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**Advancing Health in NSW:
Planning in an economic framework**

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TABLE OF CONTENTS

FOREWORD

INTRODUCTION	1
THE PLANNING PROBLEM	3
PLANNING IN AN ECONOMIC FRAMEWORK	12
PROGRAM BUDGETING IN PRACTICE: CASE STUDIES FROM THE UK	20
PROGRAM BUDGETING IN AUSTRALIA	26
CONCLUSION	28
REFERENCES	29

FOREWORD

Health services planners have not for the most part used economic approaches. The production of the two 'Goals and Targets' documents by the NSW Department of Health and the Commonwealth Department of Health, Housing and Community Services respectively has further stimulated our interest in the role of economic analysis in the planning of health services. This led to a one-day workshop on the Economics of Health Service Planning convened by CHERE and co-ordinated by Professor Mooney. The workshop was attended by over forty planners representing each of the NSW Health Areas and Regions. This discussion paper summarises the material presented at that workshop.

INTRODUCTION

Health service planners face an unenviable problem. They must decide how to organise the delivery of health services in order to meet changing disease patterns and must do so with rapidly developing technologies, an ageing population, rising community expectations and increasing pressure from health care professionals all within an increasingly tight budget. In short, given the limited resources available to health care, they must decide what services ought to be provided for whom, and how, when and where these services should be organised. Whilst there is one school of thought that the planning problem would be solved if only there were more money, more realistic commentators recognise that the extent of potentially beneficial health services will always outstrip the community's willingness (let alone ability) to pay for health care.

This suggests that the planning problem is perennial. Choices will always have to be made about what, how, where, when and at whom should health care resources be directed. Therefore most planners are now familiar with the concepts of efficiency and opportunity cost. These concepts are derived from economics which is described as the study of choice under conditions of resource scarcity.

It would seem that economists and health service planners would have much in common. Yet surveys both in Australia and overseas (Ross 1992, Ludbrook & Mooney 1984) show this not to be the case. Planners and decision makers are not enthusiastic users of economic methods. They are put off by the economist's use of jargon, the need to make decisions quickly and the imperative to take several factors into account, not just efficiency. All too often the data required or the economics expertise are not available. Our objective in this paper is to address these difficulties. First, we clarify the meaning of several key economic concepts without the use of jargon. Second, we outline a framework for putting these concepts into planning practice. Third, we discuss how to confront the problems of lack of data and expertise.

The Discussion Paper is set out as follows. In section 2, the economic problem facing health service planners and the relevance of key economic concepts are described. In

section 3, an economic framework, which provides a practical means by which economic concepts can be incorporated into health service planning, is outlined. In section 4, experience with the use of this framework in the United Kingdom is discussed to show its practical applications as well as its limitations. In section 5, the opportunities (and obstacles) to introducing the economic approach to planning in Australia are discussed. Finally, conclusions are drawn in section 6.

THE PLANNING PROBLEM

Defining the problem

The main question facing health service planners now is how to change the pattern of health services within existing budget limits. When resources for health care were increasing the planning problem was what new or expanded services should be provided. However, these questions can be seen as part of the broader issue which is which sorts of health care should be provided for whom and, how, when, and where should these health services be delivered (Evans 1984).

At the heart of this issue is the relationship between what goes into the production of health care (resource inputs) and what comes out (outputs). The inputs into health care include the work time of doctors, nurses, and other health care workers, the equipment they use, and the buildings they work in. These are combined to produce the output of the health care sector. The outputs are episodes of care, such as the number of hospital separations in a given time period described by case-mix or completed episodes of community care. These outputs are distinct from the outcomes of health care, which are the changes in health or welfare which result from an individual's use of health services (Hall et al. 1993).

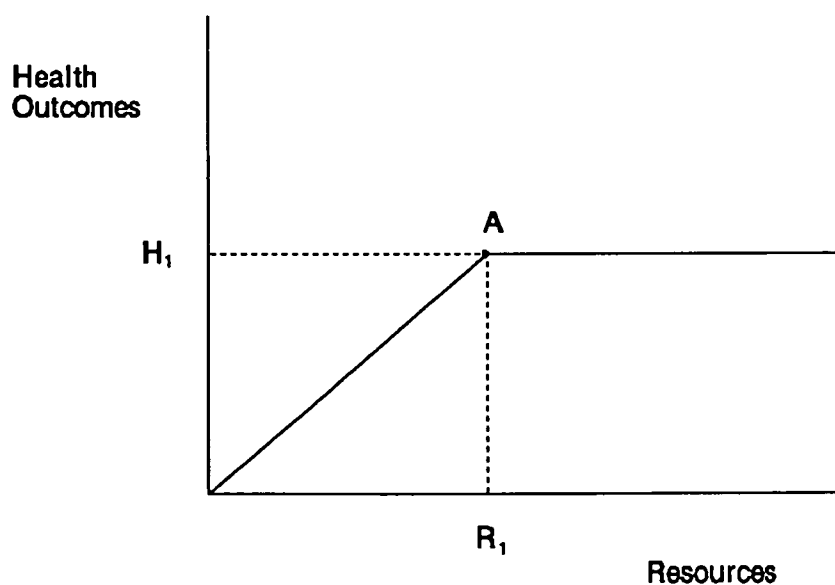
Neither resource inputs nor outputs are of interest in themselves. Inputs are of interest because budgets (and, more importantly, the resources available) are limited. This gives rise to the economic notion of opportunity cost. The allocation of resources to one service means that another service must do without. In making the decision to allocate resources one must forgo the benefits of alternative uses. The opportunity cost of the chosen allocation is equal to the value of the outcomes of the most favoured of these alternatives. The economic problem is how to allocate scarce resources so that the value of the outcomes is maximised.

Outputs are of interest because their production incurs (opportunity) costs and yields health outcomes. Outputs are not valued in themselves (who wants a week in intensive care?) Here, economic evaluation, defined as '*the comparative analysis of alternative*

courses of action in terms of both their costs and consequences' (Drummond et al, 1987, p8), plays an essential role. As cost represents forgone benefits, economic evaluation is concerned with comparing the health outcomes of doing one thing with the outcomes that might be achieved if something else were done instead. The overall goal is to maximise health outcomes within the budget constraint.

But how does all this relate to the planning question posed above? A once-popular answer to the planning problem was that resources should be allocated according to need. Need was measured crudely in terms of population numbers (or, worse, by past utilisation rates) and the planning debate focussed on the number of beds required to serve the population. Should it be 5.0 beds per 1000 population or 4.5 beds? Once the bed norms were configured, the specified resources were assumed to follow. Implicit in this approach is the assumption that all needs should be met. Therefore, the method runs into difficulties if there are not sufficient resources to meet all needs. This 'needs-based' response to the planning problem is shown in figure 1 (this discussion draws on Evans, 1984).

Figure 1: The needs based approach to planning



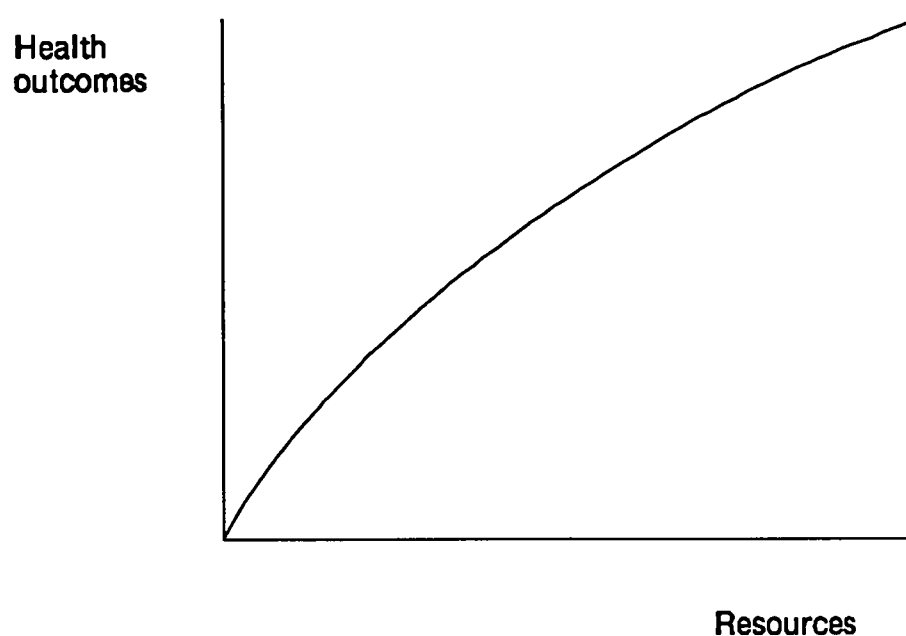
The horizontal axis shows the resources devoted to a particular service (in this example, the treatment of coronary artery disease). As more resources are provided, more 'needy'

patients are treated. On the vertical axis, the health outcome for the population obtained from these resources is shown. Increased resources yield increasing health outcomes as needs are met until some point (A) there all patients with coronary artery disease (CAD) have been treated. Beyond this point extra resources yield no more benefit because all need has been met.

The problem with this depiction is that it does not reflect reality very well. It ignores scarcity of resources and assumes that 'need' is absolute and constant, ie each patient who 'needs' CAD treatment receives the same benefit. An alternative depiction of the relationship recognises that needs can be prioritised and that there are costs associated with meeting 'needs'. Some health needs are life threatening, some impinge on quality of life severely, others less severely, while relief of the remainder would give some benefit though the needs are not in themselves particularly urgent. In this case, the benefit to be gained from meeting successive needs diminishes as 'needs' of lower priority are met.

This relationship is shown in figure 2. Successive increments of resources yield smaller and smaller gains in health improvement. The curve may flatten out eventually (at which point no further benefit can be gained). The answer to the planning problem posed earlier now depends on the relationship between resource use and outcomes achieved by the services which compete for resources. That is, the answer depends on the efficiency with which health service resources are employed. For the individual clinician faced by a particular patient, this point of no further benefit may never be apparent. Alternatively, the curve may never flatten out. There might be no point at which all needs can be met because there is always something extra that the health care system can do to improve health.

Figure 2: The 'more is always better' approach to planning



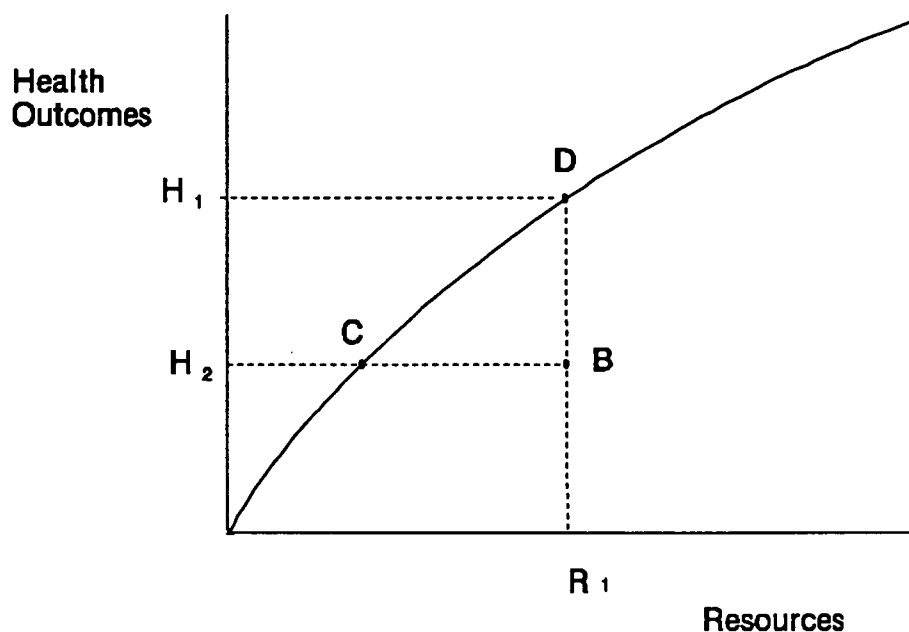
Imperatives for efficiency

The first imperative in getting the most out of scarce health care resources is to minimise waste (operational efficiency, see figure 3). If a coronary artery by-pass operation usually requires 3 hours of theatre time, 2 days high dependency care and 10 days on the ward then, other things being equal, it should not take 6 hours in theatre with 4 days in the high dependency ward and 20 days in the ward. The issue is one of not wasting resources. The relative costs of the resource inputs are not important at this stage.

A service which is operationally inefficient is operating inside the curve and is not producing sufficient outcome for the resource inputs it receives (at point B in figure 3). A reorganisation of the service would allow resources to be removed without reducing effectiveness (point C) or would mean that existing resources could be used to better effect (point D). While planners must be reassured that services are operationally efficient (i.e. that they are operating 'on the curve') the cause of operational inefficiency is often poor management rather than poor planning and we will not consider it further. The

exception to this is where bottle necks, caused by poor planning somewhere else in the patient management system, occur.

Figure 3: Operational efficiency



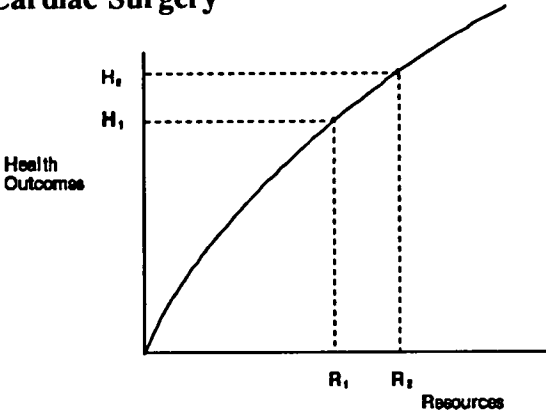
The second imperative is to minimise the cost of achieving a given outcome (technical efficiency). In many cases, there is more than one way of meeting a particular health need. Cancers, for example, may be treated by chemotherapy, surgery, radiotherapy or any permutation of these. Mortality from heart disease may be reduced either by cardiac surgery or by medical therapy. The technically efficient treatment to ease these health problems is the one which maximises the improvement in health outcome at minimum cost and so the relative costs of alternative ways of meeting the given need are important.

This is shown in figure 4 using the example of coronary artery disease (CAD) once again. For the sake of argument, both surgery and medication are assumed to reduce mortality but for each, the technical relationship between resource inputs and outcomes is different. If heart disease is targeted as a priority and additional funds are made available to address

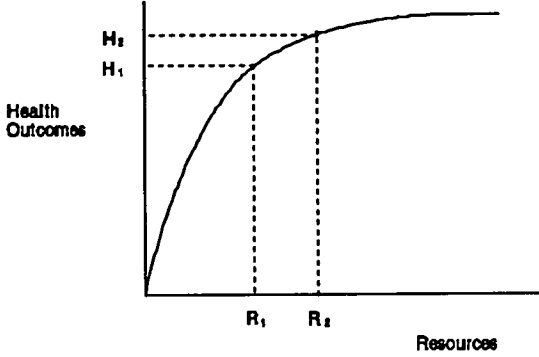
the problem, the money can either be spent on surgery (eg CABGs) or on medical therapy, or some combination of both. If the additional resources are allocated to CABGs, then the improvement in outcome is represented by the move from H_1 to H_2 (and similarly for medical therapy). As it is drawn here, CABGs are more effective and the gain is greater. The technically efficient solution is to invest the additional resources in CABGs.

Figure 4: Cost-effective treatment of CAD: increase in funding

Cardiac Surgery



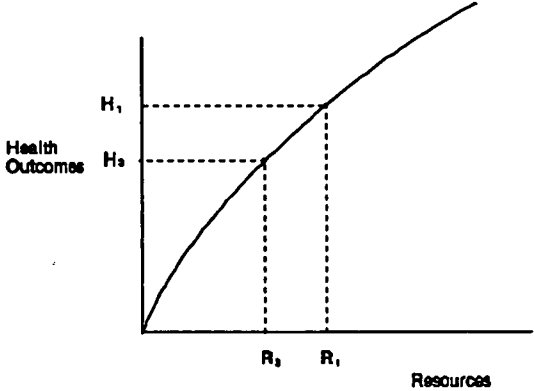
Medical treatment



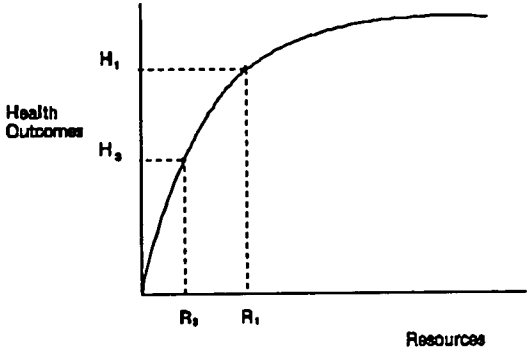
The same argument can be applied to reductions in funding (figure 5). From the same starting point, equal decrements in funding (R_1 to R_3) reduce health outcomes more in medical treatment. The technically efficient response to reductions in funding is to cut back on cardiac surgery.

Figure 5: Cost effective treatment of CAD: reduction in funding

Cardiac surgery



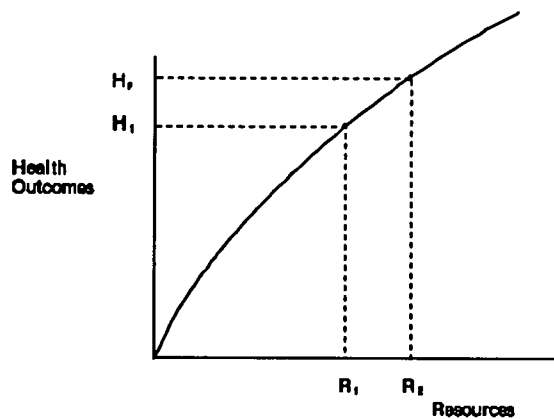
Medical treatment



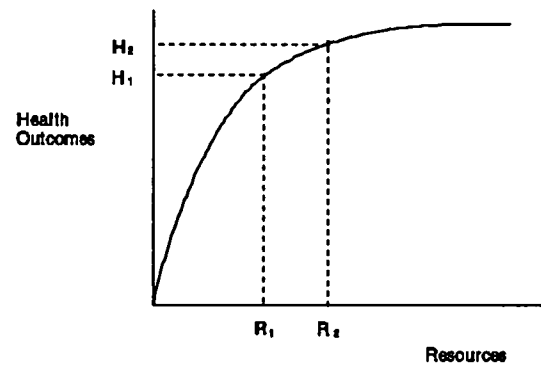
The third efficiency-imperative is with the mix of services which best meets the needs of the community. This is known as allocative or social efficiency. Rather than question how the problem of heart disease should be addressed, allocative efficiency is concerned with whether services to alleviate heart disease should receive priority for funding or whether scarce resources are better invested in meeting the needs of some other client group. The answer to this question depends on the values attached to the respective outcomes achieved by services which meet different health care needs. The meaning of allocative efficiency is illustrated in figure 6. Here, one diagram relates to treatment for heart disease and the other to paediatric services.

Figure 6: Allocative efficiency: increase in funding

Heart Disease



Paediatric Services

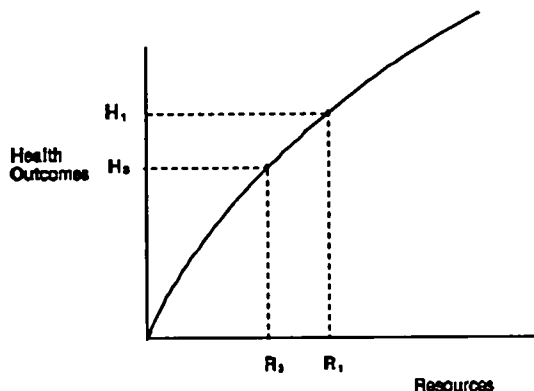


Additional resources may either be invested in expanding the treatment or control of heart disease or in expanding paediatric services. Given the technical relationship between resource inputs and health outcomes shown in figure 6, the benefits gained from treating heart disease exceed the potential benefits from the expansion of paediatric services. In terms of allocative efficiency, the investment is best placed in heart disease.

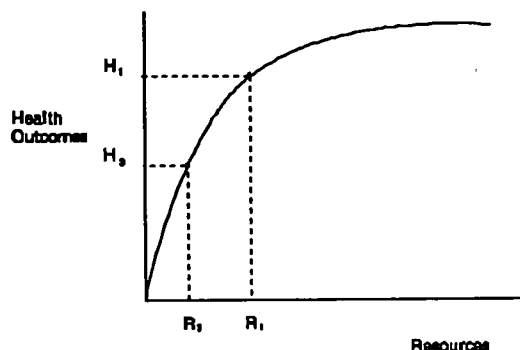
However, for a reduction in funds, heart disease should get cut first as reductions in funding here have the least detrimental impact on health outcomes (figure 7).

Figure 7: Allocative efficiency: reduction in funding

Heart Disease



Paediatric Services



Opportunity costs revisited

The concept of opportunity costs introduced earlier can be clarified by the diagrams used to define the different notions of efficiency. The cost of the various programs can be measured in terms of the dollar-value of the resources allocated to them but, as defined earlier, the opportunity cost is equal to the benefits forgone because resources spent in one way cannot be spent in another. Assessing economic cost is equivalent to comparing the outcomes achieved by one program with the outcomes achieved by another. In terms of figure 5, if extra resources are used to expand cardiac services then less is available to expand paediatric services. The opportunity cost of the additional cardiac service is the outcome that would have been achieved had the same resources been allocated to paediatric care instead.

Provided that there is more than one way that resources might be used, then there will always be an economic cost incurred by whatever resource allocation decisions are made. Borrowing from the future, switching capital money to recurrent funds, or shifting costs between Commonwealth and State budgets either defers the cost, or off-loads it elsewhere. It does not reduce cost or make services more efficient.

As always, the question is how do the benefits of what is proposed to be done with limited resources compare to what might otherwise be done with them. The issue of cost cannot be avoided and neither can it be divorced from outcome measurement.

The importance of the margin

Planners are rarely, if ever, faced with a 'blank slate'. Rather than planning the ideal set of services, they are planning how to expand or cut services to deal with changing population or disease patterns, or budget cuts. So, most planning problems relate to changes in the scale of provision. For example, should cardiac services be expanded to cope with increasing demand from ageing patients? Should screening for breast cancer be limited to certain age groups, and if so which? It is rare for any planning problem to relate to whether or not a service should be provided at all. Questions about the scale of provision focus on the margin, the last of the economic concepts to be introduced here.

The problems shown in figure 4 to 7 illustrate the importance of the margin because priorities might change as the decision-context switches from considering reductions to expansions or as larger versus smaller changes in resourcing are considered. As shall be seen in the next section, this focus on the margin also serves to reduce the complexity of the planning problem.

PLANNING IN AN ECONOMIC FRAMEWORK

The concepts of technical and allocative efficiency, of opportunity cost and decision making at the margin may be quite clear at an abstract level but how do they translate into the day to day decision making of planning and service development?

The first step is to use them to set up the framework in which decisions are considered. This framework should allow broad questions relating to objectives and priorities to be considered and should provide an overview of the health care system to prevent too narrow a focus on detail. It should also facilitate the change in emphasis from activities and throughput to final outcomes and efficiency. The second step is to use this framework in order to identify the scope for marginal changes in provision **within** health programs in order to improve technical efficiency and **across** health programs to address allocative efficiency. The second step is achieved by a marginal analysis.

(a) Program budgeting

Programs are sets of activities with a common objective. Unfortunately, the word program has also been used in public sector accounts to describe a common grouping of funds. As used here, the term 'program' therefore refers to a different set of activities than the programs defined in health service accounts. The aim of program budgeting is to link the allocation and use of health care resources to the broad areas of policy within which strategic decisions must be made. Thus, resource use may be linked most directly to the achievement of stated objectives of health care as is depicted in figures 1-5. The program budgeting approach provides a structure in which broad-brush data on costs, activities and outcomes can be assimilated in a manner which informs rather than dictates management action.

(b) Redeploying resources at the margin

As has already been argued, most decisions about the use of health care resources relate to changes in the scale of programs rather than to whether or not a program should receive any funding at all. This key insight means that much of the apparent complexity in

determining health care priorities can be avoided because attention can be focussed within programs on those activities which are marginal. A marginal activity is defined as one from which the outcomes achieved, though positive, are valued less highly than those being achieved by other activities in the program. Marginal, in this sense, does not mean small or inconsequential. If resources were to be restricted, the marginal activity would be the first to be curtailed. Alternatively, if resources to the program were to be increased, the marginal activity would be the first to be expanded.

This means that the range of activities which require detailed costing and evaluations of outcome is considerably reduced and limited to those for which decisions are needed. This does not mean that the remaining health care activities escape scrutiny. The process of evaluating marginal activities and shifting resources from those of low marginal benefit to those of high marginal benefit can be repeated step by step, in subsequent rounds, until the whole program has been evaluated. In this way, programs which are totally ineffective do not escape being cut completely.

The advantage of the marginal approach, apart from its relevance to the immediate problems being faced by health care planners, is that it reduces the task of evaluating costs and outcomes into a manageable size. Thus, it is not necessary to identify in full the technical relationship between resource inputs and health outcomes for each health program in full. Attention may instead be focussed on those activities which are likely to be contracted or expanded first.

(c) Steps in developing a program budget

The development of a program budget requires ten simple steps to be followed (table 1), each of which is described more fully below. This follows Mooney et al, 1992.

Table 1: Steps in developing a program budget

1	Definition of programs and sub-programs
2	Set program goals
3	Identify program costs (budgets)
4	Identify wish lists
5	Cost wish lists
6	Identify benefits of changes in spending
7	Consider equity implications of decision
8	Choose
9	Implement
10	Return to step 4

1 Definition of health care programs and sub-programs

Programs may be defined in a number of ways: by client group, by disease group or by geographical area. The choice will depend on particular policy objectives, local circumstances, and the main areas where resource allocation decisions must be made. It is therefore most likely that program areas will relate to disease or client groups. Programs should comprise activities that have relatively

homogeneous outcomes and for which it makes sense to set common health-orientated policy objectives. The number of programs identified should be manageable and each should be mutually exclusive and comprehensive in their coverage of health care activities.

Within each major program (cardiac disease, respiratory disease etc) it will be possible to identify a number of sub-programs (perhaps ten to twenty) across which intra-program resource allocation decisions can be made to improve technical efficiency. An example in the field of maternity care might be sub-programs associated with ante-natal care, care related to delivery and post-natal care. In cardiology, sub-programs in coronary care and cardiac surgery might be identified.

2 Setting program goals

To improve the health status of the people of NSW, specific policy objectives, in the form of health-outcome related goals will be set for each program. If programs are defined in terms of disease classifications, then program goals might be specified in terms of reductions in mortality, morbidity and diminished quality of life arising from the disease group in question.

The objectives or goals must be quantifiable but need not be set as targets at this stage. Specific targets will depend on the relative cost-effectiveness of procedures and interventions designed to achieve the policy goal. In the event, it may be necessary to abandon some goals because no effective treatment exists or because

the costs of the intervention exceed the value of the outcomes achieved.

3 Identifying program costs

This requires the resources currently allocated to each of the programs to be identified and quantified. This should be done as comprehensively as possible but does not need to be done at too fine a level of detail. The costing will provide an indication of the balance of resource allocation across programs. Given constraints on the availability of cost data, the results will be crude but sufficient for the purposes to which they will be put.

Attributing costs to health programs need not require any reorganisation of health service accounting methods beyond those already being introduced. If programs are defined in terms of disease groups, then the cost modelling exercises being carried out as part of the Commonwealth Department of Health, Housing, Local Government and Community Services Casemix project, and which involve attributing hospital costs to diagnostic related groups should provide sufficient information to apportion hospital costs to programs.

4 Identify wish lists

This initially involves identifying those activities which are either not provided or are under provided because of resource shortages and ordering in them in terms of priority (an incremental wish list). At the top of the wish list should come those activities which would be given priority should additional funds become available.

The second stage is to identify those activities which are currently provided but which are less effective than the bulk of other activities within the program (a decremental wish list).

The incremental and decremental wish lists identify the marginal activities i.e. those to which priority would be given if additional funds were available and those that would be cut back first should funding be reduced.

5 Cost wish lists

This step involves more accurate costing of the items on the wish list such that the costs of expanding provision and the savings to be realised from contraction can be known.

6 Examine the benefits of changes in spending

Step 6 involves assessing the impact that specified changes in spending of (say) \$100,000 and then \$200,000 would have on the objectives of the service. This involves deciding which of the items in the wish list would be provided and then assessing what would be the effect of each service increment or decrement? This need not be measured in any sophisticated manner but might be assessed in simple physical units of throughput: e.g. so many CABGs or hip replacements performed; or in physical units of outcome: lives saved, reduction in disability days etc.

7 Consider equity implications

The analysis so far has focused on efficiency by comparing total health gains with

total health losses for a re-allocation of resources. Equity is an important consideration in the health care sector which cannot be divorced from efficiency. Moving resources from cardiac surgery to heart disease prevention will, by and large, mean moving health benefits from one group of people with established heart disease to a different group - those at risk of developing it.

The equity consideration of any reallocation of resources can be made explicit by drawing up a planning balance sheet. This should list all the stakeholders in the decision and identify which groups would gain from the reallocation and which would lose. As far as possible, gains and losses should be quantified.

Whilst this approach does not dictate the 'right' decision, it does make explicit the distribution of costs and benefits.

8 Make a decision

Equipped with the information from steps 4 to 7, it is possible to make the sort of decisions needed to improve both technical and allocative efficiency. Within programs, it is possible to assess the impact of marginal shifts in resources from one sub-program to another (as in figure 4). Once intra-program shifts have been exhausted improving technical efficiency in the process, it is possible to consider the net effects of inter-program shifts in resources (as in figures 6 and 7). Re-allocating resources from programs which are less effective at the margin to those which are more effective improves allocative efficiency.

9 Implement the decision

With the costs, benefits and distributional implications made explicit, the decision can be made and implemented.

10 Repeat process

The process is dynamic; once step 9 is reached, one returns to step 4 to work through a new round of marginal adjustments. As funding for programs in the wish list is provided, marginal outcomes of programs change, thus rearranging the priority programs are given in the next round. After a series of iterations, the cost per unit of health outcome achieved by different activities should approach the same value across all programs and sub-programs. Changes in health technology, in population health status, or in costs would require a new round of analysis. Thus, the process of planning and priority setting is continuous and responsive to changing population needs and circumstances.

PROGRAM BUDGETING IN PRACTICE: CASE STUDIES FROM THE UK

The steps outlined above reduce much of the complexity facing the planning task by providing a systematic framework in which costs and benefits may be brought together in manageable chunks. However, the process does not replace the need for difficult decisions to be made. However, some insight into the advantages of the approach and to the difficulties which have still to be overcome can be obtained by considering the experience in the UK.

One of the earliest applications of program budgeting to health care occurred in the Grampian region of Scotland in the late 1970s (Mooney et al, 1980). Interest in the use of program budgets waned after this initial attempt and has only recently been revived. The impetus behind this change has been the reforms to the NHS which have focused attention on priority setting and have highlighted the deficiencies in traditional methods of resource allocation (Donaldson and Mooney, 1991). The recent nature of this revival does mean that the later attempts to test the approach are far from developed and are largely unpublished.

(a) The Grampian Health Area (Scotland)

The first case study concerns the Grampian health area in Scotland (Mooney et al, 1980). In developing a program budget structure for the Health Board as a whole, it was decided to use only those data which were readily available. Programs were based on hospital specialty groups (table 2) and crude rules of thumb were used to allocate specific specialties and costs to programs. Thus, for example, paediatric surgery could be part of

the child program or the surgical program. Here, local organisational factors suggested that it would be best placed in the child program. By this means, it was possible to attribute over 90% of the Health Board's budget to one of the eight programs.

Table 2: Program structure in Grampian Health Area

Medicine	Dental
Surgery	Ophthalmic
Elderly	Maternity
Mental	Child

By repeating the exercise over previous years, it was possible to plot past expenditure patterns over time to check whether the growth in programs matched that expected and to compare changes in expenditure with changes in activity.

The program budget also allowed the health authority to predict the effect of changes in its priority. For example, the effect on the acute services budgets of increasing the proportion of spending going to mental health services could be readily quantified. Equally, the likely demands of technological changes, if all were to be implemented, could be predicted. This was particularly useful in demonstrating that it would not be possible to fund every technological change and therefore choices would have to be made between what could be afforded and what, unfortunately, could not.

The approach adopted in the Grampian region fell short of that described in section 3 because it did not include the identification of wish-lists nor consideration of the effects of shifting resources across sub-programs or programs. Nevertheless, the exercise did provide

useful information which allowed the authority to plan and monitor its policies.

(b) Newcastle

The district health authority in Newcastle (in the north east of England) have been testing the feasibility of program budgeting and marginal analysis to assess the limits to which existing information can be pushed (Craig et al 1993). The district is set to lose funds in the future as capitation based funding is introduced. This has concentrated the minds of the planners considerably.

The approach is being piloted in one specialty only (orthopaedics) and therefore inter-program changes are not being considered. A working group involving specialists, GPs, allied professionals, a hospital manager and representatives of consumer groups was convened and chaired by a social scientist from public health.

Initial results showed that it was relatively easy to gain agreement about the incremental wish list but not the decremental one. Responsibility for deciding where services should be cut were to be left to the clinicians. Not surprisingly, the researchers found a reluctance among providers and users to identify scope for reducing funding.

(c) North Merseyside (England)

The second case study reports experience in the North Merseyside region of England (Mooney et al, 1993). Like Newcastle, this region is also facing a reduction in funding, though development monies have been "top sliced" from the overall allocation and made available to fund service developments. Therefore, the purchasing agency had to consider

where it might best spend the additional monies but also where monies could be withdrawn with least loss of benefits to the public health.

The program budgeting approach was piloted in a both disease-based group (ischaemic heart disease or IHD) and a service based budget (mental health services).

Defining sub-programs proved easier in the IHD group than the mental health services group where the diversity of the provision caused problems.

There were technical problems because of the paucity and poor quality of data, particularly on resource use and cost. Where resources could be costed, it often proved difficult to attribute these to programs. Desegregating health promotion activities and attributing them across programs also proved difficult. Finally, there were problems getting data on the resources committed by GPs and other community health services. However, such data problems exist currently and it was suggested that sensitivity analysis be employed to test the need for better data.

Political issues arose mainly in recognition of the different agencies involved in the delivery of health services. General practitioner services are budgeted separately from hospital services and so cannot simply be included in a hospital based program budget. However, the program budgeting approach did emphasise the importance of the partnership between the district health authorities and the general practitioners in understanding total resource use.

In summary, an overall picture for a disease and a service program was obtained. This helped to establish a sense of common purpose among planners and managers. Value judgements were made explicit and planners were forced to move from their preoccupation with operational problems to consider the more pertinent question of what services were meant to achieve and therefore where to redeploy monies.

d. East Sussex

In East Sussex (a district in the south east of England) programs are being defined according to age-groups, specialty and location of care (acute/community) (Brambleby 1993).

The main aim appears to be the assimilation of information into programs rather than the identification of priorities through a marginal analysis, as this second stage has not been attempted. However, even this limited application of the principles of program budgeting has had a positive impact. The way planners are thinking about problems of resource allocation has improved as has the quality and comprehensiveness of data collection.

Conclusions

The different experiences of the planners in each of the case studies provide a number of lessons. The first is that much can be done with existing information systems despite the well documented and extensive deficiencies which exist. The program budgets may be crude but they are sufficient to give the broad overview required to make strategic decisions. Certainly better information is needed at the more micro-level when allocations among sub-programs have to be determined but data requirements are reduced

considerably by focussing only on those activities where change is expected to occur (at the margin). The quality of existing data improves once those responsible for its collection realise the results of their efforts will be used and the process serves to highlight those areas where better data are essential.

Second, there are many agencies and individuals involved in the delivery of health services, often with their own agendas and objectives. The program budgeting approach provides a coherence of purpose by linking resource use to the achievement of health outcomes. Thus, all agencies concerned with (say) the treatment of CAD can be part of the process of decision making. This should make it easier to reach consensus about where resources should be redeployed to improve the public health.

Third, linked to the diversity of providers is a diversity of funding arrangements. Too often decisions are made in the interests of a particular budget without regard to their knock-on effect on other budgets or to their opportunity costs (forgone benefits).

Finally, the key insight in this approach is its impact on the way problems of resource allocation are thought about. The approach provides no easy answers but it does provide a framework in which the difficult questions may be addressed and in which information on resource use and its impact on health outcomes can be brought together in manageable chunks (Ham, 1993). This alone demonstrates the importance of the economic approach to health services planning.

PROGRAM BUDGETING IN AUSTRALIA

The pressure on health service planners to react to the next crisis prevents much needed consideration of the allocative implications of their decisions. In the absence of any better way of dealing with the problem of scarcity of resources, 'efficiency' savings (i.e. cuts in spending) are often applied pro rata across the board without due consideration of the relative priority which should be given to programs. Specific planning problems are often more concerned with aspects of operational efficiency rather than technical or allocative efficiency.

At the one-day workshop held in Sydney, planners agreed that the program budgeting approach might offer them something useful. However, they foresaw a number of difficulties. These mirrored the problems identified by the participants in the North Mersey project.

Data deficiencies loomed large, with health promotion, community health services and family practitioner services identified as areas where this would be particularly problematic. The lack of any linkage between financial and activity data was also identified as a problem.

Political aspects were also mentioned and the lack of control that planners have over the resources used by Visiting Medical Officers in hospitals and by general practitioners in the community was identified. As a general principle, it was agreed that only those resources that were within the control of the planning process should be included in the program

budgets. However, it was agreed that identifying the total program budget, irrespective of who controlled particular elements of it, was important in bringing all of the relevant decision makers into the planning process. This would also be useful in educating those whose decisions committed resources, helping them to understand the knock-on effects of their decisions to patients or services beyond their immediate concerns.

An important problem, which none of the studies reported in the UK has yet overcome is the incentive to 'game' the system. That is to refuse to identify candidates for the decremental wish list or to nominate highly effective programs as marginal ones to ensure that cuts in funding are shifted onto other programs. A method of auditing the process and rewarding those who 'play the game' is needed.

CONCLUSION

The program budgeting approach is a rough and ready attempt to make the task of planning health services more manageable. It provides the broad framework in which strategic decisions can be made. As in any planning approach, the data upon which decisions must be made will be deficient. However, the true test of the relevance of program budgeting is not how it compares to some non-existent ideal but how it compares to present practice. The approach provides no answers, just a better framework in which the right questions may be addressed.

If the approach is to improve the planning of health services in Australia, then planners must have foresight to see the advantages, and persistence to overcome the difficulties which will undoubtedly be encountered.

It must also be recognised that there will be winners and losers from the process. This is the case with any planning process which must decide to which activities should resources be allocated. One of the strengths of the program budgeting approach is the way it allows the costs to the losers to be quantified such that they may be compared explicitly with the benefits to be gained. This must make for better health planning, and for more effective use of health service resources. This is an end to which no-one involved in the delivery of health care services should object.

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