promise arises at a stage before the seeking of bids. It comes from the duty to evaluate the health care needs of a community and to select the appropriate means of meeting them. I have heard it said—and read repeatedly—that the NHS is already in the business of measuring and meeting needs. That is not true. The NHS has never been in that business. It has never even had a common language in which needs are discussed, let alone defined, measured, and assessed, or for establishing the priorities and processes by which competing needs are sorted out efficiently and equitably. It is even worse than that. Although the NHS was from the beginning ostensibly in the business of providing equitably distributed care, nobody, not even the NHS’s strongest egalitarian academic supporters, ever bothered to look even at the geographical distribution of resources in the United Kingdom until Michael Cooper and I did 20 years ago—when the NHS was already well into its majority,¹⁹ and which led eventually to the Resource Allocation Working Party. The general attitude was one of complacency: it was assumed that needs would be met efficiently and equitably, without bothering to define terms or to find out what was actually the case or to devise mechanisms to bring reality more closely into line with aspiration.

It is a great revolution, then, that health authorities are now required to assess needs and the best ways of meeting them. Minds are at last going to be concentrated on defining and operationalising just the sorts of

concepts that I have been elaborating. Directors of public health are going to have a key role here. The early stages will doubtless be clumsy, but as the perfect is not going to be allowed to become the enemy of the merely good, there will be progress none the less.

There has to be considerable doubt about the ability of many of the current directors of public health to provide the kind of conceptual clarity and empirical information that is going to be needed—particularly by purchasing authorities—so short term training programmes are essential and there are doubtless also longer term implications for syllabuses in medical schools. But the problems that need to be solved are fairly fundamental, and purchasing authorities are going to have a high demand for the kind of skills that can help them to make the judgments they will have to make. For example, if you accept my “angle” on need, it is immediately clear that merely to measure current sickness and to forecast likely future trends, though hard enough in its own right, is inadequate in the pursuit both of efficiency and of equity: presenting states of health are just that (even when forecast); they are not need. It should also be clear that assessing needs and the best ways of meeting them are not narrowly defined professional tasks, let alone medical ones. Their assessment certainly requires technical medical judgments about clinical effectiveness and technical economic judgments about cost effectiveness. But, even more fundamental than these, the judgments are inherently value laden, that is to say, political. This applies to the selection of appropriate outcome measures, the priority weights that attach to their components, and the wider assessment of the priorities to be assigned, usually at the margin, to the various improvements in the health of client groups that the available resources make possible. A part of this judgmental process will also evidently include making judgments about the priorities to be assigned to general practitioners’ workloads and referrals. The very essence of a purchasing authority’s role is therefore the bringing together of the various kinds of expertise so that the ultimately political judgments can be as well informed as possible by “experts” without these experts determining issues for which their professional status does not actually equip them.

On the provider side, it is essential if an ethical outcome is to be realised—even partially—for success to be rewarded and failure penalised, where success and failure are judged in relation to meeting purchasers’ requirements. While success may be theoretically possible in directly managed units and systems that integrate purchaser and provider, the danger is very real that the purchasing function would become “contaminated” by provider interests, and that the myth of clinical freedom will continue to be used to cloak the seeking of personal advantage, the wielding of arbitrary power, and the perpetuation of too much ineffective—and ultimately unethical—clinical practice.

Failure is the tough nut. Staff—managerial, medical, nursing, and the ancillary trades and professions—are all going to be at risk. If contracts are not won, or performance falls short of what has been agreed, there must be redeployment, re-employment, and, in the limit, redundancy. Moreover, training must respond to—and preferably anticipate—skill shortages and surpluses.

It has often been remarked that competition between providers in the United States has had mostly undesirable results. This is in general true: it has created excess capacity, caused needless duplication of facilities, raised unit costs, and may have caused a deterioration in outcome (though the evidence is ambiguous here). The blame for these adverse results can much more easily be laid at the door of the

American financing system, however, than that of provider competition itself, particularly the absence of an effective budget constraint on either insured purchasers or, under retrospective reimbursement, on hospitals, and on failures to embody agreements about quality in contracts.²⁰ There is, moreover, evidence of cost savings under selective contracting, particularly through reductions in length of stay. So there is no particular reason to suppose that the worst features of the American system of health care will be imported lock, stock, and barrel into the United Kingdom.

Envoi

There is a set of principles, the ethical nature and economic rationality of which are of a high order, that can be seen to underlie the reforms but which have sadly received little prominence. It would be a great pity if this, together with an inevitable obsession with just keeping the NHS going in turbulent times, should mean that the wood is lost for the trees. It is to be hoped that we can all keep a sense of vision (the right angle on things) so that the promise that can be discerned is actually realised, and we do not suffer yet another "redisorganisation" of the NHS in accordance with a new set of vaguely felt aspirations as it becomes clear that we have loused this one up, or the oil price rockets, or the government changes—whichever hits us first.

This paper is based on a lecture given to the Health Reform Group in London on 17 January 1991.

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Persistent vegetative state and the right to die: the United States and Britain

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Patients in a persistent vegetative state have permanently lost the function of the cerebral cortex.¹ Their prolonged survival presents dilemmas for their families and carers as well as for society. In the United States families of such patients often seek court rulings to discontinue life sustaining treatment when hospitals refuse such requests. In more than 80 cases the courts have supported the wishes of families, but the refusal of the Missouri Supreme Court to follow these precedents brought the United States Supreme Court its first "right to die" case in 1990.

The vegetative state

According to surveys in Japan² and The Netherlands,³ about 40% of survivors in a vegetative state after acute insult have had a head injury. In most, severe diffuse axonal injury at impact severed white matter connections to and from the cerebral cortex, but secondary ischaemic cortical damage is sometimes dominant. In most non-traumatic cases diffuse hypoxic necrosis of the cortex due to cardiac arrest or hypotension or medical accident has occurred.⁴ Hypoglycaemic crises in diabetic patients and various acute cerebral diseases account for the remainder.

Patients in a persistent vegetative state spend long periods with their eyes open but have no voluntary activity or meaningful response to the environment. Their spastic limbs can withdraw reflexly from painful stimuli, the face may grimace, the eyes may briefly turn to light or sound, and groans and cries may occur.

Diagnosis depends on skilled observation over time because available investigations (for example, computed tomography, magnetic resonance imaging, or electroencephalography) are not helpful. Research investigations with positron emission tomographic scanning have shown metabolic activity in the brain at the level of deep anaesthesia.⁵

In a well documented series no patient who was still in a vegetative state three months after injury became independent subsequently; the few who regained consciousness remained very severely physically and mentally disabled and dependent.⁶ Of patients in a vegetative state three months after injury, about half die by 12 months but more than half of those still alive at one year live for three years or more, some surviving for 12, 15, 18, and 36 years.^{2,3} Prolonged survival depends only on basic nursing care and on adequate nutrition by nasogastric or gastrostomy tube.

Ethical issues

There seem to be no self regarding interests for patients in having their survival prolonged in a vegetative state—which many people regard as worse than death.^{7,8} Because such patients have lost the mechanisms by which they can experience distress the burdens of prolonged survival therefore fall on their families and friends, who have to witness its indignities. Health care staff know that they are engaged in a futile endeavour and that their skills are denied to other patients who might benefit. However, the reasons that usually

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