Contemporary Theme

Rationing: at the cutting edge

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It was the professor of mathematics at Southampton, Sir Bryan Thwaithes, who produced a figure that many health service managers now carry in their minds (fig 1)—one that shows expectations for health care increasing exponentially and running away from supply.[1] And it was in Southampton that the local health authority recently conducted a simulation exercise to discover how purchasers can begin to make the tough decisions that flow from the widening gap between what can be done by health services and what can be afforded.

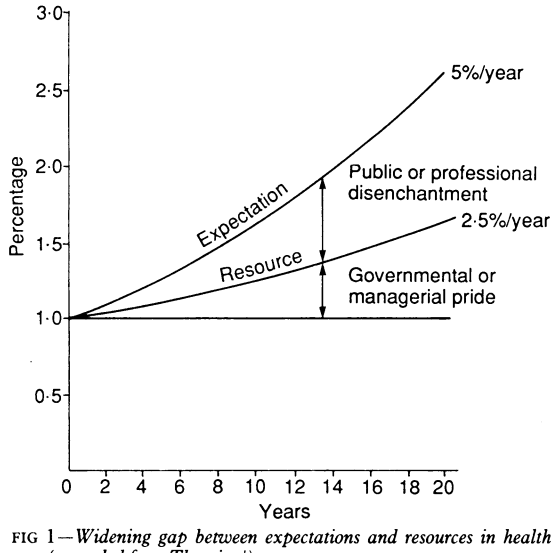

FIG 1—*Widening gap between expectations and resources in health care (amended from Thwaites[1])*

Those who watched the health authority struggle with the decisions did not envy it the task, but the authority is not alone. Oregon has already tried to rank explicitly the services that will be provided by Medicaid; New Zealand and the Netherlands are defining core services that will be provided by the state and by exclusion those that will not; Maryland has tried rationing based on providing Medicaid services only to those who also accept preventive services; and some English health authorities are beginning to announce that they will not supply services such as certain minor operations.

Rationing has, of course, been with us for a long time in most health services, but what is new is the move towards making it explicit. The change seems to be driven by the widening of the gap between demand and supply; the increasing unwillingness to leave decisions about rationing to professionals behind close doors; the growing conviction that explicit rationing is more just than hidden rationing; and, in Britain, the purchaser-provider split. When health authorities concentrated on providing services there was much less scope for drawing back, thinking about which services should take priority, and thinking strategically. The tendency was to fund what had always been funded and make only marginal changes. Now purchasers might begin to rethink how they can get the greatest improvement in health for the resources they invest.

If this process is seen as establishing priorities or gathering information to press for more resources then it is psychologically less painful than if it is seen as rationing services—that is, denying some services to some people. Some members of the health authority were surprised and shocked to discover that they might have to take part in a rationing exercise, but most thought that this is exactly what health authorities were going to have to do. Increasingly, the responsibility for rationing will shift from doctors to the health authority, which is unlikely to be able to avoid that responsibility by simply extracting more resources from the government no matter who is in power.

The excercise

The simulation exercise began by asking the authority to think about setting priorities in its responses to coronary artery disease. This approach has been called "vertical priority setting," as it consists in making choices within one problem area. Much more difficult is choosing among different types of services or "horizontal priority setting." The authority was asked to attempt horizontal priority setting in the afternoon after spending time in the morning looking not only at coronary artery disease but also at services for elderly people with strokes, a case study with broad social overtones. The aim of the exercise was not for the authority to make decisions that would be implemented but for it to think about the criteria that might be used in making such decisions.

Case study 1: coronary artery disease

A health authority is essentially a lay body (although the Southampton and South West Hampshire Health Authority includes three doctors, one of whom is the chairman), which has to consider evidence from doctors and other experts in reaching its decisions on priorities. To help the authority to decide where to set priorities for tackling coronary artery disease it was given a package of background information and presentations from a cardiologist and a cardiac surgeon.

Currently the health authority spends about £770 000 a year on cardiology services and £1·88m on cardiothoracic surgical services. Within that amount about £780 000 is spent on coronary artery bypass grafting, £250 000 on angioplasty, £90 000 on thrombolytic

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Purchasing dilemmas

Expert versus lay opinion
Individual need versus institutional response
Acute versus community or primary care
Intervention versus prevention
Horizontal versus vertical equity—that is, balance across all care groups or specialties versus priorities within care groups or specialties
Quality of life versus saving life
Enhancing structural (or input) conditions versus importance of specific health gains or outcomes

treatment, £80 000 on screening for cholesterol, and £15 000 on services to reduce smoking. This means that expenditure on reducing smoking is less than 1% of that on cardiothoracic services. The ultimate question before the authority is whether it should make any substantial shifts in that pattern of expenditure, and the box shows some of the dilemmas it faces in deciding what to do.

Dr David Patterson, a cardiologist at the Whittington Hospital, in his evidence first made the point that 60% of patients who die of heart attacks do so without reaching hospital. This calls, he thought, for action through prevention or programmes to encourage resuscitation in the community. For patients who are admitted to hospital the evidence is strong that thrombolytic agents will reduce mortality by about a third if given in time. Dr Patterson conceded that there was no convincing evidence that tissue plasminogen activator (a course of which costs about £600) was better than streptokinase (costing about £60), but he suggested that it was indeed better—he would want the more expensive drug himself if he had a heart attack. He pointed out that angioplasty has not yet been tested in a randomised controlled trial against surgery or optimum medical treatment, but he thought that with its restenosis rate of about a third it was probably done too much. Finally, he thought that cholesterol reducing drugs would soon be used much more and might be shown to reverse the disease process.

A cardiac surgeon, Mr James Munro from Southampton, showed that the number of coronary artery bypass operations performed in Southampton has increased steadily from zero in 1972 to almost 450 a year in 1990 whereas angioplasties have increased from zero in 1983 to about 300 a year in 1990. Nevertheless, the waiting list has grown, and in 1990 Wessex still performed only about half the number of operations recommended by the World Health Organisation. The number of "redo" operations is also increasing steadily, as is the proportion of patients aged over 65. Mortality in the first month after operation in these patients is about 3·5% compared with 1% in patients aged under 50. Mr Munro thought it quite right that age should not be a bar to treatment, but he regretted sometimes having to operate on people who were moribund, knowing that the proportion who would ultimately do well would be appreciably less than among routine cases. Furthermore, considerably more resources would be consumed in such cases. He doubted that the health authority could provide ethical guidance on who to treat: the decision had to be made on the spot.

Mr Munro thought that attacking smoking was one of the most important priorities, but he doubted that much had been achieved so far with prevention. Developing schemes for resuscitating people in the community was, he thought, important. The decision whether a patient required angioplasty or surgery depended on angiographic findings and was a matter for the cardiologist and cardiac surgeon to decide.

Challenged by members of the authority on whether resources should be shifted from treatment to prevention, Dr Patterson said that more resources were needed for both. Mr Munro also thought that more funding was needed overall, and developments are planned for the expansion of cardiac services in Southampton. Mr Munro said that the services were currently "only scratching the surface."

Most members of the authority thought that there was a case for shifting resources to prevention, and they were keen to improve links with general practitioners and family health services authorities. At least one member wondered whether angioplasty should be cut back when evidence of its value was so poor. Generally, the authority was taken aback by the paucity of firm evidence of the value of the various interventions. Members wanted more evidence on outcomes to be able to know the "return on investment." They also wanted information on need, and there was much discussion on whether waiting lists were a good measure of need. It was pointed out—as has been the case in Southampton—that large changes in waiting lists could be made by single doctors, that waiting lists do not tell much about effectiveness, and that units might have long waiting lists because they were inefficient.

A central point of the discussion was how much the health authority could interfere in the actions of individual doctors—perhaps, for instance, by writing into provider contracts that patients in whom the outcome was expected to be very poor should not be treated. One of the doctors in the authority thought that this would be wrong and impossible, but others said that the authority was already producing guidelines that dictated doctors' actions in other areas—and it could go further.

Case study 2: stroke services for elderly people

At present most elderly people who have strokes in the district are either looked after at home or admitted to one of the acute medical units in the city. The question before the authority was whether resources should be shifted from the acute unit to community hospitals that would provide treatment "in between" home and the acute hospital. The issue was discussed before the authority by Dr Colin Godber, consultant psychogeriatrician; Professor Roger Briggs, professor of geriatrics; Dr Bob Walton, a local general practitioner; Mr Alan Backhouse, director of social services; and Mr Dave Walden, a local director of Age Concern. Generally, the discussants made it easy for the authority by agreeing that resources should be shifted to the community (to the tune of about £300 000), general practitioners and carers should be supported more, local community hospitals should be encouraged, and multidisciplinary teams should be used to make decisions on long term care. There were, however, concerns that a heavy burden might fall on carers and that perhaps some relatives would think that everything possible might not have been done if a patient died in a community hospital.

The authority supported the idea that patients should be able to stay in their own homes if at all possible, that hospital care should be available locally, and that close attention should be paid to the wants and problems of carers. But members of the authority also wanted more information on what patients did want, were worried that the changes might increase costs and that local hospitals might not be up to the job, and wondered about a pilot scheme. They also pointed out that such changes could not be made by the health authority alone but only with people from the community and voluntary organisations, general practitioners and family health services authorities, and social services departments.

This problem of vertical reallocation of resources

TABLE I—*Choosing among 15 health gain targets**

Target No	Description of target	Volume (this district)	Target improvement	Intervention
1	Improve dental health of children	Around 55% of 5 year olds have some decay	50% Reduction in score for decayed, missing, and filled teeth	Water fluoridation and dental education
2	Improve service for neonates by drug treatment for immature lungs (surfactant treatment)	19 Neonatal deaths/year total (3·4 per 1000 live births)	20% Reduction in neonatal mortality	Screening and provision of surfactant drug treatment
3	Improve provision of family planning services to teenage mothers	750 Teenage pregnancies/year	20% Reduction in unwanted pregnancies	Easier access to clinics; education
4	Reduce incidence of suicide	250 Suicides/year	10% Reduction in suicides	Crisis service and helpline
5	Reduce mortality from breast and cervical cancers	100 Deaths from breast cancer; 14 deaths from cervical cancer/year	10% Reduction in mortality	Screening and early treatment
6	Improve palliative care at Countess Mountbatten hospice and community unit	336 Episodes/year	Improved quality of care	Audit of care and implementation of change
7	Improve rehabilitation for circulatory diseases, especially stroke	3500 Total admissions/year with circulatory diseases	5% Reduction in handicap and improved quality of life	Increased district nursing and support staff (speech therapists, physiotherapists, occupational therapists) in community
8	Reduce waiting lists for hip replacements and cataract operations (for elderly patients)	70 Hip replacements and 570 cataract operations for which patients wait >3 months	Reduce waiting times to <3 months	Purchase additional services
9	Reduce mortality from coronary heart disease	1200 Deaths/year in total	5% Reduction in mortality	New drugs and more bypass operations
10	Improve community mental health services for people with schizophrenia	850-3866 Patients (prevalence)	Improved quality of life	Improved care (crisis service) and liaison between medical and social care
11	Reduce mortality and morbidity from home accidents and road traffic accidents in childhood (0-14 years)	400 Total admissions/year	10% Reduction in mortality and morbidity	Education and increased liaison with local authorities and police; provision of safety appliances
12	Reduce use of tobacco and prevalence of smoking	80 000 Smokers in total	5% Reduction in smoking	Education
13	Reduce incidence of HIV or AIDS	22 Notified AIDS cases	25% Reduction in HIV infection	Needle exchange schemes; provision of condoms
14	Provide bereavement counselling	10-15 People/year	Improved quality of life	Increased access to counselling
15	Reduce waiting lists for acute hernia and varicose vein operations (adults)	14 Hernia and 292 varicose vein operations for which patients wait >1 year	Reduce waiting time to ≤1 year	Purchase additional services

*Assumptions: interventions succeed in achieving the target if funded as planned; targets are tackled by the interventions specified and no others; and targets are amenable to quantification.

thus seemed easier than for coronary artery disease because there was something close to consensus on what should be done, but it might mean the closure of about 15 beds in acute units, and this would not be popular with physicians in the acute unit, who were not included in the case study. And Professor Briggs pointed out that the whole picture would be changed if an effective hospital based treatment appeared for stroke as it has for myocardial infarction; another element in the equation is that the number of strokes in elderly people will increase by a quarter between 1980 and 2000 because the number of elderly people is increasing.

Case 3: horizontal resource allocation

The task of choosing among completely different services is much more difficult. Before the meeting members of the authority and various others, including some general practitioners, had been asked to rank in order various services (table I). Altogether, just over 40 members responded. They were deliberately not given the data on cost in table II, but there are plans for a parallel exercise asking respondents to rank services when given data on costs. Table II shows the final rank, the range of ranks, and a measure of average rank; table III shows the range of agreement among the respondents; and table IV shows the overall rank of the services grouped into particular categories. Generally, higher ranking was given to preventive services and lower ranking to mental health services.

This survey was conducted in an attempt to emphasise to the members of the health authority the painful choices that they will have to make, otherwise discussion of priority setting or rationing may become annoyingly vague. But the aim of the meeting was not to rank these services but to look at how such decisions might be made and which criteria are thought important.

One group who are well used to making tough choices about distributing limited resources are economists. Nick Wells, a health economist working for Glaxo, described the economist's approach to the problem, which, essentially, is through cost effective-

TABLE II—*Ranking of health gain targets among 43 respondents*

Target No	Health target	Rank	Minimum rank	Maximum rank	Average rank	Estimated costs (£000)
1	Child dental health	11	1	15	9·0	50
2	Surfactant treatment	7	1	15	7·5	100
3	Family planning	8	1	15	7·8	65
4	Suicide	13=	4	15	10·2	60
5	Breast and cervical cancers	3	1	14	5·4	750
6	Palliative care	12	1	14	9·7	10
7	Rehabilitation for circulatory diseases, including stroke	6	1	13	7·0	200
8	Hip and cataract operations	5	1	14	6·9	85
9	Coronary heart disease	1	1	12	4·0	250
10	Schizophrenia services	9	1	14	8·5	100
11	Childhood accidents	2	1	13	5·2	30
12	Smoking	4	1	15	6·2	50
13	HIV/AIDS	10	1	15	8·6	20
14	Bereavement counselling	15	6	15	13·4	15
15	Hernia and varicose vein operations	13=	1	15	10·2	75

TABLE III—*Agreement in ranking health gain targets*

Rank	Final rank	Health target	Agreement
High	1	Coronary heart disease	Large
	2	Childhood accidents	
	3	Breast and cervical cancers	
	4	Smoking	
Medium	5	Hip and cataract operations	Very variable
	6	Rehabilitation for disease, including circulatory/stroke	
	7	Surfactant treatment	
	8	Family planning	
	9	Schizophrenia services	
	10	HIV/AIDS	
Low	11	Child dental health	Large agreement
	12	Palliative care	
	13=	Suicide	
	13=	Hernia and varicose vein operations	
	15	Bereavement counselling	

TABLE IV—*Ranking of health services according to category*

Category of services	Health target	Final rank	Overall rank
Health promotion	Family planning	8	22
	Smoking	4	
	HIV/AIDS	10	
Adult acute	Breast and cervical cancers	3	17
	Coronary heart disease and varicose vein operations	1	
	Hernia	13=	
Mental health	Suicide	13=	37
	Schizophrenia services	9	
	Bereavement counselling	15	
Elderly	Palliative care	12	23
	Rehabilitation for circulatory diseases and stroke	6	
	Hip and cataract operations	5	
Paediatric	Dental health	11	20
	Surfactant treatment	7	
	Accidents	2	

ness, economists believing that resources should be allocated where they will produce maximum benefit. To allocate resources to services in which less benefit would result is unjust not only to those denied a service that would have produced a greater return but also to the whole community because maximum benefit is not being gained from the resources. But allocating resources in this way might mean that they would be denied to patients with, say, motor neurone disease, for whom medicine has little to offer. This might seem to deny the right of such patients to treatment. Another problem with the cost effectiveness approach is that good data on the size of the problem, costs, and outcomes are rarely available—an argument supported by Dr Jennifer Smith, a public health doctor from Southampton, who spoke on the epidemiological evidence needed to make decisions on priorities.

Any attempt at rationing raises deep ethical issues, and Dr Ruth Chadwick, a moral philosopher from University College, Cardiff, spoke about how philosophers think about rationing. Justice is the relevant philosophical concept, and, although efficiency is important in allocating resources, it is not enough, she argued. We start from the idea that everyone should have the opportunity to be treated equally but decisions soon have to be made on who will get more. One approach might be to make such decisions according to criteria such as sex or age: in our society it is unacceptable to allocate resources by sex but allocating them by age is still debated. Another criterion might be desert, and this notion arises practically with the thought that some treatments might be denied to smokers because they have brought their illness on themselves. (Dr Chadwick also commented that the low ranking of services for patients infected with HIV might have something to do with operation of the desert theory.) Another criterion might be need, with more resources for more needy patients, but the question immediately arises of who will define need and how they will do it. Dr Chadwick noted that the possibility had been discussed earlier that cardiothoracic services might be denied to those most in need—namely, moribund patients. A final criterion is utility, bringing us back to the economic approach.

The members of the health authority were grateful for the guidance of economists and philosophers but were in no doubt that their tough decisions on rationing could not be left to neat formulas. Much discussion concentrated on the need to involve the public making decisions on rationing. At present, it was agreed, the idea of people being denied health services is very foreign to most members of the public, and any progression down that route has to be understood and ultimately approved by them. Yet the health authority has limited contact with the public, and questions were raised about its accountability.

At the same time as finding better ways to reach the public the authority also needs to develop its access to the best evidence on effectiveness and costs; figure 2 summarises the position of the authority. Currently the vertical axis—that is, receiving information from central authorities and local providers—works well, but the horizontal axis—that is, receiving information from the public and high quality evidence on costs and effectiveness—works less well. It is here that the health authority must place greater emphasis.

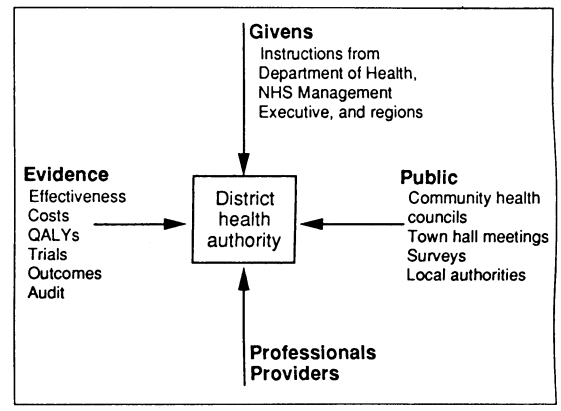

FIG 2—*Obtaining information for setting priorities*

Conclusion

Setting priorities is hard when it is recognised that giving more to one service or group is likely to mean taking away from another, but the health authority agreed that it could not shy away from the responsibility. To make the right decisions it needs better links with the public and better access to information; it may also have to strengthen its connections with national politicians so that they are forced to understand the sometimes brutal realities of running a health service with limited resources. The authority must also strengthen its links with other groups—particularly general practitioners and family health services authorities—and a final crucial subject is how far the authority should go in guiding doctors and other health professionals in their decision making.

Just as it has the responsibility for deciding on the allocation of limited resources and, therefore, for limiting or even denying access to some forms of treatment, the district health authority equally has a responsibility to inform both the public and politicians of the implications of the decisions it has taken, so that government may judge whether to increase the total resource to the NHS.

A fuller report on the process of priority setting based on the Southampton meeting will be published later in the year by the King's Fund College.

1 Thwaites B. *The NHS: the end of the rainbow*. Southampton: Institute for Health Policy Studies, 1987.