Purchasing Dilemmas

SPECIAL REPORT

Chris Heginbotham and Chris Ham
with
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A SPECIAL REPORT FROM
THE KINGS FUND COLLEGE AND
SOUTHAMPTON AND SOUTH WEST
HAMPSHIRE HEALTH AUTHORITY

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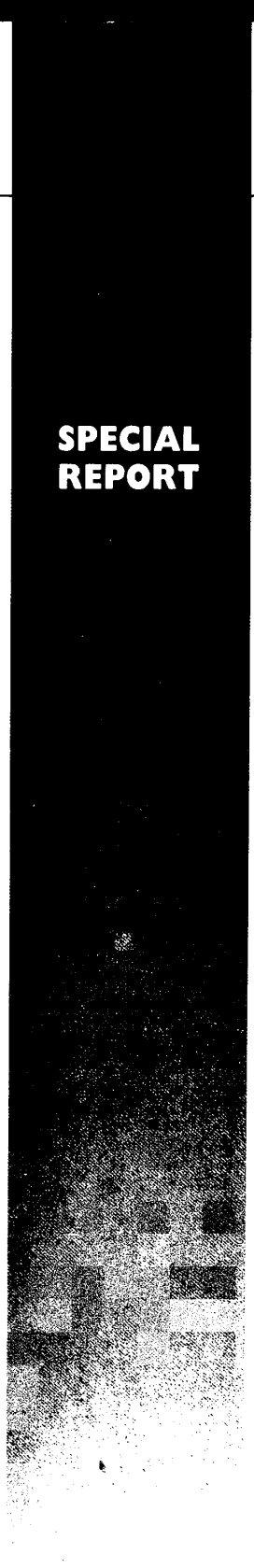

Securing better health
SOUTHAMPTON & SOUTH WEST HAMPSHIRE HEALTH AUTHORITY

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EXECUTIVE SUMMARY

1. Purchasing Decisions

Health authorities have a difficult task in deciding on the appropriate balance of resource investment for healthgain. Many authorities have little room for manouevre and must find new and innovative ways of considering health care priority setting and decisions on resource allocation.

2. Rationing

All health systems ration health care. The recent NHS reforms have placed the onus on health authorities to develop explicit rationing procedures. A variety of methods are available, some of which may be more valuable than others. The simulation described in this report suggests some components of an approach which authorities may wish to consider.

3. Purchasing Dilemmas

The seminar described here was designed to test seven 'purchasing dilemmas'. These ranged from, the extent to which lay or professional opinion is relevant to a purchasing decision, to the importance of saving life compared to improving quality of life.

4. Simulation Process

The simulation involved Southampton and South West Hampshire Health Authority exploring alternative approaches to rationing through a specially designed simulation exercise. The simulation involved members of the authority examining the dilemmas facing purchasers in the new NHS. The seminar was organised over 24 hours and involved the authority in coming to simulated decisions on a series of case studies following the presentation of expert evidence.

5. Three Case Studies

The three case studies used were:

- options for tackling coronary heart disease;
- treatment of stroke in elderly patients; and
- the balance of expenditure between different services and care groups.

6. Objectives

The objectives of the seminar were:

- to establish a series of criteria to guide decision-making on resource allocation between and within care groups;

- to provide a number of insights into the process of resource allocation; and
- to clarify issues requiring further discussion and consideration.

Each of the three case studies offered a number of points for further consideration.

7. Lessons Learned

The most important lessons which emerged were:

- priority setting and resource allocation is hard partly because evidence and information is patchy or unavailable and partly because the task is inherently complex;
- authorities must be able to explain the decisions they take to patients, service users and clinicians and to obtain the views of patients about 'need' as one part of understanding health care requirements;
- rationing occurs now and will continue in some form
- priority setting methodologies must be carefully considered to ensure that they are rigorous, compare like with like and provide useful, albeit small steps towards resource allocation decisions.

8. Issues requiring further discussion

The issues requiring further discussion can be grouped into three main areas:

- the appropriate role of a purchaser authority, in particular the accountability of that authority;
- the need to develop integrated approaches to health care purchasing between health authorities and other agencies together with the integration of academic disciplines and the development of collaborative rationing procedures;
- the importance of evaluation, of existing needs and treatments, and of the effect of resource allocation decisions on outcomes and health status.

9. Action

Ten action items emerged. These were:

1) *Consultation*

Authorities must consult widely with local people when resource allocation and health care investment decisions have social, political and ethical implications for the local community.

2) *Availability of Expertise*

Setting priorities in health care resource allocation requires careful assessment of health and illness needs in the community and evidence of effectiveness of healthcare interventions.

3) *Accountability*

Accountability requires health authorities to balance the four pressures of: imposed targets from Government and RHAs; new evidence on outcomes and effectiveness; community need and demand and provider expectations.

4) *Evaluation*

Evaluation of service effectiveness, local outcomes and achievements, especially of innovation, will be essential.

5) *Understanding Complexity*

Purchasing authorities must spend more time discussing and considering resource allocation procedures. Authorities should develop simple and straightforward approaches and build a comprehensive procedure by linking together a number of carefully developed components.

6) *Audit*

Audit and utilisation information must be considered both as part of, and in addition to, the contracting process. Purchasing authorities must talk directly to clinicians as well as provider managements.

7) *Review of Health Promotion*

Healthcare interventions must be balanced by prevention and health promotion. However prevention has not yet been shown to work in many areas and a large pool of existing patients require treatment. Health promotion activity must be carefully targetted if long run intervention costs are to be reduced.

8) *Purchaser Strategy*

Purchasers must now develop their own strategy incorporating a renewed vision of health and health care, and must take an assertive approach to provider demands whilst welcoming provider views on appropriate healthcare.

9) *Links between Authorities*

Effective purchasing will require district health authorities and family health services authorities to develop close working alliances, to pool expertise and to develop the right balance of primary, secondary and community health services. GPs, community groups and local authorities must be included in these discussions.

10) *Campaigning for more resources*

Health authorities must spend their delegated resources wisely and carefully. Authorities, however, have a great deal of information about local needs and will generate even more from priority setting exercises. Authorities should be prepared to place this information before central government as an indicator, where necessary, of the need for increased resources.

1. Introduction

The NHS has never been able to meet the needs of all patients on demand. As the founders of the Service quickly discovered after its inception, the introduction of a health care system providing services free at the point of delivery unleashed more demands than could be met within available resources. This continues to be the case even though the amount of money allocated to the NHS has increased significantly in the period since 1948.

There are many reasons for the continuing imbalance between demands and resources (1). To begin with, the ageing population has given rise to additional demands associated with the health needs of people in the later stages of life. This has been compounded by developments in medicine which have enabled treatment to be provided for an increasing range of conditions. Examples include not only hip replacements and cataract surgery, which benefit particularly older people but also organ transplants, kidney dialysis, and treatment for many forms of cancers. A further factor is that the expectations of patients and the public have increased and this has added to the pressure on politicians and health authorities to improve the quantity and quality of care available. As table 1 illustrates, during the lifetime of the NHS, expenditure has increased from £437m to £26,921m in cash terms. After allowing for inflation in the economy as a whole, this represents a fourfold increase in real terms. Over the same period, health care expenditure as a proportion of gross national product has risen from under 4 per cent to around 6 per cent, and public health expenditure as a proportion of total public expenditure has risen from under 12 per cent to around 15 per cent.

Table 1

	NHS Expenditure (£ million)	NHS as percentage of GNP	NHS as * percentage of public expenditure
1949	437	3.92	11.8
1990	26,921	5.79	14.7

* Figures here relate to 1950 and 1988

Source: Office of Health Economics (11)

The increase in resources made available to the NHS has undoubtedly resulted in many improvements in service provision. Yet a number of problems persist.

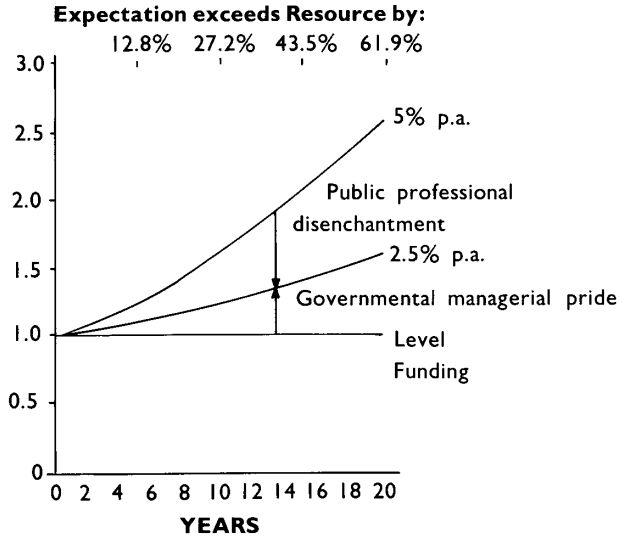
Waiting lists are an obvious example, and the poor standard of care provided to the so-called 'priority' groups is another (footnote). Also, innovations in medical technology are available unevenly in different parts of the country. Indeed, as comparative analyses of health services have shown, a number of services are provided at a lower level in the U.K. than elsewhere (2).

Rationing

In their different ways, these examples illustrate how the NHS has had to cope with the challenge of infinite demand and finite resources. Put slightly differently, they are all examples of rationing. While rationing has always been part of the NHS (3) two aspects of the current situation gives it new importance.

First, as Thwaites (4) has noted, there is a growing gap between what it is possible to do as a result of medical advances and what it is possible to fund with available resources. This means that the choices facing policy makers will become even more critical than in the past. Thwaites illustrates trends in resources and expectations in Figure 1, and argues that the inevitable consequence is that limits will have to be set on what services are provided within the NHS.

Figure 1



The Increasing Percentage Difference between Expectation and Resource when they grow at different exponential rates.

Footnote

In this expression, the 'priority' groups refer to people with learning disabilities, mental illnesses, physical disabilities and elderly people.

Second, the NHS reforms will make rationing more visible. Doctors will continue to be responsible for determining which patients should receive care, but the allocation of resources between competing demands by health authorities will be more explicit than in the past. This is because as purchasers of care, health authorities will have to set out in contracts those services they wish providers to deliver. The corollary is that contracts will reveal which services are not purchased, either because resources are not available or because purchasers deem these services to be of low priority.

Decisions on Priorities

The question this raises is how purchasers will reach decisions on priorities. In an ideal world, it would be possible to assemble information about the cost and effectiveness of different services and rank them in order of priority. In practice, information on costs and effectiveness is seriously incomplete (5) . In any case, priority setting still requires those charged with making decisions to exercise their judgement on the best use of resources.

In the past, priority setting in the NHS has been inherently a political process (6). The policies and priorities established by health Ministers have been communicated to health authorities who have interpreted national policies to suit local circumstances. As part of this process, health authorities have been influenced strongly by professional views, particularly those emanating from the medical profession.

Within health authorities, policy making has been formally the responsibility of the appointed chairmen and members. In reality, managers have come to play a more prominent part, particularly since the implementation of general management following the Griffiths Report of 1983. Other organisations and interests have been involved on specific issues, but the general pattern of policy-making has been one of national policies and professional preferences being mediated by health authorities in which managers have occupied an increasingly important role. Information and evidence about the cost effectiveness of different services have contributed to this process but principally in a way which serves the interest of the different groups involved.

The NHS reforms challenge this approach to policy-making in a number of ways. First, by separating purchaser and provider roles, the reforms open up the possibility of health authorities taking a view on priorities that is more independent of professional interests. These interests will continue to play a major part in provider organisations (whether directly managed units or NHS Trusts), but they will no longer be as closely integrated in health authority

policy-making as in the past. As a number of commentators have noted, in this respect, the reforms challenge the tradition of 'provider capture' within the NHS, and offer the scope for priorities to be shaped on a different basis (7).

Second, the reforms also offer an opportunity for purchasing decisions to reflect more accurately the views of local people. As Ministers and senior officials have emphasised, health authorities are intended to be the 'champions of the people' in their purchasing role. By this is meant that authorities should base their decisions on an assessment of the population's need for health care and the pattern of services best able to meet these needs wherever possible involving of local people in that assessment. This requires health authorities to examine the distribution of illness within their communities as well as to seek the views of the public on priorities for the use of resources. The result may well be that resources are used in a different way in future.

A third implication of the reforms is that purchasers should examine systematically the cost effectiveness of the services available. This has been identified as a central feature of the purchasing function in the guidance published by the Department of Health. As the guidance has emphasised, purchasers need to ensure that they obtain good value for money by concentrating their expenditure on those services that offer the greatest benefit at least cost. In taking on this role, purchasers will be expected to draw on available medical and other evidence to ensure that their resources are used in an optimal fashion. To help purchasers in this task, the Department of Health has commissioned a series of studies on the effectiveness of different services and has made the results available to health authorities.

To make these points is not to argue that priority setting and policy-making will cease to be a political process. Rather, it is to suggest that one of the aims of the reforms is to alter the basis on which policies are formulated and to change the balance of power between different interests. Judgement and values will continue to be important, as will lobbying and other forms of political activity, but the aspiration is to give more attention to elements which in the past have not been to the fore.

Alternative Allocation Mechanisms

The NHS is not alone in grappling with the problem of rationing. The challenge of allocating scarce resources between competing demands is common to all health care systems and is handled in a variety of ways. At one extreme the U.S. rations through the price mechanism. Those who can afford to pay for treatment

(particularly through insurance coverage) receive comprehensive care, while those who cannot afford to pay rely on those services available through the residual public system. Often, the latter is inadequate. This has given rise to a number of initiatives to use resources in a more rational manner (see below).

Another approach is to ration services on the basis of income. This is how health care was provided before the NHS was introduced with only those people earning below a certain income level being eligible for national insurance cover. A similar arrangement has applied until recently in the Netherlands where people earning below a given income were included in the social insurance scheme and those above that income took out private insurance.

A third approach is to limit the provision of health care to a defined range of core services. These services may be available through a social insurance or a tax funded system, leaving other services to be provided privately. Policies to ration health care in this way have emerged in the Netherlands and New Zealand, and they have also been debated in the U.K. (e.g. the North East Thames Region's initiative).

In this context, the Oregon experiment is of particular interest. As Honigsbaum (8) has noted, this involves an attempt to list in order of priority those services to be provided under the Medicaid programme for people on low incomes. Priorities have been established by a commission of eleven members appointed by the State Government. The commission approached its work by reviewing the evidence on the cost effectiveness over 700 treatments. Data drawn from the scientific literature were used in conjunction with information gained from the public through a telephone survey, public hearings and community meetings.

Members of the commission then applied a 'reasonableness' test (based in part on expert judgement) to the rankings which emerged and adjusted those priorities which appeared anomalous. With the resources available for the Medicaid programme, it was possible to provide 587 of the 700 or more services examined. High on the list were treatments such as those for pneumonia and appendicitis. Treatments which came below the cut-off point and which were therefore excluded from the programme included intensive care for extremely low birth babies and services for cancer patients with low life expectancy. At the time of writing, the State of Oregon is awaiting the approval of the Federal Government to implement these priorities.

The Oregon experiment has attracted widespread interest within the U.K. This interest has centred both on the use of evidence on cost effectiveness which is

similar in some respects to The QALY methodology developed by health economists at York University (9) and in the attempt to open up priority setting to public debate. As in the U.S., opinion is divided on the merit of the approach and on whether a similar initiative to identify priorities should be undertaken by the Government and health authorities. Evidence from public attitude surveys certainly suggest that there is little support for the exclusion of treatments from the NHS among the public as a whole (10).

Simulation Exercise

Against this background, the King's Fund College and the Southampton and South West Hampshire Health Authority decided to explore an alternative approach to rationing through a specially designed simulation exercise. The simulation involved the members of the Authority examining the dilemmas facing purchasers in the new NHS. Organised over twenty four hours, the simulation centred on three case studies. These involved options for tackling coronary heart disease, the treatment of stroke in elderly patients, and the balance of spending between different services and care groups. The aim of the simulation was to explore at an early stage in the development of the purchasing role the challenges facing health authorities in setting priorities. The intended outcome was not a set of actual decisions on the cases discussed. Rather, the objective was to establish some criteria to guide decision making, to test out the information needs of the Health Authority, and to identify lessons that could be incorporated as the Authority moved from the simulation to taking decisions 'for real'. In the next section, the organisation of the exercise is described in more detail and the way in which discussions evolved.

Notes to Chapter 1

1. Ruddle, S. *Rationing Resources in the NHS* Institute for Health Policy Studies, Southampton, 1991
2. See for example, Aaron, H.J. and Schwarz, W.B. *The Painful Prescription,* The Brooking Institution, Washington D.C., 1984
3. Cooper, M.H. *Rationing Health Care*, Croom Helm, London, 1975
4. Thwaites, B. *The NHS: The End of the Rainbow*, Institute of Health Policy Studies, Southampton, 1987
5. Smith, R. *"Where is the wisdom.....?"*, *BMJ*, 1991, 303, 798-9
6. See for example; Ham, C.J. *Policy Making in the NHS*, Macmillan, London, 1981; Hunter, D.J. *Coping with Uncertainty*, Research Studies Press, Chichester, 1980; Klein, R.E. *The Politics of the NHS*, Longman, London, 1983

7. Ham, C.J. "If it isn't hurting, it isn't working", *Marxism Today* 14 – 17, 1991
8. Honigsbaum, F. *Who shall live? Who shall die?*, Kings Fund College, London, 1991
9. Maynard, A. "Logic in Medicine: on economic perspective", *BMJ*, 1987, 295, 1537 – 41
10. Davies, P. *"Thumbs down for Organ rations"*, *Health Service Journal* 14 November 1991, 10 — 11.
11. Office of Health Economics *Compendium of Health Statistics*, 7th edition, London, 1987

2: Purchasing Dilemmas Simulation

Introduction

The seminar was intended to address a number of the questions raised in Chapter 1 through three inter-related case studies relevant to Southampton and South West Hampshire Health Authority. It was hoped that by choosing three resource allocation issues of wide relevance, the results would be of interest to other purchasers in the UK. The examples were chosen to enable a number of dilemmas to be considered as well as offering an opportunity for the DHA, together with other invited participants to tackle specific purchasing decisions.

Seven purchasing dilemmas were identified (Box 1).

BOX 1

PURCHASING DILEMMAS

I) Expert versus lay opinion;
II) Individual need versus an institutional response;
III) Acute versus community or primary care;
IV) Intervention versus prevention;
V) Horizontal versus vertical equity, i.e. the question of balance across all care groups/specialties versus the priorities within the care groups/specialties;
VI) Quality of life versus saving life;
VII) Enhancing structural (or input) conditions versus the importance of specific health gains or outcomes.

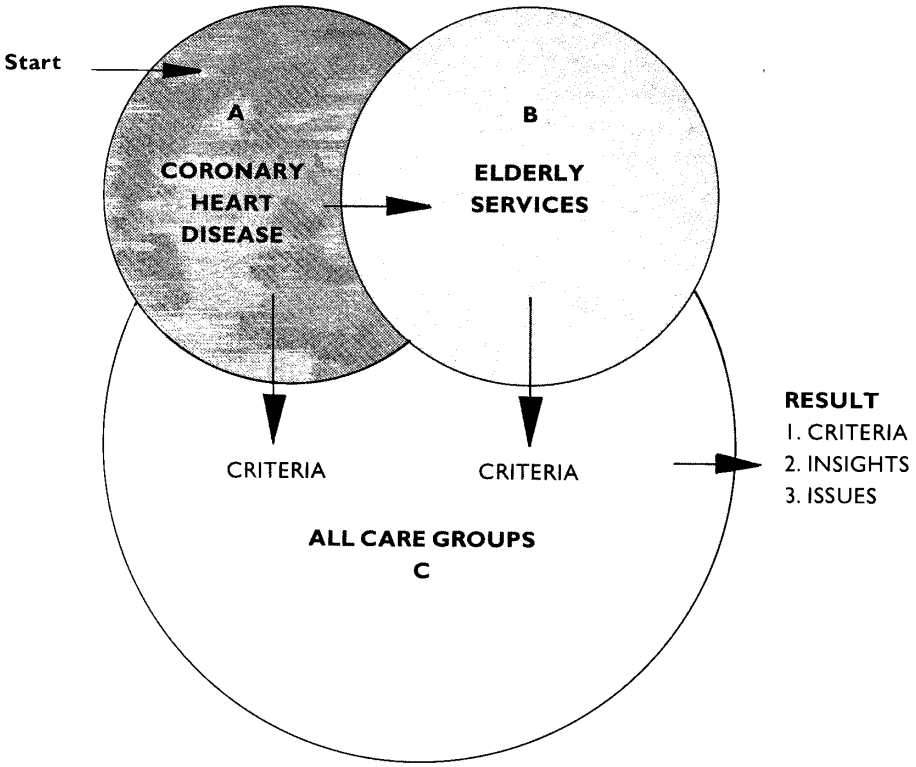
Cases were identified which illustrated primarily two or three of the dilemmas and offered insights into others. By linking the three cases together it was intended that by the end of the third case it would have been possible to:

1. define **criteria** for making allocation decisions between and within care groups;

2. provide a number of **insights** into the process of resource allocation;

3. clarify **issues** requiring further discussion and consideration.

FIGURE 2 THE PROCESS OF THE PRIORITY SETTING EXERCISE



For the simulation it was necessary to keep the work relevant and of manageable proportions. Consequently three case examples were chosen (Box 2).

BOX 2

Case Studies

A Coronary heart disease (CHD) including choices between cholesterol screening, thrombolytic therapies and surgery;

B Services to elderly people especially the balance between acute in-patient and local care, including the relative importance of assessment, community support, respite care and the role of GPs.

C The balance of funding across all care groups and specialties.

Seminar Design

A brief introductory session was held in the early evening of the first day and included presentations outlining the financial position of the authority, current contracting issues, public health and national priorities, and the national health scene in relation to health authorities as purchasers.

On the second day the three case studies were considered for approximately an hour and a half each followed by discussion and a summary. At the end of the seminar the general lessons emerging were identified and implications for other authorities discussed. The case studies were chosen to illustrate the principal issues which face a purchasing authority. Each was dealt with in a different way in order to give variety to the seminar and to offer a range of ways of tackling similar problems. The discussion was facilitated by Kings Fund faculty. Although the exercise was quite properly referred to as a simulation, Authority Members took part in their normal role; but the process was designed to inform rather than generate actual decisions of the Authority. (Annex I provides the seminar outline in tabular form with a list of participants).

Case Study A: Coronary Heart Disease

Case Study A was designed to consider the balance of care between preventive and curative strategies in coronary heart disease. An expert panel — a cardiologist and cardiac surgeon — debated key concerns in the provision of coronary heart disease management and answered questions from the Authority. Conclusions were then drawn. A number of criteria were suggested and a range of questions were identified for further debate.

Case Study B: Services to Elderly People — Case of Severe Stroke

Case Study B was based on an example of severe stroke in an elderly man. This was debated by a simulated contracts planning group made up of five representatives — a consultant psychogeriatrician, a professor of geriatric medicine, a general practitioner, a member of Age Concern (representing carers) and a representative of the social services department. The group debated as a "fish-bowl" (see footnote) for about half an hour on the merits and disadvantages of the policy proposals in the case study, and were observed by the Authority during the debate. Following questions and discussion, a range of criteria emerged for possible changes to existing resource allocation.

Case Study C: All Care Groups

The most difficult of all the case studies was that concerned with the balance of resources across all care groups and specialties. Decision making on the balance of resources within a care group, howsoever defined, is difficult enough. Deciding on the balance between care groups is exceedingly problematic. Within care

groups this is usually known as 'vertical equity' — i.e. the extent to which resources are shared between people with similar disorders but differing need, diagnosis or prognosis. 'Horizontal equity' is the notion of achieving a balance of resources across differing care groups for patients with widely differing conditions and required treatments. For example, what criteria can be used for making a judgement between investment in long term psychiatry compared to renal dialysis? Or between provision for rehabilitation of elderly people with stroke compared to the provision of paediatric care? Clearly there are a number of givens — both national and regional guidelines; there is known historical and current demand; and there are constraints in terms of technology and existing resources (e.g. buildings, beds, trained staff). Even allowing for many of these 'givens', significant shifts of investment could be made, either between acute and community services, or between prevention and cure, between long term and short term services, or between hospital and home.

Case Study C was tackled by developing a fifteen point list of healthgain targets relevant to Southampton and South West Hampshire. This list was then ranked for importance by a number of interested people including clinicians and managers. The purpose behind this was to look at both the methodology and the results to see whether the way in which the respondents tackled the task provided ideas about the ways in which resource allocation might be undertaken.

In order to investigate the issues more fully, four experts — an epidemologist, a health economist, a moral philosopher and a medical journalist — were asked to make short presentations on resource allocation and to comment on the health gain target list.

Lessons Learned

Following the three case studies the Authority broke into a number of working groups to consider:

i. the lessons learned during the seminar;

ii. issues requiring further discussion and consideration;

iii. action required of the authority.

A number of issues emerged from this discussion and these have been incorporated with the outcome of each case study as a series of conclusions and action items in Chapter 6.

Notes to Chapter 2

1. In a 'fishbowl' discussion a group or panel discuss a subject whilst observed and listened to by other participants but without intervention or question from those participants.

3. Coronary Heart Disease: Case Study A

Coronary heart disease (CHD) is a major cause of mortality and morbidity in the population. Management of the complications of the disease (eg; angina, myocardial infarction) and sudden death is resource-intensive. The long-term solution to improving the health of the population involves prevention of CHD; in the shorter term a number of interventions are available, both to improve quality of life of those with established disease and to reduce mortality from its complications.

This case was devised in order to consider the range of treatments available for coronary heart disease. A variety of information was provided to support decisions on resource allocation to different treatment options. Whilst there will always be some absolute clinical indications for most of these treatments, decisions have to be made about the balance of investment between them. Decision making is complicated by the variety of possible interventions and the outcomes that each treatment can be expected to provide. For example, coronary artery bypass grafts (CABG), undertaken for severe angina, may make a substantial improvement to quality of life, in addition to reducing mortality.

The case highlights the balance of primary and/or secondary prevention versus intervention for established disease. (Box 3). Advice to stop smoking is cheap and, if accepted, effective; cholesterol screening is more expensive, but offers the potential for targetted preventive action; whereas treatment with thrombolytic agents may reduce the mortality from one acute and life-threatening complication (myocardial infarction).

BOX 3

KEY FEATURES:	BALANCE OF FUNDING OF DIFFERENT POSSIBLE INTERVENTIONS TO PREVENT AND TREAT CORONARY HEART DISEASE.
PROCESS:	EXPERT DEBATE OF TECHNICAL INFORMATION, ASKED TO ADDRESS SPECIFIC QUESTIONS.
DILEMMAS TESTED:	IV (INTERVENTION v PREVENTION); VI (QUALITY OF LIFE v SAVING LIFE) AND THE IMPORTANCE OF 'VERTICAL' EQUITY.

The case emphasises the importance of 'vertical' equity. This refers to the balance of resources between differing conditions (need states) and/or treatments, within the same specialty, and thus over the spectrum of demand within that specialty. To a degree the case also provided insights into the balance of acute in-patient care (particularly surgery) compared to primary and community care, as well as the extent to which issues of this type can only be dealt with effectively by expert consideration.

Process

The process of the simulation was for an expert panel (a cardiac surgeon and a cardiologist) to debate the relevant merits of different treatments in the light of contextual information provided and to address questions shown in Box 4. Authority members were provided with a background briefing on the key issues thought likely to feature in the debate, and the expected outputs of the case are shown in Box 5. (See also Annex 2, p67.)

BOX 4

QUESTIONS ADDRESSED

(i) Given limited funds, is it possible to derive an agreed balance between primary/secondary prevention (cholesterol screening, smoking cessation), tertiary prevention/initial treatment (thrombolytic therapy, angiography) and surgical intervention (CABG, angioplasty, pacemaker implant)?

(ii) What information is essential for effective purchasing decisions?

(iii) What ethical concerns are raised by this case? In particular, can purchasers define quality criteria (especially outcome information) to balance saving life, for some patients, with improvements in quality of life for others?

(iv) What issues are raised by this case which might help to inform the discussion in Case Study B (stroke in the elderly).

(v) What pitfalls may trap the 'unwary purchaser'?

BOX 5

OUTPUTS

(i) Criteria on which difficult purchaser decisions might be made;

(ii) a discussion of priorities and the possible redistribution of resources to a range of treatment options;

(iii) a wider understanding of the value of various techniques for assessing investment decisions;

(iv) clarification of a range of issues in resource allocation decision making.

Discussion

Coronary heart disease presents in different ways. The first is that of sudden death, which raises the important role of other authorities, especially the ambulance service (and in particular, the training of paramedics) and public education. A slightly less dramatic presentation is either a heart attack (acute myocardial infarction) or angina. In the case of heart attack as many as 60% of patients die before they reach hospital; and a high proportion of those who survive will be treated with aspirin and thrombolytic drugs. Thrombolytic agents have been available for approximately seven years. They have contributed to a reduction in hospital mortality for patients with heart attack from around 25% to less than 10%. The success of thrombolytic treatments and aspirin in the treatment of arrhythmia, is highly dependent on patients (a) recognising their own symptoms and calling for help and (b) getting to a point of care, either to a hospital, or in more rural settings to the G.P. surgery.

The cost of thrombolytic agents varies from approximately £85 for streptokinase to around £500-£600 for more modern drugs such as tissue plasminogen activator (TPA). The more expensive drugs are generally more effective and hospitals have begun to identify those patients likely to benefit from the more expensive drug. This point is contentious however and provides a good example of the potential clash between public policy and clinical freedom. (See Note 1).

Recent years have seen greatly reduced hospital stays. A typical patient with an uncomplicated heart attack now stays no more than 5 or 6 days compared to 6

weeks some years ago. Only a small proportion of patients with myocardial infarction undergo further investigation or cardiac surgery.

The other main category of patients are those suffering from angina. Conventionally angina is divided into two sub-categories — a condition known as unstable angina (when the angina has just appeared and/or is getting worse and persists at rest); and stable angina (which may continue for many years). The two approaches to angina are those of medical (i.e. drug) treatments or intervention which may be in the form of angioplasty or surgery.

Angioplasty is a relatively new technique which was introduced without proof of efficacy and still requires a properly constructed trial. There is considerable debate within medicine about the best use of angioplasty but only incomplete results exist to demonstrate whether it is better or worse than surgery, or better or worse than continuing medical treatment. Undoubtedly patients obtain relief and around 30% require repetition. It had been thought that angioplasty would be more cost effective than coronary artery by-pass graft but some health economists view angioplasty as relatively expensive.

Drug treatments are relatively cheap and standard. They do not cure the underlying condition nor palliate symptoms entirely, but many patients can be kept in a fairly stable state. If medical treatment fails and the patient's symptoms are unacceptable then there is the choice of angioplasty or cardiac surgery, which in itself will not cure the underlying disease, but only relieve the symptoms. Before either of these can be performed a coronary arteriogram must be undertaken, a now fairly standard investigation with low risk and low mortality.

Angioplasty and CABG are *palliative* in a *progressive disease*. Whether angioplasty or CABG is performed depends on the findings of angiography. One or two discrete severe coronary stenoses can be treated very well by angioplasty with excellent results and much cheaper than surgery. If there are occluded vessels and multiple stenoses, it will probably be better to offer surgery. Both treatments are effective, save life and improve symptoms.

Until recently many cardiologists and cardiac surgeons were keen on prevention but had a traditional scepticism of its benefits. Some persuasive evidence is now available from the United States which has shown that by reducing cholesterol levels for particular high risk patients it is possible to demonstrate that coronary arteries, which had narrowed and blocked, will open up. With this comes an improvement in symptom and outcome. Relevant studies have been small in number but this form of treatment is perhaps one of the most exciting areas for

preventive cardiology. Unfortunately, nothing has yet prevented (or even significantly reduced) coronary artery disease. There is thus a large pool of patients requiring treatment. (Note 2)

One issue identified in the discussion was whether angioplasty should be done on patients whose cholesterol level is still high. Drugs should perhaps be introduced at a much earlier stage and by-pass surgery or angioplasty only undertaken once the patient's cholesterol level is low. A new group of drugs called HMG Co-enzyme A Reductase Inhibitors have been developed. These are a group of drugs which modify the body's enzyme system in the control of cholesterol. Until recently it had not been possible to reduce cholesterol by more than 10-15%. With these drugs it is now possible to reduce cholesterol levels by as much as 50% — a huge change and which may be a powerful weapon in reducing blood lipid levels and thus artery narrowing. If it became possible to do this with selected group of patients, then it may be worthwhile to extend the availability to patients who are not at such high risk. This is yet to be proven. It is possible that it may benefit a wider group of people than those for whom it appears efficacious at present (although the dangers in lowering cholesterol levels must be recognised).

Stopping people smoking is arguably *the* key to prevention. If everybody stopped smoking coronary artery disease would be greatly reduced. Prevention is (self evidently) better than cure but prevention has not yet been shown to work. Interventional techniques must therefore continue both for acute and chronic disease. Training the public in cardio-pulmonary resuscitation would seem to be one area that would be a worthwhile expenditure of money as well as further training for ambulance crews. Speed of response is an important feature.

Issues

A number of resource allocation issues were raised in the discussion.

BOX 6

KEY FEATURES RAISED

- Outcome and effectiveness measures
- Ethical issues — especially the non-availability of proven safe medical and surgical procedures.
- Clinical freedom and decision making
- Prevention, for example, of smoking
- Social class as a predictor of morbidity
- Referral practice
- National/regional targets

Outcome Measures

Better outcome and comparative effectiveness measures are required to help in determining choice of treatment. For example, there is no apparent relationship between the number of CABGs done in different countries and mortality rates. Angioplasty was introduced without proof of efficacy and still requires a properly constructed trial. Although patients obtain short term relief, a large minority require revision. The number of procedures undertaken provides little information about effectiveness.

Ethical Issues

Under-funding of the whole field of cardiovascular disease raises an ethical concern in its own right. There are known and relatively safe medical and surgical procedures which are not being made available to everyone. Because of this physicians' and surgeons' decisions are made more difficult than they would be otherwise. Deciding on when to undertake a revision of angioplasty may not be at all straightforward; but put in the context of financial stringency is made that much more complex.

Prevention raises further ethical concerns. For example, should extensive resources be spent on people who smoke, especially those who refuse to stop smoking at the point of requiring surgery?

Clinical Freedom

Should more money be put into operations such as CABG surgery, where there is an 85% chance of survival at 5 years, or oesophagectomy where there is only 5% chance? On what basis should such a decision be taken? Clinical responsibility must be delegated within a protocol which provides guidance on the expected balance of costs and benefits. It is not a health authority's decision to determine which individual patient shall be treated; that is a clinician's decision. A health authority can make broad decisions on the allocation of resources, firstly to the whole field of cardiology, and secondly within that to the sub-categories of care.

The points which require further debate are (a) the level to which an explicit allocation is made, and (b) the format and detail of any protocols. However, the more specific resource allocation becomes the greater the degree to which, de facto, choice of clinical intervention is taken out of the hands of the clinicians. This has the effect, perhaps, or relieving the ethical burden on the clinician, but bringing it into the realm of resource allocation — the task of health authorities who at present are not well equipped to make these judgements.

Prevention *(Note 3)*

Primary Prevention

Screening is probably not necessary routinely to measure cholesterol level of every member of the population. At present cholesterol level tests vary hugely in their accuracy and it might be argued that the errors outweigh the benefits. Targeting those people in whom it is likely to be raised is more cost effective. Indicators include family history of premature death due to vascular problems, high blood pressure, smoking or existing vascular disease.

Smoking continues at frightening levels, and the majority of the public seem not to realise how dangerous it is. Abolition of tobacco advertising and increases in the cost of cigarettes are two possible health targets, although it is not directly the role of health authorities to tackle these issues.

Secondary Prevention

Training ambulance crews and spouses/partners in resuscitation is likely to save substantial numbers of lives. At present there is insufficient information on the effectiveness of cholesterol reducing drugs.

Tertiary Prevention

Thrombolytic agents are now available and reduce mortality for patients with heart attack. Their cost is high but may be reasonable in relation to their proven efficacy.

Social Class

Social class is an important determinant because of diet (cholesterol levels), smoking, access (information) and co-morbidity. Equity in healthcare would require greatly increased resources to be channeled into the encouragement of healthy lifestyles and the provision of information on available treatments.

Referral Practice

It is essential that referral practice is agreed with G.P.s and the FHSA as well as other health authorities. Too often personal prejudice or lack of information hampers appropriate referral at the right time. Sometimes patients who could have been referred earlier are not seen until moribund — both a waste of resources, the loss of possibly many years of life and disastrous for the patient.

National/Regional Targets

For a number of conditions, of which CHD is no exception, national and regional targets exist — for numbers of CABG's to be undertaken, and waiting times. Investment decisions must take such targets into account and are likely only to be challenged if there is substantial relevant information.

Conclusion

Decisions on treatment for CHD are both multi-factoral and complex. Resource allocation considerations create a fascinating intellectual challenge but one which must not be allowed to obscure the simpler and more direct requirement for straightforward policies. In discussion the case raised the importance of the key features shown in Box 4.

The overriding impression of the discussion was that much more could be done in prevention (even though evidence is still sketchy), but that until epidemiological information is available that prevention has worked, curative techniques must continue. The challenge to the Authority was to increase funding for safe medical and surgical procedures which would prolong life whilst endeavouring to identify resources for improved preventive strategies. It was suggested that, in principle the Authority should:

1. respond to patient demand e.g. as expressed through patient waiting lists;

2. concentrate spending in areas where there is evidence on cost-effectiveness;

3. give priority to prevention e.g. by influencing the RHA and government, by working with the FHSA and GPs; and

4. not seek to specify which patients should be treated or which treatments should be provided at the point of contact with the patient.

Notes to Chapter 3

1 A large new multicentre study (ISIS 3) has recently suggested that streptokinase is as good as TPA, though TPA would have to be given if a second injection was required soon after the first.

2 In Southampton the use of cardiac surgery has changed with changes in staff. The waiting list for cardiac catheterisation had developed due to the appointment of a new cardiologist and the number of angioplasties and coronary artery by-pass grafts has risen steadily. The availability of a consultant able and willing to undertake such activity created a demand and thus a 'need'. The appointment of regional physicians with a cardiac interest has also boosted the number of patients referred for cardiac surgery.

The British Cardiological Society has recently suggested that an appropriate rate for angioplasty would be 400 per million for 1995. Coronary artery by-pass grafts are currently provided at a level of 150 per million in Wessex and

Southampton has recently completed a 4,000th graft. Many patients are over 65, but mortality in Southampton is only just over half that of the rest of the country. This suggests two things — (i) a higher quality of care; and (ii) that Southampton residents are relatively better served than residents for other districts. They have easy access to treatment, leading to higher treatment levels and the possibility that some patients, for example with thrombolytus, will be referred directly to surgeons. This raises an interesting problem of cross-boundary flows and extra contractual referrals from parts of the region which do not put as great an emphasis on purchasing coronary surgery. There is thus an apparently large utilisation of available facilities by Southampton residents which creates a serious pressure on resources. 75% of patients in Southampton are operated on within 3 months. One reason for this is the very large number of patients operated on within one month, and the very high proportion within the first 24 hours. Most of these are emergency patients with crescendo angina referred from around the region who arrive at the hospital and remain as inpatients until an angiogram can be performed. Angioplasty or surgery is offered as appropriate to clinical indication. The long term results of internal mammary artery grafts staying open are better than with vein grafts — internal mammary grafting is now a standard technique. An increase has occurred in the number of operations done but the mortality rate remains low at only 1%. The choice of angioplasty or surgery depends on the state of the coronary arteries as documented by angioplasty.

3 Prevention is often described on three levels:

- Primary prevention — where there is no identified individual or group e.g. advertising the effects of smoking, or drinking and driving.

- Secondary prevention is usually undertaken with a known risk group e.g. counselling middle aged men with a family history of heart disease.

- Tertiary prevention is normally described as assisting an identified individual where a problem has been identified and is amenable to early intervention which will prevent or reduce progress to more serious disease.

4. Services for Elderly People: Case Study B

Health services for a particular care group often cut across a range of specialties. This is nowhere more evident than in the case of services to elderly people. People over 65 consume roughly two thirds of all health care interventions — especially orthopaedic care, ophthalmology, cardiology and cardiac services, and general medical care. In consequence a consideration of the balance of services to elderly people is a relatively more difficult task than it might at first sight appear. This includes:

(i) the balance of acute and community care;

(ii) the extent to which primary care and home care services can provide appropriate long term care;

(iii) the extent to which expensive, indeed heroic, interventions should be made on elderly people with a) short life expectancy but where quality of life may be improved significantly for short periods, or b) where survival would be likely to lead to a life of poor quality for patient and carer.

(iv) the extent to which specialist care focused on acute survival detracts from, or undermines, investment in specialist rehabilitation which would raise quality of life for (a reduced number of) survivors.

Agreeing purchasing decisions for elderly care services is thus a complex exercise. Expenditure figures for the use of different specialties by people over age 65 are not usually available, which creates serious problems in discussing the appropriate balance of service. Conversely, focusing on a few important but marginal service improvements, whilst providing a firm base for debate, may deflect attention from broader issues.

As a way of entering the debate the case study was based on a particular area of concern — stroke care for elderly people — but with the intention of widening the debate beyond a discussion of stroke policy. Stroke care was used, partly because it connects to Case Study A (links between cardio-vascular and cerebro-vascular disease), and partly because it is possible to start with an individual case study which can then inform the wider debate on the balance between acute in-patient and community/primary care. In this way it was hoped that criteria for decision making might emerge relevant to the balance of other specialty provision for this care group without the need to consider each specialty in turn. (See Box 7).

BOX 7

CASE STUDY B

KEY FEATURE:	CASE HISTORY OF INDIVIDUAL WITH STROKE AS AN INTRODUCTION TO ETHICAL, ORGANISATIONAL AND FINANCIAL ISSUES OF THE BALANCE OF RESOURCES FOR CARE OF THE ELDERLY.
PROCESS:	SIMULATED CONTRACTS PLANNING GROUP DISCUSS CASE FOLLOWED BY FACILITATED DISCUSSION.
DILEMMAS TESTED:	I (EXPERT v LAY OPINION) III (ACUTE v COMMUNITY/PRIMARY CARE) IV (QUALITY OF LIFE v SAVING LIFE)

Consideration of the needs of elderly people also raises the importance of a lay or consumer perspective. It can be argued that coronary care is substantially (though not entirely) a medical/surgical expert matter. Case Study A therefore involved an expert panel simulation. In Case Study B, the views of the community, of elderly people subject to varying forms of care, and of their carers, are essential to the wider debate. Elderly people and their carers are able to express views formed over a long period of time and have well shaped opinions on the best forms of care and treatment.

Process

The study was in three parts:

1. An illustrative case of severe stroke (see Annex 3) offering two broad options (and some sub-options) for treatment;

   Option 1: Current DHA purchasing arrangements — admission, intervention, "slow stream" rehabilitation, and residential care; with some sub-options exploring likely future scenarios with the implementation of the White Paper "Caring for People", thus considering the effect of the policy after 1st April 1993.

Option 2: A proposed new DHA strategy to purchase more acute medical care from the community unit small hospitals plus intensive district nursing in patients homes.

2. A discussion of the medical, ethical and organisational issues raised by the case in the context of an analysis of stroke cases in part of the district, together with information providing a national perspective;

3. A discussion of the proper balance of acute and chronic episodes of care in relation to treatment location (in-patient, primary care or home care nursing).

The case was first considered in a simulated contracts planning group exercise in the presence of the Authority, after which a round table discussion was held.

Five representatives of appropriate, interested organisations debated the relative merits of the possible approaches and were asked to address the questions shown in Box 8.

BOX 8

QUESTIONS ADDRESSED

1. What issues does this case raise for health purchasing?

2. In what might a revised stroke policy consist?

3. What criteria should be used to determine the proper balance of acute in-patient and more localised care (community hospital, GP, or home)?

4. What ethical concerns are raised?

5. What issues does the case leave unresolved?

6. How can the criteria developed in this case study be applied to the balance of care for elderly people generally?

Discussion

The key issue in this case was the possibility of moving resources and services from acute medical care in district general hospitals to community hospitals, general practitioners and patients' homes. The case suggested that possibly too many resources and too much attention are devoted to very severe stroke. The study describes a person who is already quite disabled with poor general prognosis and who is likely to recover only partially, if at all, from severe stroke. The main suggestion was that the treatment should be related more to the dignity and comfort of the patient than to survival and should take into account the needs of the family. In the alternative approach the patient would initially be treated locally or even at home, largely with palliative care, rather than care being provided in an acute general hospital. Savings both in cost and distress may be considerable. The case raised a number of partially conflicting concerns.

Maintenance of existing patterns of care (whereby nearly all stroke cases are admitted to one of the two large acute hospitals) is likely to result in the need for investment in more hospital beds and staff to cover the additional workload. Changing the pattern of care to rely increasingly heavily on GP hospitals would include an expectation on GPs to provide care for severely ill patients with poor prognosis and short life expectancy. Investment in GP hospital staffing and district nursing would be necessary.

Less severely ill patients would either be cared for in the GP hospitals, or retained, following admission, at the DGH so that the most intensive (and therefore most expensive) input would be provided for stroke patients with the best prognosis. One possibility is for a general practice unit with enhanced support to people at home. In principle this is a good idea but requires a feasibility study.

Palliative care works because it is precisely that. A great deal of home care for a person with acute stroke may lead to further difficulties. If a substantial package of care is provided to support an acute episode at home it may still be required a month later — but will it continue to be provided? If not, on what basis should it be withdrawn? This could lead to escalating costs for local and home care services and some form of constraint will be required. A three week period might be reasonable as it is usually possible to make some prognosis about the outcome after that time. At that stage it becomes possible to evolve an appropriate continuing regime in discussion with the patient, the carer, the G.P. and appropriate other contacts. 'Buying some time' may be sensible in order to make an appropriate decision.

A 'flow-through' a local community service would be required just as much as if the patient was admitted to an acute hospital. Appropriate protocols for assessment and care management would be needed. It is also important to recognise the possible developments in medical and surgical care. The example of CHD from Case Study A illustrated this point well. If new and better treatments emerge then the balance of care may shift back to the provision of acute hospital care. In other words patients should be cared for near or in their own homes as long as their needs can be met in that setting. But if their needs can be met better by admission and intervention then this should be possible.

If a revised policy were to move resources away from acute hospitals into community services, hospitals may be starved of the resources necessary for innovation and improvement. The revised policy would require: (1) more flexible domiciliary services with a capacity for short term intensive input including skilled nursing; (2) increased capacity for acute care in community hospitals; and 3) clear protocols for the distribution of acute stroke care between the three sections. With smaller numbers of severe stroke patients entering the DGH, it might be feasible to locate their care in one specialised "stroke unit" which could offset anxiety over the possible loss of innovative opportunities mentioned above. Implicit in this policy is the shift of the emphasis in stroke care from the acute to the rehabilitation phase, and the need for skilled management of the latter to be available to "survivors", whichever type of care they required initially.

In 1993 domiciliary social services and long term residential nursing home care will be financed through the same budget. There is concern that the budget will be insufficient and that the need for social services to place priority on domiciliary care will lead to difficulties in discharging severely disabled people from hospital to nursing homes. DHA's are likely therefore to find themselves having to contribute the purchasing of such long term care either by sharing nursing home costs with social services or (more expensively) by paying provider hospitals for the waiting period between "readiness for discharge" and "availability of a nursing home bed". The latter cost would be particularly high in a DGH unit. The proposed policy would reduce the proportion of severe stroke patients entering the DGH unit and is likely to reduce the number of severely disabled patients surviving to the rehabilitation and long term care stages. As purchaser for the local population, the DHA would need to be confident that this policy offered the best deal for stroke sufferers, and was not simply a cheaper option.

Involvement of the patient, carers and others is essential in making such decisions. It is worth noting that the key person in the rehabilitation team is the patient.

Patients and carers wishes must be paramount. It is generally thought that most people who enter hospital would prefer provision nearer their own homes. Unfortunately, information on patient preferences is limited at present. For example, would patients prefer acute care or local community hospital provision? G.P.s are likely to be the key decision makers as proxy for the patient, raising again the crucial role of G.P.s in making such a policy of community oriented care work in practice.

Carers need differing levels of support depending on their caring task. The availability of support to carers varies from place to place and is better in the city compared to rural areas. In future the voluntary sector may not be able to play a much larger part in service provision, particularly as the number of people aged over 75 is increasing, whilst the number of people available to become informal carers is reducing.

The 1993 community care changes could result in beds being blocked in the general hospital unless social services are able to provide substantial additional resources. Difficulties may then be encountered by G.P.s in getting some patients into hospital. Unless local services are able to provide more help, the result could be lower survival rates for people needing long term care because they will not have access to the facilities of the general hospital.

With potentially *fewer* nursing homes as a result of the social security changes the emphasis should be placed on rehabilitation. Currently there is a weaker incentive to invest in rehabilitation services because hospitals can discharge fairly readily to nursing homes with social security support. Resources might thus be moved into the provision of community nursing, community physiotherapists and other forms of support to patients and carers where patients are undergoing rehabilitation.

Issues

During discussion a number of issues emerged.

1. Patients should be treated in their own homes as long as their needs can be met there, taking account of their social and economic conditions, the availability and commitment of carers, and the extent to which general practitioners are able to provide support.

2. Where hospital care is needed it should be provided in local community hospitals or acute hospitals depending on a pre-agreed guidelines developed by consultants and G.P.s.

3. Guidelines and protocols need to be developed agreed by all agencies in order to provide a framework within which G.P.s, consultants, social services and others can operate.

4. The policy developed should take full account of patients and carers wishes — which may not be the same as each other, or the same as those of formal care providers.

5. Local and home care requires more effective community services including additional resources for community nursing, physiotherapists and occupational therapy.

6. A revised policy has substantial ethical implications which require discussion with the community as well as with individual patients and carers at the point of need.

7. Any change to the current balance of resource investment will also require discussion with social services and the voluntary sector to ensure that discharge arrangements can be maintained *and* that appropriate rehabilitation can be provided in order to effect put through of the acute hospital beds.

Conclusion

In some ways the issues raised in this Case Study appeared more straightforward and clear cut than Case Study A. There is a great deal of support for developing improved community care and more effective home support. As first glance, allocating more resources for community hospital provision, community health services and home care is not one which is readily challenged.

However, the discussion raised both ethical and organisational concerns. On the ethical front the case highlights the importance of a dialogue with the community. If stroke care (and indeed other forms of treatment) are to be undertaken in the community with less heroic interventions in the case of severe stroke, leading to shorter survival times, then local people have a right to be involved in deciding the ethical issues involved.

The possibility that conflicts of viewpoint are likely to exist within the community is also raised as are the problems of how a balanced view is to be heard and any conflicts reconciled. Too often it is the vocal (or 'empowered') groups which can make their views heard, and the disadvantaged who cannot — although authorities may want to accommodate the views of the latter group.

Any policy revision of this nature demands a lay perspective and the necessity of a community consultation.

Organisationally the policy would demand more community staff with potentially fewer staff in the acute hospital. Innovations in acute care seldom take place in areas where the elderly stroke patient is admitted. If bed blockage begins to develop in acute units, the 'post-acute' severe stroke patients will require additional staff time. If fewer severe stroke patients are admitted to the acute unit, a feasible policy may be to set up a stroke unit there as a focus for innovation. However, if new techniques became available to intervene in stroke then the policy might need to be substantially amended or even reversed.

Notes on Chapter 4

1. In the latter case this ought to be possible on the existing DGH stroke services funding, which would still be sufficient to cover the anticipated increase in numbers requiring DGH care.

2. In Southampton there is likely to be a 30% increase in the number of over 75's during the next 10 years.

5. Case Study C: All Care Groups

This final case provided an opportunity to consider equity in resource distribution across all care groups — perhaps the most difficult task facing purchaser authorities. A number of constraints must be faced. These are that:

(i) deciding priorities between care groups is fraught with difficulties, not least because of the complex and multi-factoral nature of the issues;

(ii) most funds available are based on historic development of services and cannot be easily moved rapidly over a short period of time;

(iii) the use of individual specialties by different care groups varies in a way which is poorly recorded at present;

(iv) Most specialties inter-relate in some way — and patients are no respecters of specialty boundaries. Many patients, particularly those who are more elderly, will often have multiple problems requiring input from a range of specialties.

BOX 9

CASE STUDY C

KEY FEATURE:	BALANCE OF FUNDING ACROSS ALL CARE GROUPS BY CONSIDERATION OF HEALTH GAIN TARGETS
PROCESS:	STAGE 1: RANKING OF 15 HEALTH GAIN TARGETS
	STAGE 2: CONSENSUS PANEL DISCUSSION WITH EXPERT PRESENTATION
	STAGE 3: IMPLICATION OF RANKING FOR FUTURE RESOURCE ALLOCATION
DILEMMAS TESTED:	V 'HORIZONTAL' EQUITY VII HEALTH GAIN OUTCOMES

Given these constraints a manageable 'first step' was needed. It was decided to consider a range of what might be termed 'health gain' targets. The ones chosen were an amalgam of existing priorities and specific funding demands put in the context of improving the overall health of the community. Rather than planning being concerned with balancing funds for specific additional posts or equipment, decisions should be related more directly to overall targets for health improvement. To meet the targets may thus require a range of activities which usually cut across specialties. For example, attempting to reduce mortality from coronary heart disease does not solely require improvements in cardiological services within an acute in-patient setting. Improvements may be required in primary care — health promotion, smoking advice and cholesterol screening; in improved medical interventions with thrombolytic therapies; as well as by the enhanced provision of coronary artery bypass grafts and angioplasty.

Consequently this case study considered fifteen health gain targets which have been identified over the previous two years by Southampton and South West Hampshire DHA. All the targets were drawn from the Authority's health investment programme, and from the reports of the Director of Public Health. (Table 5).

Process

The case study was in three stages:

1. **Stage 1**
   In the first stage 15 health gain targets were ranked by a sample of managers and clinicians. The average rankings were given to participants as a way of demonstrating how aggregated individual preferences might influence investment strategies. (Note 1).

2. **Stage 2**
   In the second stage the Authority acted as a 'consensus panel'. Four experts made brief presentations on resource allocation as well as providing a commentary on key features of the ranked health gain targets. During a facilitated discussion the Authority drew out key concerns for further consideration.

3. **Stage 3**
   From the ranked health gain targets it was possible to calculate the simulated effect on the funding of all care groups (assuming the rankings were to be accepted). This information was presented to the Authority as a final stage in the case study.

Box 10

QUESTIONS ADDRESSED

1. What ethical, clinical, organisational or economic issues does this case study raise?

2. What criteria would you suggest should inform debate about the balance of investment across care groups?

3. What further information do you feel is vital to a proper consideration of 'horizontal equity'?

4. What comments do you have on the ranked health gain targets, and how would you summarise the outcome of the study?

5. What future implications do you perceive for this type of activity?

The Authority heard four expert witnesses:

- an epidemiologist
- a health economist
- a moral philosopher, and
- a medical journalist

Each addressed both general concerns as well as the ranking exercise. Their views are summarised in Boxes 11 to 14 pages

TABLE 5

15 HEALTH GAIN TARGETS

Serial (a)	Health gain target: Description (b)	Volume (This District) (c)	Target Improvement (d)	To be Tackled By (e)	Rank (Utility) (f)
1	Improve dental health of children	Around 55% of 5 year olds have some decay	50% reduction in DMF score (decayed, missing & filled teeth)	Water fluoridation and education	
2	Improve service for neonates by drug treatment for immature lungs (surfactant therapy)	19 neonatal deaths per annum total (3.4 per 1000 live births)	20% reduction in neonatal mortality	Easier access to clinics; education	
3	Improve provision of family planning services to teenage	750 teenage pregnancies per annum	20% reduction in unwanted pregnancies	Easier access to clinics; education	
4	Reduce incidence of suicide	250 per annum in total	10% reduction in suicides	Crisis service and helpline	
5	Reduce mortality from breast and cervical cancer	100 deaths (breast) and 14 deaths (cervical) per annum in total	10% reduction in mortality	Screening and early treatment	
6	Improve palliative care at Countess Mountbatten and in Community Unit	336 episodes per annum	Improved quality of care	Audit of care and implementation	
7	Improve rehabilitation for circulatory diseases, especially stroke	3500 total admissions per annum with circulatory diseases	5% reduction in handicap and improved quality of life	Increased district nursing and support staff in community (speech, physio and occupational therapists)	
8	Reduce waiting lists for hip replacements and cataracts (for elderly)	70 Hips and 570 Cataracts waiting over 3 months	Reduce waiting times to less than 3 months	Purchase additional services	
9	Reduce mortality from coronary heart disease	1200 deaths per annum in total	5% reduction in mortality	New drugs and more by-pass operations	
10	Improve community mental health services for people with schizophrenia	850 sufferers (prevalence)	Improved quality of life	Imorved care (crisis service) and medical/ social care liaison	
11	Reduce mortality and morbidity from home and traffic accidents in childhood (0-14 years)	400 total admissions per annum	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/AIDS	22 notified AIDS cases	25% reduction in HIV infection	Needle exchange schemes; provision of condoms	
14	Provide bereavement counselling	(10-15 people per annum)	Improved quality of life	Increased access to counselling	
15	Reduce waiting lists for hernias and varicose veins (adult acute)	14 hernias, 292 varicose veins waiting over one year	No waiting over one year	Purchase additional services	

BOX 11

An Epidemiologists Position

As a representative of public health the epidemiologist must be directed towards improving the health of the population as a whole. That mission informs the way that the epidemiologist looks at targets and the way the public health doctor perceives the contribution each of the targets will make towards the health of the population in general. In making resource allocation decisions, what questions should be asked?

Firstly, it will be important to note **who** will benefit — by age, gender, ethnicity, or some other sub-group? Who else might benefit indirectly? Although the prime target may be one care group, or group of people, there may be an impact on another, leading to an inadvertent health gain. Sometimes the result is quite unintended. For example elderly people have a high incidence of heart disease and potentially might benefit from the development of coronary heart disease services. Unfortunately they do not always have access to those services. A second example can be taken from family planning for teenagers. The impact of good preventive services will not only be on teenagers themselves but perhaps on the health of their family and on any subsequent child.

It is important also to consider who will *not* benefit. Are the people who it is hoped will benefit able to get access to the services? Are services organised in such a way to maximise the benefit from drugs given for heart attack soon after the event?

Secondly it is important to be explicit about **what** is targetted, and more importantly whether there is a tangible health gain. What would the putative patient actually feel? What would they be able to do or not do? These types of questions account for much of the variation in the way people rank targets. Mobility is a key issue in hip replacements. But the best predictor of success is the person's general health condition before the operation.

Thirdly there is the question of **'when'**. Here there is a classic dilemma. Will the benefits be gained in the short term and take immediate effect for those who are ill now? Or is the intervention a long term investment in the health of the population? Treatment fashions change and it is important to be clear about ideas behind interventions being ranked now. For example, in considering surfactant therapy our concern is to reduce what is at present the single most important cause of death in premature infants. is important to cite this fact so that it may be translated as treatment changes. It is not the surfactant therapy itself which matters; rather our concern is with the health of premature infants. If other therapies become available they should be used.

Fourthly, **why** is this treatment considered? Who will want the health gain in question? What is the demand for it? Or perhaps, what would happen if it was not undertaken? Any consideration of equity across care groups is extremely difficult. Epidemiology and public health medicine uses health indicators to consider what improvements may be possible from treatments available. Health gain targets must therefore relate to the information which is available. No system is perfect but in developing a better public health some people will not fit easily into care groups designed for the provision of services to people who are sick, rather than designed to keep people well. □

BOX 12

A Health Economist's Approach

From the economists point of view the objective of resource allocation must be to maximise the amount of healthgain that can be obtained from the resources available for healthcare provision. This case thus raises clinical, organisational and economic issues. The first is that the economist takes a community wide perspective and in so doing may well neglect either specific individuals or groups of individuals. Secondly, the economist will question the objectives of the NHS. Are the objectives those originally established when the NHS was first started? Or are they to be modified over time? Thirdly, the economist will ask what criteria should inform a debate about the balance of investment across care groups.

From an economic perspective it is possible to identify two areas: the input or resource costs, and the outcomes obtained from those inputs. These must then be melded together. Much of the discussion of healthcare resource allocation focuses on the concept of cost effectiveness. Effectiveness is normally defined as the ratio of outcomes to objectives — does the system achieve what it sets out to achieve. Cost-effectiveness however relates that comparison to the ratio of outcomes to inputs. Too frequently there is concentration on costs to the detriment of effectiveness.

Economic evaluation in this area of priority setting can take two further approaches. First, there is the narrow approach taking a particular disease for which there are two or more competing interventions. An economic analysis can be done on those interventions to guide decision making on which one to apply. The second is the broader focus required when considering all interventions for all manner of different diseases and causes of ill-health.

The concept of quality adjusted life years (QALYs) is important in dealing with the second (broader) focus. QALYs can be illustrated in this way. Suppose there are two types of interventions for, say, coronary heart disease. (See Table 1). What is required is to consider these two interventions from two perspectives: (i) that of the quantity of life or survival that might result and (ii) the quality of that additional life thereby generated. Quality is usually measured on a 0-1 scale. Let the gain in quality of life for (A) be 0.5 and for (B) 0.3.

At this point it would appear that resources should be invested into (A) on Table 1. It can be seen that the equivalent of four quality adjusted life years is generated in (A), but only 1.8 in (B). However a further step is necessary. On the assumption that the intervention for (A) is more expensive than (B), the cost for each quality adjusted life year can be generated. In doing so the former position is reversed — (B) would appear to be a better investment.

TABLE 2

AN ILLUSTRATION OF QALYs

	Intervention	
	A	B
Gain in survival (years)	8	6
Gain in Q of L (scale: 0-1)	0.5	0.3
LYs gained	4	1.8
Cost of intervention	£500	£200
Cost per QALYs gained	£125	£111

TABLE 3

COST PER QALY LEAGUE TABLE

Intervention	Cost per QALY (£)
GP advice to stop smoking	170
Benign intracranial tumours	240
Subarachnoid haemorrhage	310
Pacemaker implantation for heart block	700
Hip replacement	750
CABG for severe angina	1040
GP control of total serum cholesterol	1700
CABG for severe angina, 2 vessel disease	2280
Renal transplantation (Cadaver)	3000
Breast cancer screening	3500
Heart transplantation	5000
Metastatic tumours in central nervous system	11000
CABG for mild angina, 2 vessel disease	12600
Haemodialysis (in hospital)	14000
Malignant brain tumour	69000

From a strictly economic point of view, by undertaking this exercise across all possible health interventions, the health gain of the population is maximised from the resources available for healthcare. This type of approach has been employed recently in Oregon, USA, where the equivalent of a cost per QALY league table (Table 2) was drawn up for a range of condition treatment pairs. In Oregon this generated some quite bizarre results. Table 3 is taken from one page of the interim report which showed that filling a tooth appeared to offer better value for money than undertaking a procedure such as an appendectomy. The reason for this is that the approach has been applied simplistically without moderation from other factors. Health gain has been related to cost but because the cost of an appendectomy is that much greater than capping a tooth, yet generates roughly the same amount of pain free life, the calculated result is counter-intuitive. Oregon have now adjusted the process and developed two additional stages in the process, the first of which establishes a ranking of intervention types based on ascertained community values and the second, a test of "reasonableness".

TABLE 4

FACTORS PRODUCING THE PRIORITY SCORES OF FOUR TREATMENTS IN OREGON'S DRAFT LIST

Treatment	Expected Net Benefit From Treatment*	Expected Duration of Benefit, Y	Cost $	Priority Rating+	Priority Ranking
Tooth capping	.08	4	38.10	117.6	371
Surgery for ectopic pregnancy	.71++	48	4015	117.8	372
Splints for temporomandibular joint disorder	.16	5	98.51	122.2	376
Appendectomy	.97	48	5744	122.5	377

* Maximum achievable benefit = 1.0.

The Southampton ranking exercise is a good start in thinking about priority setting. Initially it appears quite helpful by appearing to offer a rational and logical way of linking interventions to cost and the benefits which might be achieved from those interventions.

Firstly, however there is no clear indication of expected healthcare gains required for each target. Measuring the outcomes is also difficult. The target descriptions are very general and could be made more specific and related to the actual cost of achieving the stated outcome.

The second cluster of problems is that this type of ranking system brings together a wide range of quite different entities. Some of the health gain targets are disease specific, others are concerned with prevention, yet others relate to the logistics of service provision. These are not easy to rank on any measure. But that in itself is a lesson. Attempting to rank matters which are so disparate raises very difficult ethical, organisational and economic concerns.

Thirdly, a question must be asked about which targets have been left off the list. In any questionnaire exercise of this sort it is often what is not asked which is as crucial as that which is covered. In making resource allocation decisions the economist will wish to ask whose preferences are being considered; the community's? the specific healthcare professional's? the patient's? the doctor's? the healthcare manager's? or the politician's? This case study raises what is an increasingly important discipline of decision analysis in medicine. Perhaps greater emphasis needs to be placed on this before it will be possible to be more explicit about healthcare resource allocation. □

+ Priority ratings were obtained using the following formula: Priority Rating = Cost of Treatment/(Net Expected Benefit x Duration of Benefit). Ratings ranged from 1.45 (highest priority) to 999 998 (lowest priority).

++ The net benefit is relatively low because Oregon's consultant physicians estimated that (only) 70% of patients with ectopic pregnancy would die if not operated on. Increasing the estimated net benefit from surgery to 1.0 would move this treatment to 326 on the draft priority list.

Source: Oregon Health Commission.

BOX 13

A Moral Philosophers Concern

Resource allocation in health care involves a concern for justice, because ethical dilemmas arise where the interests of different people conflict. When allocating resources between different groups the main implication is for the lives and sufferings of individuals. In looking for criteria for allocating resources between these groups, from an ethical point of view efficiency is important. If resources are used less efficiently than they could be that means people who could be helped are not helped. That is unethical and not just inefficient.

Efficiency however is not enough. Allocation of resources must meet the criteria of justice. Justice is often called a "contested concept", by which is meant that people interpret justice differently according to the values they start with, especially their political values in the health care context. The contest occurs over what differences between people should be counted as relevant. The three most popular criteria are desert, need and utility.

A useful starting point is a definition of justice which can be traced back to Aristotle. Aristotle said that 'justice exists in treating equals equally and unequals unequally in proportion to their relevant difference'. While that might not appear to offer much at first sight it does contain an important point. That is, there is a presumption that people should be treated equally unless it can be shown that a relevant difference exists to justify treating them unequally. Certain allocations can be ruled out on this alone — for example, it is generally agreed in society that race and sex do not count as relevant differences for the purposes of healthcare allocations, except under very specific circumstances, such as the provision of appropriate maternity care: Allocating resources in healthcare according to race would quite properly lead to an outcry. There is a wide agreement that age is not a relevant criterion though there is some dispute about this.

The **desert** model of justice says that people should get what they deserve. In the context of healthcare this would amount to, for example, saying that people who did not take responsibility for their own health should not get priority or resources. In Case Study A it was suggested flippantly that, perhaps, people who smoke should not be operated on for a coronary artery by-pass graft. It might well be argued that, with limited resources, maximisation of outcomes may be achieved by not spending those resources on people who do not deserve them because they have been irresponsible about their own health. Most moral philosophers will not advocate this policy as it is extremely difficult to talk about what people deserve, or why and how people should take personal responsibility for health. Substantial social inequalities may cause serious difficulties for many people in taking that responsibility; and indeed certain lifestyles which are seen to be acceptable at one time are then found to be detrimental. Smoking is a good example.

The desert model contains many flaws. It must be remembered however that if such a policy is to be adopted, it would imply that people should be encouraged to take more responsibility for their own health, and this would suggest more resources being spent on educative programmes, for example.

The second area is that of **need**. Justice is concerned with satisfying people's needs. This would seem to suggest that resources should be allocated in such a way as to tackle present suffering rather than prevent future suffering — because healthcare is often concerned with need as it presents immediately. This leads to

the problem about defining need — need as perceived by whom? Is what the customer or patient wants identical with that which he or she needs? This is a perennial problem with the concept of need. One interpretation might be to direct resources towards the worst off on the grounds that they are in a position of greatest need, in the sense that their welfare is low. The problem is that it can be argued to be counter-productive. An example was provided in Case Study B where it was suggested that certain services may be a waste of resources because little could be done for the patient in any event and simply took resources away from people who might benefit. There are thus two problems in with need: first in defining need; second, meeting some needs may be counter-productive.

The third criterion is that of **utility** and the utilitarian concept of justice. This combines two elements; firstly, the principle of maximisation, and secondly, a concept of utility. The principle of maximisation suggests that any allocation should achieve the greatest possible utility that is required. There is a problem here concerning the point at which maximising occurs. Is it justifiable to stop treating one person who is using up a lot of resources in order to treat five others? Most people take the view that such a maximisation if done at all must be done at an earlier stage. In effect the policy states that certain people will not be helped but is effected in a less brutal way than ceasing treatment once it has begun. It is important to remember however that application of the utilitarian concept entails that a service will not be available to some people and that they will die.

The concept of utility is concerned with the amount of benefit to the individual or to society. One way in which benefit might be measured is in terms of the number of lives saved; another is in terms of the quality of life achieved. For the utilitarian however, life itself is not the ultimate value, but only one value as a necessary condition to other things which are valued, such as the opportunity to achieve goals or to avoid suffering. For the utilitarian, future suffering counts as much as present suffering. It does not matter at what time the suffering occurs. Whenever it occurs it is a bad thing. So resources may well be put into prevention of future suffering in preference to present suffering. This still leaves a question about medical success and utility, whether it is important to aim for the largest number of people or the degree to which individuals can be helped.

These are difficult decisions and indicate important criteria about the ranking exercise used in the simulation. How is an improved quality of life measured against a target such as a 5% reduction in mortality for a specific number of people? The desire for a common measure is where the quality adjusted life year approach appears so attractive. It provides a numerical value that can be applied to a variety of different condition-treatment pairs, provides a measure of medical success and can be readily summed.

The utilitarian principle claims to count as a principle of justice because in using it to calculate the benefit each person counts for one and no more than one. Those health economists who have promoted QALYs suggest that it is because one QALY counts for one, no matter whose life it belongs to — that it is non-discriminatory. In fact QALYs can be criticised on the grounds that they are not just, but create systematic discrimination against particular care groups, especially those who have long term disability and for whom it is difficult to generate a higher quality of life even from quite simple interventions. □

BOX 14

A Medical Journalist's View

Rationing is at the cutting edge of healthcare. Increasingly health authorities will be asked to make very hard decisions of which the average person in society has little or no understanding. They are horrified by the idea that they may not be able to get an appropriate form of treatment when required. Unfortunately, these are decisions which cannot be made by the population at large. Some form of authority which will have to take such decisions; and that authority must be accountable.

Firstly, mechanisms for accountability will be extremely important. One danger which exists is that of litigation and potentially endless appeal mechanisms as patients use the law to refine healthcare allocation decisions.

Secondly, information will be important particularly on the effectiveness of treatment. There will never be perfect information and there is no point in waiting until perfection is available. The utilitarian approach has value, because to be undertaken properly it requires wide information on effectiveness. This raises tricky problems about how the utility of treatments for different conditions amongst varying groups can be measured.

Various ways have been tried to develop rationing mechanisms. Some are based on a core service — a bare minimum provided by the state which individuals can add through private insurance. Others, as in Oregon, develop a list for treatment — condition pairs based both on community values, quality of well being scores and expert judgement.

The idea for a minimum core service seems at first sight attractive but begs the question about how people are treated whose condition does not fall within the core. Are some people simply left with a potentially disabling disorder because it is not 'on the list.' Any form of ranking is complex because it requires those undertaking the exercise to balance marginal benefit with increased cost and to do this in the context of their own education, prejudices and current media views and pressure. For example, screening for breast and cervical cancer is fashionable, but is extremely expensive per life saved. Is it sensible to spend that amount of money even though there is a gender issue which needs to be addressed?

Everyone must be involved in the debate — politicians, managers, doctors, nurses, patients and the general public. Tighter, more specific methodologies must be developed with refined criteria to assist decision making. The lesson that has been learnt from this seminar is that making such judgements is exceptionally difficult and that there is no one simple straightforward way. The only route must be to develop a number of inter-linked approaches which assists some authority to make decisions in the most open and accountable way. □

Healthgain Targets: Ranking Exercise

The seminar then considered the ranking exercise. Fifteen healthgain targets taken from the Authorities' existing planning and strategic documents were listed in a random order (Table 5). The list included:

- a description of each target
- the volume (dimension) of the problem or issue for Southampton and South West Hampshire
- the target improvement
- a way of tackling the issue (with the assumption that if this was done it would achieve the desired result)
- a space for the respondents rank (out of 15)

The health gain targets were ranked by a number of managers, clinicians and non executive directors. The targets are shown in Table 5 and the average rankings with variance in Table 6.

From Table 6 it can be seen that there is substantial agreement (relatively low variance) amongst the top three or four on the list, and similarly amongst the bottom three or four. The group of seven healthcare targets in the centre are more variable and could be put almost in any order (Table 7). This is intuitively correct. It might be expected that a number of topic areas will be high on people's agenda, mainly perhaps because of recent publicity. Certain concerns tend to be low in people's priorities, usually because of particular prejudices, sometimes turning on the question of desert. Mental health care and HIV/AIDS often appear towards the bottom of such lists.

The list used did not provide cost information. This was done deliberately as a way of eliciting people's real priorities. The alternative would have been to provide sufficient cost information that respondents could demonstrate the way they would meet all targets to some degree. This approach is to give respondents a fixed sum of money — say £500,000 — which they can share out amongst a range of targets, subject to a minimum amount. Respondents would be able to demonstrate their priorities by the amount of money allocated to each heading. Unfortunately this does not provide a clear cut picture of priorities. To overcome this, the two methods could be used in parallel.

Another way is to provide individuals with listed pairs to rank against each other in a way similar to that undertaken in Oregon. This has the value of forcing people to look at just two condition-treatment pairs at any one time, but it rapidly becomes unwieldy if there are a large number of items to be considered.

The fifteen health gain targets were grouped in five care group areas (Table 8) and aggregated. An assumption was then made that any increase in funding one group would have to be cost neutral and thus be taken away from the allocation for another group. (Note 2). If the results of the questionnaire were applied to current funding in Southampton and South West Hampshire DHA on the basis of those five care groups it would lead to the result in Table 9. It must be remembered that this is for simulation purposes only. There is no suggestion that the Authority will do what this proposes. It is instructive nonetheless that the result indicates more money for acute in-patient care and paediatrics, and a reduction of resources to mental health and services for elderly people. This runs counter to the Authority's overall objectives of developing improved community services and protecting services to the 'priority' groups.

Health promotion also is not seen as such a high priority by respondents but would be unlikely to be cut so savagely. The rank position of large items skews the effect in a small sample and must be guarded against in 'real life.' However this suggests a refinement to the approach: the targets are ranked as in the exercise but the resources for very expensive high ranking items are reconsidered, and some redistribution made over the next few most important items (on some criteria). As the Oregon experiment suggests no single methodology will be sufficient, and a mixed approach will probably be needed.

One lesson which emerged is the need to moderate community or expert views (prejudices or priorities) with public policy requirements drawn from other considerations. For example, significant long-term under-funding of a service may need to be addressed; expert knowledge will influence a prima facie view of the lay person; yet there is also a rights based view that says that certain people with disabilities have the 'right' to the concern of society and to be provided with appropriate care — even if that is not cost-effective on a utilitarian measure.

Discussion

Following the four presentations, and discussion of the ranking exercise, two key points emerged:

- In providing services to meet a wide range of health care needs, maximisation of utility must be balanced with some notion of the rights that individuals may believe they have to a 'minimum core service'.

- Health authorities must determine community need for the purposes of purchasing but must decide carefully (a) what need is to be measured and (b) how that need can be determined.

TABLE 6

CASE STUDY C: ANALYSIS OF HEALTH GAIN QUESTIONNAIRE

NO. OF RESPONSES: 43

Target No.		Average Utility Rating	Rank	Variation Minimum Rating	Variation Maximum Rating
(a)		(b)		(c)	(d)
1	(Child Dental Health)	9.0	11	1	15
2	(Surfactant Therapy)	7.5	7	1	15
3	(Family Planning)	7.8	8	1	15
4	(Suicide)	10.2	13=	4	15
5	(Breast/Cervical Cancer)	5.4	3	1	14
6	(Palliative Care)	9.7	12	1	14
7	(Circulatory/Stroke)	7.0	6	1	13
8	(Hips/Cataracts)	6.9	5	1	14
9	(Coronary Heart Disease)	4.0	1	1	12
10	(Schizophrenia Services)	8.5	9	1	14
11	(Childhood Accident)	5.2	2	1	13
12	(Smoking)	6.2	4	1	15
13	(HIV/AIDS)	8.6	10	1	15
14	(Bereavement Counselling)	13.4	15	6	15
15	(Hernias/Varicose Veins)	10.2	13=	1	15

TABLE 7

TOP GROUP	9. Coronary Heart Disease 11. Reduce Childhood Accident 5. Breast/Cervical Cancer	Substantial agreement
	12. Reduce smoking	
	8. Hips/Cataracts 7. Circulatory/Stroke 2. Surfactant Therapy 3. Family Planning 10. Schizophrenia 13. HIV/Aids	Very variable
	11. Clinical Dental Health	
BOTTOM GROUP	6. Palliative Care 4. Suicide 15. Hernias/Varicose Veins 14. Bereavement Counselling	Substantial agreement

Need and Utility

Need and utility can conflict in some situations. To provide care to the person with the greatest need might be counter-productive in service provision to a whole group. Health authorities must be clear what they are trying to achieve. People may be disadvantaged in a number of ways. Should authorities try to remove a particular disadvantage or will authorities only act if in removing disadvantage some obvious usefulness is achieved? Criteria are required to deal with any situation in which need and utility conflict. One major criterion is to equate need with waiting lists, or in other words, with demand. Another approach may be to scale the resources available according to an 'a priori' view. The key question is 'whose priorities?'

In order to tackle this difficulty it will be essential to have measures of effectiveness gauged by both traditional clinical parameters and other indications of patient benefit. Unfortunately, determining both costs and utility presents considerable measurement difficulties.

Until fairly recently much new growth money was based on input criteria. For example, if available money would purchase, say, two physiotherapists, it would be stated that a tangible benefit had been achieved from the investment. The shift which has occurred is now to consider outputs and health gain. This is more difficult to conceptualise and requires authorities to decide what benefit will be achieved. Instead of authorities simply identifying the inputs purchased with resources available (and making the *assumption* of benefit) it will be necessary to put greater emphasis on measures of effectiveness. One difficulty however is that there may be many interventions which look advantageous from a cost benefit point of view (eg. from a QALY calculation). This still does not indicate which of those items should be funded. Nor is it possible to fund only those items which are cheap on a cost per QALY basis, as Oregon discovered.

Community Consultation

A further difficulty is finding what 'society' or 'community' should be consulted and how the general public can be enabled to express an informed opinion. The seminar illustrated the difficulty in coming to grips with making an informed judgement of complex issues. Issues must be put before the public in a meaningful way to enable public participation. This begs the question of whether health authorities are 'champions of the people.' Do health authorities have the right to set themselves up on that basis? Are authorities accountable, and if not, how can they be made accountable for such decisions?

Many services are rationed at present via waiting lists. In part this is because people have had a natural expectation since 1948 that the NHS offers them 'rights' to be treated for whatever ills they believe requires intervention. Waiting lists could be reduced considerably by refusing to provide certain treatments, but to do so will generate strong antagonism from those who believe their rights are undermined. Waiting lists are not necessarily a good indicator of demand, especially for the most life threatening disorders. Indeed, the appointment of *additional* staff can lead to *increasing* waiting lists as services become available and patients are referred. Waiting lists can also be inaccurate as many patients may have had their problem resolved elsewhere, have moved, or died.

Rights

'Rights' are thus another subject fraught with difficulty. No one has the 'right' to a particular form of treatment under the NHS. Health authorities are only required to have regard to the health needs in the population. Nonetheless people perceive themselves as having rights to particular services. Unfortunately one group demanding rights may reduce the availability of care to others, as has happened recently in the United States where the strength of the 'grey' lobby reduced spending on paediatric and neo-natal services. Thus there are conflicting rights which must be considered; individuals must be given the opportunity to express their demands even if they do not have the right in law to particular resources.

'Givens'

A further concern for health authorities will be the political imperatives or 'givens.' Waiting list considerations demonstrate only a very small part of the potential work that authorities must consider. The Department of Health has efficiency criteria of which authorities must take heed. Those criteria are largely dependent upon finished consultant episodes which thus drives the authorities' investment strategies towards demonstrable increases in acute in-patient activities.

Waiting lists may have a useful purpose in protecting doctors from facing a conflict with their ethical principles. Instead of having to decide whether or not to treat a patient the doctor can put the person on a waiting list knowing that the situation can proceed indefinitely. If a waiting list has to be cleared in a short time then the doctor has to make choices as to who goes on the list or who is to be treated. For the first time he or she has to ration care more explicitly. However, rationing, (through waiting lists or in some other way) forces members of the

public to tackle resource scarcity either through lobbying local and national politicians or through the ballot box. If people who are patently in need are refused care there will be greater pressure on government. Although creation of such pressures is not suggested as an Authority strategy it raises an important point — should Authorities, as custodians of the public health, lobby for improved resources as well as spend as efficiently and equitably as possible those resources with which they are provided.

Summary

A Health Authority has two roles; firstly to allocate resources, and secondly to identify what services are not being provided and to endeavour to find the resources to make that provision. As the NHS reforms progress greater explicitness of resource allocation will emerge. For too long decisions have been kept behind 'closed doors' with only implicit attention to priorities. Greater explicitness may mean moving in the direction of greater justice. If criteria for resource allocation are openly agreed and seen to be fairly applied then the public are likely to accept them more. Justice does not occur simply in public visibility and explicitness. Nonetheless, openness about decision making is more likely to ensure that resources are allocated in a way which is at least acceptable to the community even if it is not entirely just.

The result of the health gain target exercise demonstrates the very serious methodological problems in turning preference data into sensible planning arrangements. There is no right answer to linking different pieces of information together for the purposes of priority setting. Too many variables are involved. For example, what case-mix goes into making a care group? What case information is available? How can these definitions be used to determine whether limited resources can be moved from one care group to another? The ranking exercise was one attempt to consider how this might be developed. The exercise itself provided insights into the preferences individuals may express under uncertainty and indicated the need for very clear simple processes to be adopted for priority setting. Over-complexity will, quite simply, be counter-productive.

Notes to Chapter 6

1. Participants in the ranking exercise were not provided with information as to the cost of achieving the targets. The exercise was intended to investigate individuals' 'a priori' preferences without being given an opportunity to balance or share out costs across the health gain targets.

2. Setting one group against another in this way is strictly unrealistic (in that

other balancing factors would be included) but serves to highlight the effect of the ranking. Small shifts of rank (i.e. priority) can potentially have disproportionate effects on resource allocation.

TABLE 8

		£'000s	£'000s
HEALTH PROMOTION	3 Family Planning	−65	
	12 Smoking	−50	−135
	13 HIV Aids	−20	
ADULT ACUTE	5 Cancer	+750	
	9 CHD	+250	+925
	15 Hernias	−75	
MENTAL HEALTH	4 Suicide	−60	
	10 Schizophrenia	−100	−175
	14 Bereavement	−15	
ELDERLY	6 Palliative	−10	
	7 Circulation	−200	−295
	8 Hips	−85	
CHILDRENS/ PAEDIATRICS	1 Dental	−50	
	2 Surfactant	−100	−120
	11 Accident	+30	

Simulated re-distribution of resources in line with ranked priorities.

TABLE 10

	Reduction	**Current Expenditure**	**% Reduce/ Increase**
HEALTH PROMOTION	−£135K	+£400K	−33.75%
ADULT ACUTE	+£925K	£50M	+ 1.85%
MENTAL HEALTH	−£175K	£ 8M	− 2.2%
ELDERLY	−£295K	£42M	− 0.7%
CHILDRENS/PAEDIATRIC	−£120K	£18M	− 0.67%

6. LESSONS, ISSUES AND ACTION

The seminar provided a number of lessons, raised substantial issues and suggested lines for further action. Many of the lessons are superficially straightforward but tackling them will be complex.

Lessons Learned

The lessons learned are grouped for ease of consideration (Box 15). The first group suggests that priority setting and resource allocation are 'wicked' problems for which there are no easy answers. Evidence and information is patchy or unavailable and there is thus little consensus to do more than change at the margins. Measuring need is a particularly difficult and complex task.

Accountability of purchaser authorities to government, the community and providers forms the second group. Authorities must be able to explain the decisions they take to their patients/service users and clinicians. Perhaps even more important is for purchasers to obtain the views of patients and potential patients about 'need' as one component of understanding healthcare requirements. As part of the process, non-executive members may need support in making an effective contribution to priority setting.

Thirdly, rationing occurs now and will continue in some form. Authorities must match the reasonable demands of provider units (for greater clinical freedom or more resources) with the need to balance priorities across widely disparate health and healthcare requirements. Too much attention to 'fairness' and 'utility' may drive out innovation by restricting funds for research and expensive new procedures which benefit only a few patients initially.

The fourth group draws on the lessons of the ranking exercise. There is a danger in priority setting methodologies of mixing together unlike categories — e.g. health promotion, acute in-patient care (as measured by waiting lists), long-term care and logistic (managerial) issues. It is impossible fully to compare like with like, but some effort to do so will be necessary. Listening to outside experts (as compared to those from within an Authority) may provide a moderating and widening perspective.

BOX 15

LESSONS LEARNED

- There are no easy answers
- Evidence and information is patchy
- It is difficult to do more than change at margins
- Measuring need is hard and complex

- Accountability is important
- Authorities must be able to explain decisions taken
- Importance of obtaining patients/clients views
- Non-executive members have not been given sufficient training

- Obsession with utility may stifle innovation
- Rationing will be, and needs to be, more explicit
- Resisting providers is difficult

- More information is required comparing inputs with outcomes
- Awaydays with experts can be valuable
- Importance of comparing like with like in priority setting exercises

Issues Requiring Further Discussion

A number of substantial issues require further debate and discussion (Box 16). These issues encompass three main areas: firstly the **appropriate role** of a purchaser authority incorporating notions of accountability, communication, the policy directives and requirements of the Department of Health, NHS Management Executive and Regional Health Authorities, and relationships with clinicians and providers; secondly, the necessity for developing **integrated** approaches incorporating links between district health authorities and family health service authorities, the integration of academic disciplines and the development of collaborative rationing procedures; and thirdly the importance of **evaluation** — of existing needs and treatments, and of the effect of resource allocation decisions on outcomes and health status (figure 3).

ISSUES REQUIRING FURTHER DISCUSSION

A. APPROPRIATE ROLE

- Appropriate role of the Authority
- Accountability — to whom and how
- Communication with general public
- Communication with politicians
- Range of 'givens' and the limited freedom of the authority
- Development of protocols and directives

B. INTEGRATION

- Links between DHAs and FHSAs/GPs
- Effective integration of disciplines e.g. economics, medicine, moral philosophy,epidemiology
- How 'rationing' can be developed and improved

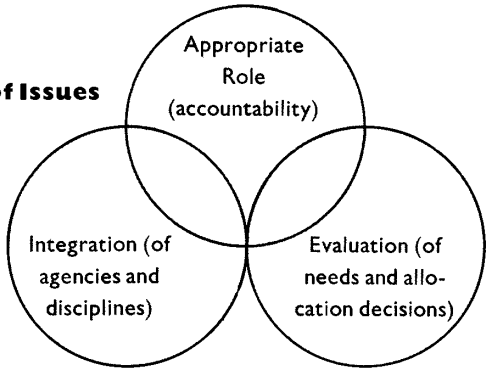
C. EVALUATION

- Role of 'outside' experts
- Tension between 'utility' and 'innovation' 'best for most' against 'excellence for few'
- Evaluation of innovations
- What is *relevant* information and how it can be considered

Appropriate Role of the Authority

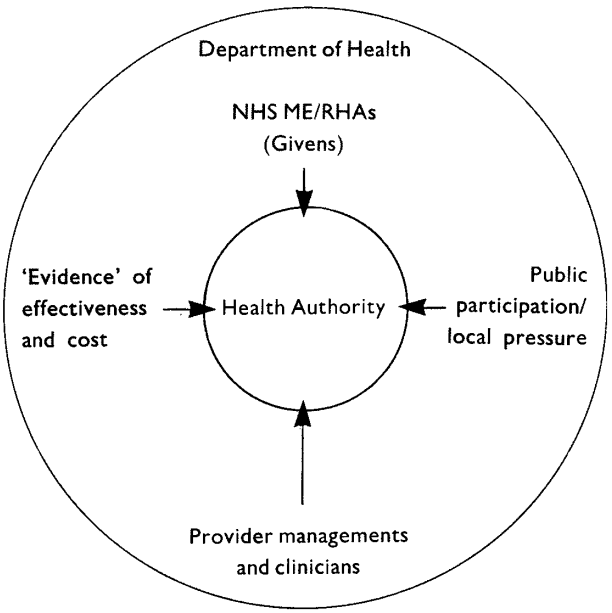
The role of the authority can be demonstrated by the diagram in Figure 4. The authority must balance pressures from four sides. From above, the Department of Health sets certain targets such as waiting time reductions, screening programmes, the targets as set out in the Health of the Nation and so on. If an authority is to survive it must deliver the 'givens.' From below there is the pressure from professional groups and provider organisations. The 'old' NHS was strongly affected by the inputs from these two sources — the ideas being delivered downwards from the government and the pressure coming upwards from providers.

Figure 3:
Interplay of Issues



On the horizontal axis there are two other inputs which may become more important in the future. In the first place is the public, whether it is the community health council, town meetings such as in Oregon, public surveys and other ways of tapping public opinion. District health authorities will be required to find ways of understanding community need and becoming more responsive to the public. That theme was rehearsed a number of times during the seminar. In the past, despite authorities' best efforts the public has not figured greatly in decisions on priorities. Although the composition of new health authorities does not create strong local accountability there is nonetheless an opportunity under the new arrangements to ensure that wider public consultation takes place.

Figure 4. Balancing Pressures



The other pressure is what might be termed 'evidence.' There is increasing evidence concerning needs, effectiveness and costs. That evidence can take a number of forms. It may be cost per QALY, the results of randomised and standard trials, the outcomes of clinical audit, or the provision of effectiveness bulletins. One of the key themes which emerged from the cases was the desirability of setting priorities where there is clear and demonstrable evidence about cost effectiveness. This has played some part in resource allocation in the past although often individual value judgements have been more important. In the future the new regime may provide an opportunity for the 'evidence' part of the equation to be given a greater emphasis even though it must be accepted that there are a lot of missing parts of that evidence.

Health authorities are the recipients of these pressures from different sources. But few authority members expected when they were appointed to be asked to ration resources. This is likely to make life difficult and uncomfortable for these members and they may need training and support to help them carry out their responsibility.

A more general point follows, namely that each authority needs to be clear about its own values in affording the challenge of setting priorities. Unless values are made explicit, decisions will tend to be inconsistent, thereby making it difficult to allocate resources in a way which enables local needs to be met more effectively.

One approach to this is for authorities to take time out to discuss the values that are important to different members and to explore areas of agreement and disagreement. The King's Fund College is assisting a number of authorities in this way, in some cases making use of the priority rankings developed in Oregon (see Note 8, Chapter 1). A report will be issued later in 1992 on the results of this work.

Integration

Effective purchasing and thus priority setting and resource allocation will require integration between purchasing authorities, and integration between relevant disciplines. Although there is no single model for inter-authority arrangements for purchasing, a number of alternatives have been or are being tried (see Note 1). Effective rationing will require authorities to understand the spectrum of care from primary and community care to secondary and tertiary care. Only by discussion and agreement between DHAs, FHSAs and fund holding GPs will a workable spectrum be developed.

For this to be achieved careful integration of disciplines relevant to resource allocation will be required. This will include an understanding of the economics of

healthcare (particularly cost effectiveness and cost/quality considerations), medicine and other health disciplines, moral philosophy and epidemiology. Whilst speaking to a core theme, the four expert witnesses raised quite different considerations from their individual perspectives. The economist is concerned predominantly with efficiency and cost effectiveness; the epidemiologist with who benefits, why and when; the moral philosopher is concerned with the balance of equity and efficiency and with distributive justice; and the journalist (and perhaps lay person) is concerned to ensure that the process is robust and straightforward and that lay people in the community understand the issues and are prepared to 'delegate upwards' to an Authority which they perceive as accountable. Only by achieving this integration of perspectives can rationing be made acceptable, understood and 'owned' by statutory agencies, clinicians, provider managements and by the general public.

Evaluation

The third group of issues requiring further discussion can be grouped under the title of 'evaluation'. There is inevitably overlap between the three areas described — accountability, integration and evaluation as suggested in figure 3. An underlying tension is that between maximisation of utility and ensuring medical and health care progress. A simple maximisation philosophy will generate the 'greatest good for the largest number' and might act counter to innovation.

However, the other end of that spectrum is not acceptable — excellent services for a few and poor services for the majority. Authorities will be required to balance resource investment for improvements between acute and community health services, illness prevention and health promotion. Achieving this balance will not be easy and authorities may want to call on 'outside' experts to provide additional and complementary perspectives to those of the authority's own staff.

Basic health services as well as innovations must be evaluated regularly which suggests the need for audit and utilisation review systems. Authorities will thus be required to negotiate with provider clinicians on the information which is to be made available publicly, possibly within contracts, on which purchasers can review provider performance. Deciding on what information is relevant and how it can best be considered by the authority requires further work. One danger is information overload; another that too little relevant information is presented in a digestible way.

Authorities should not be shy of admitting uncertainty about the best course of action, nor slow to develop simple, analytic techniques which offer small steps towards improved resource allocation procedures. Even the most complex systems are made up of simple components. Identifying what information is most needed in the early stages will assist in defining later information requirements

and help to develop the overall process. Authorities must make use of external bodies such as the Audit Commission and National Audit office to draw on the evaluation of change and alternative methods of provision (a good example of this is the role the Audit Commission played in promoting day surgery).

BOX 17

ACTION

1. Consult widely with local people
2. Ensure the availability of expertise in assessing need and effectiveness of evidence
3. Achieve accountability through balancing the four pressures — imposed targets, new evidence, community need, and provider expectations
4. Develop evaluation systems for existing services *and* new developments
5. Devote more authority time to understanding the complexity of resource allocation
6. Review audit material and available cost and benefit information
7. Instigate a thorough review of health promotion activity
8. Develop a true 'purchaser' strategy rather than marginal change/ provider based strategy
9. Establish improved links with GPs/FHSA to develop protocols and guidelines
10. Campaign for more resources and inform politicians of the issues

PURCHASING DILEMMAS: SUMMARY

DILEMMA	DESCRIPTION	LESSON	ACTION
I	Expert versus lay opinion	Understanding lay (community) opinion is essential especially for certain conditions	• Set up appropriate mechanisms to (a) inform community (b) achieve public participation
II	Individual need versus institutional response	Individual need must be carefully assessed in the context of community requirements.	• Develop guidelines and protocols which give clinicians as wide discretion as possible with individual patients within a resource allocation strategy.
III	Acute versus community or primary care	More community services should be provided without starving acute services of resources for innovation.	• Evaluate existing and new services carefully, compare to demand and outcome/ effectiveness information.
IV	Intervention versus prevention	Prevention has not yet been shown to work in some conditions. Investment in both intervention and prevention must be carefully balanced.	• Instigate a thorough review of health promotion & prevention. • Target health promotion carefully.
V	Horizontal versus vertical equity	Very hard and complex. Small steps needed. Look at individual conditions where some progress is possible.	• Devote authority time to understanding complexity. • Develop priority setting procedures from simple building blocks.
VI	Quality of life versus saving life	Measuring quality of life is difficult. Throws up serious ethical dilemmas. QALYs must be used cautiously.	• Consult widely with local people • Raise awareness of ethical issues. • Develop effectiveness measures.
VII	Enhance inputs versus healthgain outcomes	Must shift from input driven services to setting healthgain objectives.	• Review audit and cost benefit information. • Ensure availability of expertise.

Action

The lessons and issues raised provide pointers to further action (Box 17). Some are already underway in a number of authorities — for example, in response to the recent 'Local Voices' project paper. Others require a longer and more detailed consideration by individual authorities. Many of the action items relate to the seven dilemmas posed at the beginning of the seminar. Box 18 suggests the action which may be helpful in resolving those dilemmas.

1. *Consultation*

Authorities must consult widely with local people. 'Local Voices' encourages authorities to consider a wide range of approaches to such consultation and public participation. Many resource allocation and health care investment decisions have social, political and ethical implications, some of which have particular relevance for local communities. The example provided in this publication of services to elderly people is instructive. The community has a right to influence major decisions such as those which may remove the availability of heroic interventions in severely disabling conditions.

2. *Availability of Expertise*

Setting priorities in health care resource allocation requires careful assessment of health and illness needs in the community and evidence of effectiveness of health care interventions. Some information will be available locally but much will not. Authorities will have to draw on a wide range of sources including academic organisations and other health authorities in order to develop the best local response.

3. *Accountability*

Accountability requires authorities to balance the four pressures described above. Those pressures are the 'givens' from the Department of Health and regional health authorities; demands from professional groups and provider organisations; pressure from public participation and consultation; and implications for change from the 'new' evidence. Taken together this requires authorities to balance potentially complex and politically sensitive considerations. Decisions will however remain far from scientifically rational. The evidence is incomplete and the data is complex. In a perfect world, rival interventions or approaches would compete on an 'even playing field,' However, it is inevitable that for some time to come, purchasing decisions will be the best possible taking account of social, political, organisational, economic and ethical concerns.

4. *Evaluation*

Evaluation of service effectiveness, local outcomes and achievements, particularly of innovation, will be essential. No authority will be able to assess every feature of their investment strategy. Straightforward choices must be made year on year as to those services which will be reviewed and considered in some detail. Over time however authorities may build up a rich picture of the extent to which the service meets local needs in an effective and efficient way.

5. *Understanding Complexity*

One clear lesson from the seminar was that purchaser authorities must spend more time in discussion and consideration of resource allocation issues. Because of the potentially complex and far reaching nature of these concerns, authorities will have to devote more effort to understanding that complexity.

Authorities should tackle rationing and priority setting in a straightforward, simple but not simplistic way. This has five key ingredients:

1. define the resource allocation questions carefully;

2. compare like with like as far as possible;

3. ensure that health gain targets are realistic and achievable in relation to resources available.

4. develop simple methods initially and reduce complexity as far as possible;

5. build a comprehensive approach by putting together a number of simple components

Authorities may need to devote more time to these issues particularly training and support of non-executive members in the wider ramifications of rationing health care and in making explicit resource allocation decisions.

6. *Audit*

Audit and utilisation information must be considered in the context of contracting. Not all provider clinicians will wish to share all medical and clinical audit information with purchasers. Purchasers must negotiate with providers on the detailed information required to monitor contracts together with the additional information necessary to make effective purchasing decisions for the

future. Purchasing authorities will have to talk directly to clinicians as well as provider managements.

7. *Review Health Promotion*

A significant theme of the seminar was the balance of prevention and intervention. Health promotion activity will be essential to reducing costs in future. Unfortunately at present there is insufficient evidence that preventive strategies are working and there is a huge backlog of people with disease requiring intervention. Careful targetting of health promotion activity may be necessary if long run intervention costs are to be reduced.

8. *Purchaser Strategy*

Planning in the 'old' NHS was usually based on marginal change. The extent of that change from year to year was often very small. Purchasers must now develop their own strategy incorporating a renewed vision of health and health care. This will mean authorities developing an assertive approach to provider demands whilst at the same time building on provider perceptions of need and intervention requirements.

9. *Links between Authorities*

In order to develop an effective purchasing strategy, district health authorities and family health service authorities must develop close working alliances both to pool expertise and to generate an appropriate primary, secondary and community health service balance. GPs community groups as well as local authorities must be included in this discussion. Authorities will begin to develop protocols and guidelines in conjunction with GPs which will describe the boundaries of delegated responsibility to provider clinicians.

10. *Campaigning for More Resources*

Health authorities have delegated responsibility to spend the resources made available to them by central government wisely and efficiently to meet local needs. Authorities may not always believe those resources to be adequate and it falls to authorities to campaign for more resources and to inform politicians of the issues.

Notes to Chapter 6

1. Inter-authority arrangements are described in 'Purchasing Together' (written by Chris Ham and Chris Heginbotham) published by the King's Fund College, 1991.

Annex I List of Participants

Southampton and South West Hampshire Health Authority

Chairman:
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Non Executive Members:
Mr J B Burdekin
Mrs I F Candy
Mr D Noddings
Prof I C S Normand
Rev B Strevens
Executive Members
Mr P A Shaw, Chief Executive
Dr N A Allen, Director of Public Health
Mr A M Cochrane, Director of Policy & Business Management
Mr L Judd, Director of Planning & Contracts
Mr I V Marriott, Director of Finance

Staff from the Purchasing Team

Mrs M Mitchell, Public Relations Officer
Mr J I Richards, Policy & Business Manager

Hampshire Family Health Services Authority

Mr T Clark

Community Health Council:

Mrs M Robinson

Expert Witnesses:

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Dr D Patterson, Consultant Physician and Cardiologist, Bloomsbury & Islington Health Authority
Mr J L Monro, Consultant Cardiothoracic Surgeon, Wessex Cardiothoracic Unit

Case Study B
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Professor R Briggs, Consultant Physician, Southampton and South West Hampshire Health Authority
Dr C Godber, Consultant Psychogeriatrician, Southampton and South West Hampshire Health Authority
Mr D Walden, Director, Age Concern (Hampshire)
Dr Bob Walton, a local General Practitioner

Case Study C

Dr R Chadwick, Lecturer in Philosophy, University College of Wales, Cardiff
Dr R Smith, Editor, British Medical Journal
Dr J Smith, Consultant in Public Health Medicine, Southampton and South West Hampshire Health Authority
Dr N Wells, Health Economist, Glaxo Pharmaceuticals

Glaxo Pharmaceuticals Limited

Ms A Pullen
Mr J Starzewski

Facilitators:

Dr C Ham, King's Fund College
Mr C Heginbotham, King's Fund College

OVERALL PLAN OF THREE CASE STUDIES

Case Study	Descriptions Main Issues (Dilemmas)	Subsidiary Dilemmas	Tests	Process Model	Output	
A	Coronary care	IV, VI and 'Vertical' equity	III	Expert judgement	'Fishbowl discussion of experts	Draft criteria plus specific points
B	Elderly	I, III, IV	VI, II	Expert vs lay opinion	Meeting of simulated contracts planning	Draft criteria plus specific points
C	All care groups	V, VII IV	Bound as 'peoples champion'	Members of Board receive evidence as consensus panel	a. Criteria b. Insights c. Issues	

Annex 2
Case Study A: Coronary Heart Disease

CORONARY HEART DISEASE: APPROXIMATE TREATMENT COSTS FOR SOUTHAMPTON & SOUTH WEST HAMPSHIRE HEALTH AUTHORITY

	Treatment Description	Activity 1991/92	Approximate Cost per Treatment Episode £	Current Total Expenditure £	%
1.	CABG (mild and severe angina	130	6000	780,000	51
2.	Pacemaker implant	130	2700	300,000	21
3.	PTCA (angioplasty)	100	2500	250,000	16
4.	Thrombolytic therapy	150	600	90,000	6
5.	Screening for cholesterol	12,000 tests	7 per test	80,000	5
6.	Screening and advice to stop smoking		60	5,000 (Health promotion services & 10,000 (General Practitioners)	1
	Total			1,515,000	100

Note: To put the above in a broader context, the overall block contract with Southampton University Hospitals for this District provides for an indicative workload of approximately 1100 finished consultant episodes and 2500 outpatient attendances at approximate cost of £2,300,000 per annum in 1991/92.

Coronary heart disease is a complex subject for consideration as there are a number of preventive strategies and intervention treatments available. Those strategies and treatments overlap and inter-link in complex ways. Ten years ago the balance of coronary artery bypass graft and medical management may have

pointed to minimum surgical intervention, however the past decade has seen remarkable improvements in surgical technique (1).

The Welsh Health Planning Forum protocol on cardiovascular disease shows a wide range of possible treatments in relation to types of cardiovascular problems. (2) Unfortunately insufficient data is available to be able to state categorically which treatments are most appropriate under which circumstances. It must be remembered at all times that patients present often with more than one disorder or problem which may complicate both the diagnosis and treatment. The literature on coronary heart disease is vast; in preparing these papers it has only been possible to draw on some of the most important recent papers.

One of the key issues is the balance of primary and secondary prevention compared to surgical intervention. Primary prevention is usually taken to mean strategies for education and healthy lifestyles which aim to target individuals at risk. Secondary prevention is concerned at targetting individuals at risk even if they have not yet developed some form of significant disorder; and tertiary prevention is that which intervenes early in the potential process of the disease in an effort to limit likely damage.

Primary prevention thus includes education to encourage people to stop smoking and to develop health lifestyles, including taking exercise, reducing saturated fat intake and so forth (3). Secondary prevention includes strategies for identifying people at risk, for example those with a history of coronary heart disease in the family or who show high cholesterol levels (4).

Tertiary prevention suggests intervention to reduce cholesterol levels or blood lipid levels, and may incorporate thrombolytic treatments or prophylactic interventions, such as regular use of drugs to reduce blood pressure.

Treatment for reducing blood lipid levels, or minimising hypertension, are often used in combination with surgical techniques such as coronary artery bypass graft, angioplasty, heart transplant and pacemaker implant. One study considered the effect of delaying elective intervention for CABG or angioplasty compared to using drugs to remove blood clots (thrombolysis) (5). The study found little difference in the outcomes between intervention surgically and the more conservative care using thrombolytic treatment. Their conclusion was that for most patients given thrombolytic treatments for heart attack (acute myocardial infarction), expensive diagnostic testing followed by surgical intervention is only required when there are clear indications that surgery was necessary. In other words the study appeared to indicate that angioplasty or CABG should not be the treatment of immediate choice unless clinical indications were noted.

However, early thrombolytic treatment can improve significantly what has been called 'quality adjusted life expectancy' (6). Where clinically indicated as suggested in the previous paragraph, CABG surgery increased patients quality of life substantially. The proportion of patients with chest pains fell dramatically and the majority of the patients maintained that their condition was either completely better or definitely improved following surgery (7). Nonetheless, a recent Audit in Trent R.H.A. found that about half of all angiographies (specialist diagnostic testing) were entirely appropriate to the patients condition but over a fifth were deemed inappropriate. (8) CABG surgery, too, was considered inappropriate in a sixth of cases. Although these figures cannot of course be applied directly to Southampton — they were a specific audit in a particular area — it is worth noting a tendency to use surgery even when it is not clinically indicated. This is an essential point in relation to the increased CABG purchasing level agreed this year by Southampton and South West Hampshire DHA.

During the 1980s in the USA bypass surgery led to a higher mortality than angioplasty, mainly in the peri-operative period. (9) On the other hand readmissions for angioplasty and bypass for patients who had had angioplasty initially was significantly higher than those readmitted who had had a bypass during first admission. In other words whilst bypass may have a higher immediate peri-operative mortality it is likely to provide a longer lasting solution than angioplasty; and angioplasty would appear to require more frequent continuing interventions. This is not surprising as CABG replaces the coronary arteries, whereas angioplasty stretches those arteries to enable the blood to flow more freely. Such stretching of itself may lead to strain in the artery wall and thus to mechanical failure.

It is worth noting the interrelationship between this case study and case study B. Many patients requiring some form of treatment for coronary heart disease are over 65. As the number of elderly people increases during the 1990s it will be necessary to reappraise the provision of CHD services. Recent recommendations by a national working party suggest the following:

1. Purchasing authorities must take account of the steadily increasing number of elderly people requiring access to specialist cardiological services;

2. There is a need for adequate, non-invasive diagnostic facilities, regardless of age, and cardiac pacemaking and thrombolytic therapy should be available;

3. Invasive cardiological investigation eg: cardiac catheterisation, should be made available for patients over 70 years of age;

4. Angioplasty should be considered for elderly patients with CHD which is unresponsive to medical treatment. (10)

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GLOSSARY OF TERMS

Angina — Sense of suffocation or constriction — angina pectoris — severe but temporary attack of cardiac pain which may radiate to the arms. Results from **myorcardial ischaemia**. Often the attack is induced by exercise (angina of effort).

Angio-cardiography — demonstration of the chambers of the heart and great vessels after injection of an opaque medium.

Angioplasty — plastic surgery of blood vessels — in percutaneous transluminal coronary angioplasty (PTCA), a balloon is passed into a stenosed coronary artery and inflated with contrast medium; it presses the atheroma against the vessel wall, thereby increasing the lumen.

Coronary — crown-like; encircling, as of a vessel or nerve. Coronary arteries — those supplying the heart, the first pair to be given off by the aorta as it leaves the left ventricle. Spasm or narrowing of these vessels produces angina pectoris. Coronary thrombosis — occlusion of a coronary vessel by a clot of blood. The area deprived of blood becomes necrotic and is called an infarct: ischaemic heart disease, myorcardial infarction.

Lumen — the space inside a tubular structure.

Myocardial Infarction — death of a part of the myocardium from deprivation of blood. The deprived tissue becomes necrotic and requires time for healing. The patient experiences a 'heart attack' with sudden intense chest pain which may radiate to arms and jaws. Because of the danger of ventricular fibrillation many patients are nursed in a coronary care or intensive care unit.

Stenosis — narrowing — **stenoses, stenotic**

Thrombolytic — disintegration of a blood clot — **thrombolysis** — thrombolytic therapy — the attempted removal of performed intravascular fibrin occlusions using fibrinolytic agents.

Thrombosis — the intravascular formation of a blood clot

Valvo-plasty — a plastic operation on a valve, usually reserved for the heart.

Annex 3
Case Study B: Illustrative Case of Severe Stroke

SCENARIO

1. Mr Jones is a 76 year old Hythe man with a history of a heart attack three years previously, a transient stroke affecting his speech and power on the right side 1 year ago and gradual loss of memory in the last 6 months. He lives with his wife who is partly disabled by rheumatoid arthritis which prevents any heavy lifting. She woke one morning to find him breathing stentoriously and could not rouse him. When the GP called he found signs of a stroke with no power apparent in the right arm or leg and obvious difficulty in swallowing saliva. By this time their daughter had been contacted and said she would stay with her mother to give support for a couple of days.

2. A number of intervention/treatment options are available:

Option 1: Current DHA purchasing arrangements admission, intervention, 'slow stream rehabilitation, residential care.

Option 1a: As 1 but after 1st April 1993 under new community care arrangements.

Option 1b: As 1 and 2, but a year further after new community care procedures.

Option 2: Proposed new DHA strategy to purchase more acute medical care from the Community Unit small hospitals plus intensive district nursing in patient's home.

OPTION 1. Outcome on current care arrangements

3. Because of the history of previous cardio and cerebrovascular disease the GP approached the Geriatric Unit requesting an urgent admission (the patient being unsuitable for admission to Hythe Hospital). As the patient was under 85 and not known to the Geriatric Unit they declined the admission and the GP was referred to the general medical team doctor. Because he knew beds were tight the GP played down the history of previous stroke and dementia and the fact that the patient's wife would be unable to care for him in the likely event of a poor recover; nor did it seem politic to ask for admission for palliative care only. On admission the patient was diagnosed as having a dense right hemiplegia with reduced consciousness level and inability to swallow (poor prognostic signs). He was started on intravenous (I/V) fluids, catheterised and monitored as for any case of lowered consciousness.

4. He remained variably drowsy and unable to swallow over the next 48 hours, was irritable and uncooperative and spoke incoherently. CT scan revealed a left cerebral infarction and chest X-ray signs of an early chest infection which was treated with intravenous antibiotics. The next few days saw a gradual improvement in conscious level but continued inability to swallow. He was switched from intravenous fluids to a nasogastric tube. Swallowing improved slowly in the next 2 weeks but he was still prone to choke and developed a further chest infection which needed further antibiotics.

5. He was still unable to make himself understood and it was unclear if he could understand what was said to him, but he recognised his wife and seemed distressed during and after her visits.

6. After another 2 weeks he was able to swallow reasonably but had no power in the right arm and leg and was often aggressive when handled by the nurses. He was referred to the Geriatrician who reckoned that the prognosis for recovery of power and speech was poor and arranged for his transfer for "slow stream" rehabilitation bed at SGH.

7. At Ashurst his catheter was removed with partial return of continence. He was referred to the Psychogeriatrician because of his disturbed behaviour and diagnosed as depressed and substantially demented. There was some improvement with antidepressants but after another 3 months he was still variably uncooperative, often tearful (especially after visits by his wife) and showed very little power on the right side. He was clearly not going to make it home (to his wife's obvious distress) and was referred to a Nursing Home in Brockenhurst (there being none in the Hythe area which took people on DSS funding), and even then some "topping up" was needed by the family. He remained in the Home having weekly visits from his wife for a further 2 years before having another, fatal stroke.

OPTION 1A Outcome on same DHA purchasing policy vis-à-vis the acute and community units but with the new regulations operating after April 1993

8. The story reads the same until 3 months after the move to Ashurst Hospital. The patient was considered unsuitable for a "domiciliary support package" in view of his sever physical disability aggression, partial incontinence, tendency to wriggle and fall out of a chair, and his wife's home carers and district nurses. He was assessed as needing a Nursing Home placement and had to wait a further 3 months for a vacancy in a Home with which the DHA had a contract. He survived 21 months in the Home.

OPTION 1B Outcome based on the same organisational arrangements for further on after April 1993 with longer delays in nursing and rest home placements leading to a longer stay in Ashurst, also a longer wait to be admitted and bed blocking recurring at SGH

9. The story reads the same as Option 1 and 1a but with the following differences:

9.1 GP has much more difficulty getting the patient into the medical ward in the fist place.

9.2 The general physician referred the patient to the geriatrician on the second day with the request simply "to take the patient over".

9.3 The patient waited 6 weeks on the medical ward before the move to Ashurst took place.

9.4 The patient remained 9 months in Ashurst (6 months of this time) on the waiting list for a Nursing Home place).

9.5 He survived 18 months in the Nursing Home.

OPTION 2 Post April 1993 but with DHA purchasing strategy altered to purchase more acute medical care for the elderly (including stroke care) from the community unit based in its small hospitals, and more intensive district nursing care in patients' home.

10. For stroke care this would locate acute care for A and E cases, first time strokes in younger people and cases with uncertain diagnosis in the DGH. Home or small hospital care would be the choice either for (i) mild stroke or (ii) very severe strokes in patients with known major vascular disease or advanced age. After the acute phase patients would receive rehabilitation in Ashurst, Moorgreen, a day hospital or at home (as indicated). The approach adopted here is one of "low-tech" management of the severe strokes in those with established vascular disease (i.e. those whose short-term survival could only be achieved with "high-tech" care would contain a high proportion of poor long-term outcome in terms of severe residual disability and poor quality of life). In such cases treatment at or near home with emphasis on comfort, dignity and pleasant surroundings (for patient and family) would have a much higher priority.

11. GP assesses patient as appropriate for home care or admission to Hythe Hospital (i.e. relatively poor prognosis in terms of short-term survival and prospect for long-term recovery of muscle power and speech). GP offers wife choice of trial of care at home with District Nurse backup subject to daily review and transfer to Hythe Hospital if appropriate in the light of his progress.

OPTION 2A

12. Wife opts for home care with daughter able to be with her. District Nurse assesses needs and supplies incontinence aids, ripple mattress, arranges timing of subsequent visits and gives emergency call number. No attempt at I/V or nasogastric feeding at this point. GP and District Nurse review daily. If patient deteriorates and wife selects to continue home care supportive treatment, palliation of distress or discomfort (but no artificial feeding or antibiotics) would be the priority. if improvement occurs and more intensive intervention is indicated (e.g. nasogastric feeding, treatment for aspiration problems, early physiotherapy) patient could be transferred to Hythe Hospital, Lymington Hospital or the General Hospital.

OPTION 2B

13. Wife opts for admission to Hythe Hospital. Basic nursing care would be given for first 24-48 hours. If patient was deteriorating in this time a palliative approach would be taken. If he started to pick up he would need I/V or nasogastric feeding and commencement of physiotherapy. From this point on treatment would be likely to follow similar lines to that in the medical ward at Southampton General Hospital (but with a greater readiness to revert to palliative treatment if complications such as aspiration pneumonia occurred against the background of continuing dense paralysis and speech and swallowing problems). The geriatrician would be asked to see the patient on his weekly visit to Hythe Hospital in order to clarify the prognosis and set out a plan for subsequent rehabilitation. If the eventual destination was to be a Nursing Home but a period of rehabilitation in Ashurst Hospital was indicated, the patient might return to Hythe Hospital once that period was over.

14. In both 2a) and 2b) the greater involvement of the family in the early care, the proximity of the Hospital to the home and the greater investment in the District Nursing service, might tilt the balance substantially towards the patient being discharged back home rather than to a Nursing Home.

MEDICAL, ETHICAL & ORGANSIATION ISSUES RAISED BY THIS CASE

Medical

15. Patients with the most severe strokes are likely to make the worst recoveries in terms of long term function. Unconsciousness and swallowing difficulties are bad prognostic features and severe speech problems add to the frustration if recovery is poor.

16. Those with the worst strokes will be more likely to die in the first week and those who are pulled through that phase by intensive treatment will be among the most disabled long-term survivors.

17. The quality of long-term survival will be worse amongst patients who already had major disabilities such as previous strokes, dementia or poor mobility due to arthritis.

18. Provided that general supportive measures such as avoiding bed sores, maintaining some passive movement of the paralysed muscles and avoiding choking are carried out the patient's outcome is not going to be greatly affected if hydration by I/V or nasogastric feeding is delayed 24-28 hours until prognostic features are clearer. After 48 hours adequate nutrition and hydration would be crucial to optimal recovery and artificial feeding would be appropriate if recovery was then the objective.

Medico-ethical

19. Apart from the sudden death by stroke of young, apparently healthy people (or those in whom subsequent strokes could be avoided by heart surgery, stopping the pill etc). The main disasters of stroke disease are those who survive with severe disability especially if coupled with speech problems or dementia. This is even more the case if the long-term outcome involves care in an institution and or separation from a spouse.

20. In this context the care of severe strokes need not automatically involve a high-tech medical approach. In many cases it is preferable for a patient and family that the initial approach places priority on dignity and comfort and that a move to more active medical intervention and rehabilitation is delayed until there are indications that spontaneous recovery is occurring.

Organisational

21. Stroke care is currently based on the acute curative medical model in which the need for acute hospital care is based on the gravity of presentation rather than expected responses to treatment.

This means that many patients with poor prognosis are overtreated and survive to a future of poor quality but of high cost in terms of dependency (or die uncomfortably whilst the acute medical team is struggling unsuccessfully to achieve that survival). Others with "milder" strokes may not be deemed candidates for specialist help and develop secondary disabilities for want of expert rehabilitation.

22. It may be advisable therefore to shift the focus of acute care of strokes away from the DGH setting except for:

22.1 Presentations directly through A & E.

22.2 Unusual presentations where more detailed investigation is needed.

23. Increase in the activity in the small hospitals and greater investment in domiciliary nursing and physiotherapy could then achieve a better service for those with milder strokes (who often fare badly under the present system) and more appropriate care for the most severe strokes. Within the city it would be possible to increase the Geriatric Units' share of the case load of those strokes requiring hospital care. The major priorities within the Geriatric Unit would otherwise be to provide assessment (medical, physiotherapy and occupational therapy) and availability of rehabilitation at Moorgreen, Ashurst, Lymington and the day hospitals.

Cost

24. The DHA's purchasing strategy could be to concentrate expenditure on interventions with demonstrated efficiency (i.e. in terms of improving subsequent function and quality of life for victims of strokes). With a limited budget it is important to examine critically interventions which are less affected by those criteria or which by producing low quality, high dependency survival draw financial resources away from the "desired interventions". To varying degrees doctors have had to make their judgements (e.g.; in areas such as the management of chronic renal failure, dementia and multiple congenital disorders) in trying to achieve a balance between what the services can afford to tackle and what is in

the best interest of the individual patient. For GP's faced with acute illness in already disabled elderly people the primary need is often for 24 hour nursing care rather than curative medical treatment. The DGH model of patient care however assumes that the latter is the reason for admission and will often proceed with intervention of the counterproductive type mentioned above.

25. If the DHA was to increase its investment in rehabilitation, domiciliary nursing and care in small hospitals and geriatric units, it would be likely to achieve a lower survival rate for severe strokes but better average functional returns in those surviving and in those with milder strokes. The cost of the acute element of care would be substantially less (by virtue of lower unit costs outside the DGH medical units). The amount of long-term nursing (home) care needing to be funded by the DHA would also be less, (i.e. more of the poor quality survivors would die in the first few days). This could be quantified in terms of the number of severe stroke admissions at present and the prevalence of different severities of stroke found in visiting surveys. It would be possible to identify the number of severely disabled stroke survivors in Nursing Homes in the district at present. At present these are not funded by the DHA — but might be after 1993 when the funding picture changes.

Annex 4
Case Study C: All Care Groups

SUPPLEMENTARY INFORMATION

Case Study C: All Care Groups

HEALTH GAIN TARGETS: ESTIMATED COSTS

Target No.	£000
1	50
2	100
3	65
4	60
5	750
6	10
7	200
8	85
9	250
10	100
11	30
12	50
13	20
14	15
15	75

CASE STUDY C: ALL CARE GROUPS

Current distribution of the Health Authority's resources

Care group	£m	%
Health promotion	0.4	—
Adult general acute	50.0	40
Elderly	42.0	33
Paediatrics/neonates	18.0	15
Mental health	8.0	7
Mental handicap	6.0	5
Total	124.4	100

Note:

1. Above figures are estimates only.

2. Health promotion figure excludes the contribution by professionals in other care groups.

3. Elderly includes an estimate of the proportion of other care groups devoted to care of the elderly. (See Case Study B for further analysis).

4. Mental health and mental handicap figures exclude an estimate of the services to the elderly in particular.

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