efficiency is not the only criterion for prioritising: members had to take other factors into account. As a result one additional proposed disinvestment was dropped from the proposals for maternal and child health, but it was agreed that the remaining nine recommendations would be formally incorporated into the next strategy document and would apply to contracts from 1995 (box). This is probably the first time that applied marginal analysis has directly influenced strategic planning in the United Kingdom.

The exercise has since been repeated with four more working groups, but the most difficult part of the overall process remains to be attempted. Each of the eight completed exercises entailed changing the balance of resources between the programmes of a single health gain area. The final exercise, which will involve shifts between health gain areas, will be undertaken at an, as yet, unspecified date.

Recently, the results of two additional applications of marginal analysis have been reported—one on services for elderly people with dementia in Aberdeen[9] and the other on gynaecology services in Glasgow.[10] Greater Glasgow Health Board has now indicated that the results of the gynaecology exercise will become policy, and the exercise is being extended to urological, diabetic, and stroke services.

Conclusion

The experience of Mid Glamorgan District Health Authority shows that marginal analysis is not only attractive in theory but useful in practice. Two points are especially worth noting.

Firstly, because the process entails value judgments the composition of the groups needs to be considered carefully. The ideal group depends on the nature of the programme. For example, small intimate groups worked effectively for health gain areas such as oral health and pain, discomfort, and palliative care. For learning difficulties and disabilities, however, the greater number of agencies with vested interests meant that a larger group with broader representation was required. That group included 10 representatives from social services, two representatives from voluntary organisations, and three people who used the services, in addition to 20 others employed by the health authority.

Secondly, judgments of the values attached to marginal gains and losses depend on a knowledge of local circumstances. For example, the proposal to consider disinvestment in the admission of children to hospital for reasons not based on clinical need was made in the knowledge that in some areas of Mid Glamorgan more than the average number of children are admitted for social reasons. Disinvestment might therefore be achieved without affecting admissions based on clinical need. This recognises that the marginal loss of benefit from reduced admissions for social reasons and for clinical reasons can differ. Similarly, local knowledge is needed to predict public, professional, and other responses to the changes.

Marginal analysis is clearly not a panacea and does not solve the problems of measuring benefit or of having incomplete or inaccurate data. It does, however, at least ensure that decisions are made about the right things and within the correct framework. Because of its focus on benefits and costs on the margin, it is a superior aid to efficient service planning than is total needs assessment and can lead to greater efficiency in the contracting process.

I thank members of the Health Economists' Study Group and an anonymous referee for comments on earlier drafts.

1 Mooney GH. *Economics, medicine and health care.* 2nd ed. Hemel Hempstead: Wheatsheaf, 1992.
2 Cohen DR, Henderson JB. *Health prevention and economics.* Oxford: Oxford University Press, 1988.
3 Robinson R. The policy context. *BMJ* 1993;307:994-6.
4 Mooney GH, Gerard K, Donaldson C, Farrar S. *Priority setting in purchasing: some practical guidelines.* Birmingham: National Association of Health Authorities and Trusts, 1992. (NAHAT research paper No 6.)
5 Secretary of State for Health. *The health of the nation,* London: HMSO, 1992.
6 Donaldson C, Mooney GH. Needs assessment, priority setting, and contracts for health care: an economic view. *BMJ* 1991;303:1529-30.
7 Welsh Health Planning Forum. *Strategic intent and direction for the NHS in Wales.* Cardiff: Welsh Office of NHS Directorate, 1989. (Ten accompanying protocols for investment.)
8 Mid Glamorgan District Health Authority and Family Health Services Authority. *Local strategy for health gain.* Cardiff: Mid Glamorgan DHA and FHSA, 1993.
9 Donaldson C, Farrar S. Needs assessment: developing an economic approach. *Health Policy 1993;25:95-108.*
10 Twaddle S, McIlwaine G, Miller A. *Improving gynaecology services within existing resources: a programme budgeting and marginal analysis approach.* Glasgow: Scottish Forum for Public Health Medicine, 1994.

(Accepted 21 July 1994)

Commentary: Possible road to efficiency in the health service

Cam Donaldson

The NHS at last seems ready to use economics as a framework for setting priorities. Cohen points to two main reasons why this is the case. Firstly, the advent of the purchaser-provider split has, among other things, led to a clearer definition of roles; explicit priority setting is now less easily avoided by purchasers. Secondly, some sensible person in the Welsh Office has offered guidance on how to set priorities. This process requires the use of economics techniques. Will England and Scotland follow suit?

The data free environment of the NHS should not prevent the use of economics as a framework within which less tangible costs and benefits are included alongside those which are tangible. This allows explicit observation of the trade offs made as a result of decisions to expand or contract a service. Cohen's work is an important example of such use of the economic framework.

The economics approach is not, however, free of problems.

TIME

Marginal analysis takes time. A team approach is required, with a change in focus from firefighting to more considered analysis carried out in enough time to be relevant to setting contracts.

RESPONSIBILITY

Marginal analysis is multidisciplinary. This is a strength as all perspectives are considered. Responsibility for such exercises, however, must be allocated to one or two people. Otherwise, each discipline will revert to focusing on day to day tasks within its own function, and the exercise will flounder.

DISAGGREGATION OF DATA

Collection of information in the NHS is not geared up for marginal analysis. It is often difficult to disaggregate data. The fact that marginal analysis exposes this is useful, and, as Cohen has shown, good estimates can still be obtained without delay. It is also important

Health Economics Research Unit, Department of Public Health, University of Aberdeen, Aberdeen AB9 2ZD
Cam Donaldson, *deputy director*

to note that although data on needs, current distribution of expenditure, and local knowledge are often unsophisticated, such data are used only to compile investment and disinvestment proposals. Subsequent marginal analysis would entail extracting more detailed data on these proposals, at least on costs.

Furthermore, this more detailed analysis may show that some proposals for disinvestment will be dropped and that not all proposed investments will be implemented. To be on the "wish list," therefore, is no guarantee of expansion or reduction. This seems to have been what happened in Mid Glamorgan, as shown by the starred options in the box.

ASYMMETRY OF INFORMATION

There is an asymmetry of information between purchasers and providers. This can have two effects. The first is to question whether and how providers should participate. The Mid Glamorgan group seems to have worked well, but there is no explicit reference to group dynamics. The extent and quality of such participation will vary geographically and according to the problem addressed.

The second effect is an overreliance on published work as a source of evidence, particularly on outcomes. Often, no such data relating to local issues are available. We are a long way from change based on outcomes in the NHS. The important thing about marginal analysis in this context is a framework. At best, this simply means a description of the possible outcomes of each option assessed, but it does not diminish the importance of these outcomes or the need to make decisions.

ALLOCATIVE VERSUS TECHNICAL EFFICIENCY

Marginal analysis can be used to identify ways of improving technical efficiency. This means that the same group of patients will receive care but in a different way. An example of this is day surgery. Resources may be saved which can then be released for another type of care.

Improving technical efficiency is useful, but it can be carried only so far until some people's outcomes are worsened to improve those of others. The exercise in Mid Glamorgan came up against the usual reluctance of group members to consider such disinvestment in beneficial activities.[1] Cohen implies that this problem was overcome, but it is not clear whether the four unstarred disinvestment proposals in the box do in fact entail reductions in benefit or improvements in technical efficiency. More description of these proposals would have been useful. A further point is that resource allocation across programmes—for example, child health versus palliative care—is not addressed. However, the within programme exercise is the starting point, not the end point.

BROAD ISSUES IDENTIFIED

To say that we need more counselling is useful, but measurement of costs and benefits requires some notion of how much counselling is to be introduced or expanded. This was done in Mid Glamorgan, but, for purposes of confidentiality, only the broad areas are listed in the box. This is unfortunate, as the move to specific proposals represents progress over many purchasers' vague plans and strategies.

BEYOND EFFICIENCY: INVOLVING THE PUBLIC AND ANALYSING EQUITY

The confidentiality referred to above is worrying for another reason. It seems to imply that consumers have no role in the process. Are they not to be consulted on the proposals? If not, why not? This, of course, is a problem not of the use of economics but of the NHS in general. There is no inbuilt incentive to involve the public.

Equity as well as efficiency is important. Cohen points out that other factors have to be taken into account. For equity purposes, it is important to know who incurs the costs and who receives the benefits of any decision to invest or disinvest. Marginal analysis is still required for this.

WHERE NOW?

This paper is a significant contribution to the use of economics in setting priorities in health care. The exercise was seen as useful by all parties. Marginal analysis addresses the relevant issues within the correct framework. Perhaps those involved in purchasing should undertake a marginal analysis of their own current activities. Potential areas for disinvestment could be firefighting and needs assessment, with a proposed expansion in marginal analysis.

1 Donaldson C, Farrar S. Needs assessment: developing an economic approach. *Health Policy* 1993;25:95-108.

ANY QUESTIONS

Is there any reason why symptoms of Parkinson's disease should improve during flight in a pressurised aircraft?

Air travel is epidemic and Parkinson's disease is all too common, but, so far as I am aware, benefit attributable to flying in a pressurised aircraft has not been reported. It would be intriguing to know which parkinsonian symptom(s) improved. Was it tremor, slowness, poverty of movement, dexterity, aching discomfort, fatigue, or general wellbeing? The immobility imposed by standard seats with or without a safety belt limits the possibilities for clinical observation. Furthermore, if improvement truly occurred in one or more of the numerous parkinsonian discomforts was it reasonable to attribute it solely to increased cabin pressure? There are several other potentially beneficial possibilities: the relief of eventually securing a seat after the usual delays and discomforts starting with the frenetic countdown from arising unnaturally early, followed by the physical and spiritual miseries of sharing cramped waiting space and other discomforts before the air journey actually begins, and the subsequent pleasure of relaxing with the first drink when the apprehension associated with the take off has dissolved.

One further point requires consideration. It has long been known that some people with Parkinson's disease benefit from sustained vibration. For example, it is recorded that one of Charcot's patients felt comfortable only when his carriage traversed the cobbled streets of Paris (a special fauteuil trépidant was designed); another felt better only when he was at work driving a tram in downtown Boston; others have claimed benefit when travelling by train; and others have reported unequivocal improvement during the application of a transcutaneous vibrator. Thus the location of the passenger's seat and perception of engine vibration are other fascinating possibilities. Until impeccable clinical trials of these clues have been vigorously conducted travel in a pressurised cabin cannot be unreservedly recommended as a therapeutic stratagem.—GERALD STERN, *consultant neurologist, London*