

International Perspectives on Priority Setting and the Program Budgeting and Marginal Analysis (PBMA) framework

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Introduction

In this paper we seek to synthesize international experiences in the development of priority setting methods and the implementation of their results. The paper draws on well-established priority setting research programs in Australia, Canada, and the United Kingdom spanning the last 15 years. These countries have been at the forefront of the development and application of Program Budgeting and Marginal Analysis (PBMA) as an explicit, robust, and practical tool to assist policy makers and clinicians in setting priorities in health care [Mitton et al 2004].

It is worth noting at the outset that, in this paper, we are not discussing a framework for use in national bodies, such as the UK's National Institute for Clinical Excellence (NICE). NICE can be characterised as conducting one-off and in-depth evaluations of single technologies before making recommendations to the rest of the NHS as to whether such technologies should be adopted. Here, the consideration is one of how cash-limited health authorities manage competing claims on their resources, a piece of NICE guidance being one such claim. PBMA has been used in health care for almost three decades, in at least sixty health authorities across Britain, Australia, and Canada [Mitton and Donaldson 2001]. The methodologies used in priority setting and PBMA studies have evolved significantly in recent years. Methods are now less mechanistic than they have been in the past, recognising the need to balance pragmatic and ethical considerations with economic rationality. The aims of the paper are to identify international consistencies, controversies and challenges in the treatment of these considerations, and to discuss a framework for evaluating PBMA studies. Given the nature of this conference, it is also hoped that the paper will also stimulate debate as to (a) whether such frameworks are used in the context of the French health service, (b) if so, at what levels, and what might be the lessons learned in terms of encouraging wider use, and (c) if not, is that to do with structural and managerial challenges in the system.

Economic Principles

PBMA offers a pragmatic framework to aid health service decision-makers in setting priorities using the principles of opportunity cost, marginal analysis and maximising benefits from scarce resources [Mooney et al 1992]. These are the same premises that underlie cost-effectiveness analysis and cost-benefit analysis, and, based on these premises, it is possible to design a priority setting mechanism to aid decision-making about changes in resource allocation.

The principle of opportunity cost arises from the economic problem: resources for health services are scarce, and are insufficient to provide all health services that may provide benefits to society. Decision-makers therefore have to address a series of questions: how, when, where and what health services should be provided, and for whom? This will involve deciding which services to provide, and which not to provide, recognising either implicitly or explicitly that providing one service may result in an alternative service not being provided due to resource scarcity. The benefit forgone from not providing the alternative service is the opportunity cost. PBMA recognises the need to carefully consider the costs and benefits of alternative health services, and their opportunity costs [Mitton et al 2004].

The principle of the margin refers to the next unit of benefit gained (or lost) or the next unit of resources invested (or dis-invested). Thinking and acting 'at the margin' typically involves shifting resources from areas of low health gain per dollar spent to areas of higher health gain per dollar spent in order to improve benefit to the population as a whole. The focus of PBMA is therefore on incremental change rather than global reform in service delivery. However, the principle of maximising benefits from scarce resources for a given program remains in tact. In the first instance, PBMA seeks to maximise benefits only from those services which are deemed to be 'at the program margin' at a given point in time. If the framework is used as a longer term decision-making tool, different services may be identified to be 'at the program margin' at different points in time. PBMA can then be used to sequentially address all services within a program, seeking to maximise benefits across the whole program.

The PBMA framework

The PBMA framework can be broken down into four stages [Peacock 1998]. A more detailed description of the approach has been given by several authors [Donaldson et al 1995, Shiell et al 1993, Mooney et al 1992].

Stage 1: Define the program(s) to be examined. The exact choice and nature of the program(s) to be examined will depend on the organisation, its objectives and existing budget areas. The program structure should be manageable in the sense that program areas are comprehensive but do not overlap, and all services provided should be covered. The resources which are allocated to the individual programs may need to be identified, and the costs of providing the different services quantified. These costs are then incorporated with the activity information to produce the program budget, which seeks to aid decision-

makers by highlighting options for changing the configuration of existing services [Ruta et al 1996].

Stage 2: Identify services which are potential candidates for increments or decrements in service provision. That is, a range of services are identified which may be considered for change in the future, to attempt to improve the overall level of benefits received from health services (sometimes referred to as 'wish lists'). In considering services which are options for change, PBMA may be used to examine changes in services within a given program (micro/within program study design) [e.g. Peacock et al 1998, Mooney 2002] or between programs (macro/between program study design) [e.g. Mitton et al 2003].

Stage 3: Evaluate increments and decrements in terms of both their effectiveness and cost of service provision. Published evidence on the effectiveness of services can be used, where available, to evaluate the increments/decrements. Where published evidence is unavailable, expert opinion can be used to estimate effectiveness using decision analytic techniques [Peacock et al 1998]. Estimates of effectiveness and costs can then be combined to determine the cost-effectiveness of the services. If the principle of maximising benefits from scarce resources is being followed, study results should indicate which options are the most and least cost-effective, with the implication that resources are better employed in providing the most cost-effective services. This may include identifying services that can be provided as effectively using fewer resources, as well as identifying services that should receive fewer resources because they provide less benefit per dollar than one or more of the potential service increments. Importantly, the implications of changes in the configuration of services in terms of other decision-making criteria, in addition to cost-effectiveness, may also be assessed.

Stage 4: Reallocate resources according to cost-effectiveness and other decision-making criteria. The process can then be repeated over a period of time so that services which are more difficult to evaluate, or change, are progressively assessed. By sequentially repeating the process, the emphasis of PBMA is to gradually move towards the goal of maximising benefits for a given level of resources. In this way, use of the PBMA framework is relevant regardless of the total pot of resources available.

International Consistencies and Controversies

All PBMA studies share the common economic foundations of opportunity cost, marginal analysis, and maximising benefits from scarce resources. PBMA studies have shown a high level of consistency in terms of adopting a health system study viewpoint, employing a micro/within program study design, and using disease or client based program frameworks. Differences have emerged in methods used to generate increments and decrements in service provision, including using stakeholder polling, published literature, and/or national health priorities. Similarly, differences have emerged in the methods used to evaluate services, including using published effectiveness literature, local effectiveness data, decision analysis of expert judgement, and Disability Adjusted Life Years. Recent methodological advances have focussed on some of the more challenging aspects of priority setting, including identifying options for service decrements, and priority setting at the macro/between program level.

Perhaps the most significant advances in the PBMA framework have been in the treatment of pragmatic and ethical considerations. PBMA studies are increasingly recognising the need to address the complexities of organisational contexts and decision-making processes, which ultimately determine patterns of resource allocation. Pragmatic considerations include identifying key health service and community stakeholders, eliciting stakeholder preferences and utility functions, establishing contextual barriers to change, and developing adequate implementation processes. Recent innovations have also extended methods to include equity weights in priority setting, to consider other managerial objectives within the utility function, and to place priority setting in the wider ethical framework of Accountability for Reasonableness.

The first applications of PBMA in health care arose in the UK in the 1970s when used by the Department of Health and Social Security in England to set priorities for spending in the NHS [Perrin et al. 1978, Bevan et al. 1980]. Interest in the framework seemed to wane in the 1980s and then enjoy a 'relative' renaissance during the 1990s. During this time, published studies revealed that both micro and macro-level exercises had been conducted across Grampian Health Board [Ratcliffe et al. 1996, Scott et al. 1998], Newcastle and North Tyneside Health Authority [Craig et al. 1995], Greater Glasgow Health Board [Twaddle and Walker 1995], Tayside Health Board [Ruta et al 1996] and North Merseyside [Madden et al. 1995].

More recently, NHS re-organisations have posed new challenges for priority setting in the UK. Local health care organisations charged with commissioning health services for specific populations are faced with the difficulty of implementing guidelines issued by national organisations such as the National Institute for Clinical Excellence¹. This has led to a renewed call at local and national levels for more pragmatic approaches to priority setting and commissioning to be adopted [HC Report 2002]. PBMA activity during this time has had limited research or academic input, although a handful of in-house, one-off, micro-level exercises have demonstrated the usefulness of the framework and the ability of decision-makers to adapt and apply the concepts. Future work by the authors will entail a larger-scale PBMA exercise to be conducted, initially, with PCOs within one (Northumberland, Tyne and Wear) Strategic Health Authority (SHA) with a view to expanding the research into other SHAs within the UK.

In Australia, use of PBMA arose in the early 1990s, primarily through the introduction of the framework by health economists in the Eastern and Southern States [Shiell et al 1993; Viney et al 1995]. Since that time, both State and Federal levels of government have funded applications of PBMA in a wide range of contexts. In New South Wales, PBMA has successfully been used to aid priority setting in dental, asthma, family health, diabetes, and mental health services [Mooney et al 1997]. In South Australia, a significant PBMA program was developed in both the acute hospital and community health settings, under the guidance of health economists from Sydney and Monash Universities [see Peacock 1998 for references to individual studies]. Applications ranged from Indigenous health to injury prevention to surgical services. Similarly, a program of work has been developed in Western Australia in recent years.

Australian applications have included a number of important developments for the PBMA framework. Several PBMA studies have taken advantage of detailed, patient level, clinical costing data collected under the Australian DRG framework. Such data is routinely available, reducing time spent on the program budget, and providing high quality cost information. Other studies have developed more rigorous methods to elicit and weight criteria used in decision-making, drawing on multi-attribute utility theory and decision analytic techniques [Peacock et al 1998]. Methods for evaluating PBMA studies have also been developed, focusing on evaluating both methodological rigor, and the ability of PBMA to achieve real

¹These local organisations are referred to as PCOs (termed either Primary Care Trusts or Primary Care Groups), which include all GPs within a geographical area. With a remit wider than that of the health authorities they replaced, PCOs represent and are responsible for the purchasing, organising and delivery of all primary care services.

changes in resource allocation in different organisational contexts [Peacock 1998]. Finally, a national PBMA study of priorities for reducing the burden of cancer has been the first to incorporate mortality and morbidity data across diverse programs using Disability Adjusted Life Years [Carter et al 2000].

In Canada, formal application of the framework to date has been limited to Alberta. In this province, since 1998, at least seven micro-level case studies within three regional health authorities have been carried out [Mitton and Donaldson 2003]. PBMA has also been applied at a macro-level, across all major service areas within a single health region [Mitton et al 2003]. This latter activity was an important addition to the priority setting literature, as such broad level marginal-value type re-allocations had not been previously reported. While the initial work in these health regions was funded through research activity and directly involved university-based health economists, decision makers within the regions have continued to use PBMA in further applications. It is thought that genuine gains can only be made through ongoing, systematic application of the PBMA approach, both within and across programs. Current research is being planned to extend the use of PBMA to other provinces. Through this, the intention is to build on research discussed above around organisational challenges, including issues of physician involvement and incentive systems, and to further develop means of evaluating the process from an ethical perspective.

International Challenges

Recent experiences with PBMA in Australia, Canada and the UK have highlighted a range of considerations that need to be addressed if PBMA is to be applied successfully in practice. In particular, experiences have demonstrated the need to balance pragmatic and ethical considerations with sound economic methodology.

Advisory Panels

International experiences have highlighted the central role of the PBMA advisory panel. As specific evidence to inform local decisions will not always be present, an advisory panel is used in PBMA to weigh the options for service delivery through considering available evidence, but also relying on local data and expert opinion [Peacock 1998]. Typically, the advisory panel is also charged with establishing decision-making criteria and identifying service increments and decrements. The advisory panel should receive training in the principles of priority setting. This is a necessary pre-requisite if the panel is to have ownership of the process and the results of the study. Should the panel feel that they do not

understand the methods used, and the process by which resource allocation decisions were reached, the likelihood of results being implemented will drop significantly.

The advisory panel can be comprised of an array of individuals spanning relevant clinical and non-clinical disciplines. In some cases, if the question at hand is narrow in scope, the panel may be quite small, whereas in other cases potential re-allocation decisions may include many disciplines and thus broader representation will be required. Recent developments in PBMA have included inviting other key stakeholders, including service providers in related services (e.g. secondary care providers on prevention programs) and consumer and community representatives [Peacock 1998], to join PBMA advisory panels.

There are many inputs into this type of priority setting process, including, but not limited to, evidence from the literature such as outcomes studies, economic evaluations or health technology assessments, quality reports from the Internet, regional or state policies and guidelines, local utilization data, informal input from staff, clinicians and members of the public, and reports from government health departments. As such, the advisory panel will most likely want to pragmatically weigh out the investment and disinvestment service options, against the pre-defined criteria. While this may, on first glance, not appear to be overly rigorous, the wealth of data and information available is not usually the problem. The challenge comes in sifting through this information and applying it in a systematic manner, with an explicit priority setting process; it is here that the real added-value of PBMA can be seen.

Community Participation and Community Values

Incorporating community opinions and values in PBMA raises several issues, including what methods should be used to elicit consumer preferences. One option is to have a member or members of the public on the advisory panel. While this may be challenging because of the difficulty of a small number of individuals being representative of the population at large, work in Ontario has shown that community stakeholders can play an integral and direct role in the decision-making process [Martin et al. 2003]. Important aspects of this might include defining appropriate criteria for decision-making based on community values and ensuring the needs of specific groups within the community are addressed (e.g. ensuring services for Indigenous populations are culturally appropriate). Service providers and decision-makers may be better placed to interpret evidence on the cost-effectiveness of services and make technical judgements about service delivery and patient outcomes.

In fact, recent work on public involvement in priority setting suggests that the public may best be used to develop the criteria or principles on which decision making processes are based [Litva et al. 2002, Wiseman et al. 2003]. Extending the notion of a health care constitution put forward by Mooney [1998], the principles obtained from the public could be incorporated directly into a PBMA exercise. A pitfall is of course that this type of public consultation can be resource intensive. Another is that such principles can act only as a general guide, as each decision will involve trading the principles 'at the margin' thus requiring a level of detail which may never be achievable through public consultation. Thus, while it could be argued that the public should be involved, decision makers may in the end choose to develop local criteria based on existing business planning documents within the organisation, or through consultation with the given health organisation's governance structure.

Organisational Context and Behaviour

Perhaps the strongest challenge to PBMA, and likely to any explicit, evidence based approach to priority setting in health care, is that of organisational context and behaviour. Issues such as the need for organisational stability, the active involvement of high level champions, an organisational culture which is receptive to fostering change, and an openness to learning are all critical factors for the use of PBMA as a practical decision making aid [Peacock 1998]. Drawing on work from Canada and Australia, a depiction of the PBMA process set within the organisational context was developed, which includes barriers and facilitators for the uptake of PBMA and follow-through of advisory panel recommendations [Mitton and Donaldson 2003].

The trialling and application of new priority setting methods should only be undertaken during periods of relative organisational stability. For new decision making tools to be developed, a stable planning environment is needed which allows key stakeholders to explore new methods and discuss their application. Organisational changes will reduce the willingness of key stakeholders to develop alternative approaches to health service planning. Stability in the planning environment is needed both within the relevant health authority and the provider(s) involved. This allows the strategic directions of the health authority and providers to be developed and clearly understood. During periods of organisational instability and uncertainty it is most prudent not to attempt the trialling of new priority setting techniques.

The application of new priority setting methods results in significant changes in decision making culture, and potentially in the configuration of health services. Change management

strategies should be developed to identify and address potential problems in the application of priority setting methods and their results. One of the key elements of a successful PBMA study is strong leadership from managers, combined with enthusiasm from service providers. If strong management leadership is absent it is unlikely that a priority setting process will be successful. One of the roles of managers is to negotiate the study through a series of changes in decision-making and planning cultures. Furthermore, managers have the responsibility for implementing changes in service provision and managing the associated potential for dislocation of services and staff.

Providers will only own the process if they are involved from the outset and the process is driven internally. This includes involving providers in initial discussions about appropriate priority setting models for development, as much of the development of priority setting models depends on information and expertise held by service providers. More importantly, the implementation of changes to service delivery becomes extremely difficult without provider acceptance and ownership of those changes.

Integration of Funding and Priority Setting Mechanisms

Successful application of priority setting methods requires a degree of integration in funding and priority setting mechanisms. If priority setting mechanisms conflict with funding mechanisms at the local or regional levels, or with budget setting mechanisms within provider organisations, it is unlikely that priority setting methods will lead to changes in the allocation of resources. Before priority setting methods are trialled careful consideration should be given to the broader health service resource allocation framework.

Population based funding models are perhaps most consistent with PBMA and other priority setting methods. PBMA is based on maximising benefits from available funds, whilst population based funding allocates resources on the basis of population need. To the extent that population needs reflect capacity to benefit from health services, it has a focus consistent with PBMA. Priority setting methods may then be used to set priorities within budgets allocated to populations. The main drawback of population funding models is that they do not directly address the issue of operational efficiency. In this respect PBMA may have a role in promoting this type of efficiency.

Case-mix, or throughput, funding has two main strengths in the context of priority setting. First, its classification system for health services is well developed, widely accepted, and is based on clinical parameters. Secondly, the construction of cost weights produces detailed

cost information on a range of health services. PBMA can draw on case-mix information by using the DRG (or similar) classification system and the cost information used to construct cost weights. The major drawback with case-mix funding is that it places a significant emphasis on throughput rather than capacity to benefit and outcomes in health service planning. This may lead to planning strategies at the local, regional, and provider levels which are based mainly on throughput considerations, which may potentially conflict with cost-effectiveness considerations in priority setting models.

Identifying Service Increments and Decrements

Another challenge that has arisen in the literature is that advisory panel members, particularly clinicians, are reluctant to produce specific suggestions for resource release due to the culture in health care of expecting more resources rather than having to make trade-off decisions and re-allocations [Brambley 1995]. That is, while an advisory panel may be quick to come up with areas for expansion, a much more difficult challenge is then identifying areas from which to obtain resources to fund priority areas [Street et al 1995]. A number of methods have been proposed to address this issue, including drawing on clinical pathways models and the health production function literature [Peacock 1998]. Research in Alberta involving the piloting of PBMA in a number of micro level case studies found the use of one-on-one interviews with advisory panel members to be useful in brainstorming areas for resource release, before bringing the group back together to make recommendations for change [Mitton and Donaldson 2002b]. The main issue here is in alleviating potential social desirability bias in the group setting, and helping individuals to think about re-allocation as opposed to always relying on additional resources.

Decision-Making Criteria

A major development in PBMA in recent years has been the explicit inclusion of decision-making criteria beyond cost-effectiveness. These criteria may include population health gain, efficiency, access, equity, community empowerment, system integration etc. It is important that the criteria be explicitly defined, and that if possible, the criteria be given specific weights as it is unlikely that all criteria will have equal importance. Two key strengths of this approach are that the panel defines (or adopts) the decision-making criteria which are relevant to the context of the PBMA study and that judgements are explicit and based on shared understanding of the criteria. As a result, the panel has full ownership over the criteria with which its services are evaluated, and the approach is explicit and open for

scrutiny, enabling issues to be discussed which may have previously been left unaddressed and implicit in decision making.

There are a number of potential ways in which these criteria can be incorporated into PBMA. The most explicit approach has been to use decision analysis to construct multi-attribute utility models [Peacock et al 1998]. These models combine criteria, such as health gain, empowerment and horizontal equity, by eliciting the advisory panel's importance weights for each and constructing a utility function which is used to inform cost-effectiveness (or cost-value) ratios. The criteria identified by the advisory panel may be specific to the context of the study, and should be informed by both micro (local) and macro (regional or national) level objectives. Criteria should be carefully defined and described so that key principles of multi-attribute utility theory are adhered to i.e. criteria should be mutually exclusive (orthogonal) to avoid double counting, and collectively exhaustive to ensure all relevant aspects of the decision-makers' utility function are captured.

A variant of this approach incorporated vertical equity and other criteria as 'second-stage decision filters' [Carter et al 2000]. In this study, cost-benefit ratios for cancer services were constructed using Disability Adjusted Life Years. Vertical equity was measured in terms of gross health inequalities (excess mortality) for specific population groups. A second cost-benefit tariff was constructed for all increments and decrements, where ratios were weighted for excess mortality by population group. Service increments and decrements first had to clear the cost-benefit hurdle, and only then were they assessed relative to the equity-weighted cost-benefit hurdle.

Ethical Considerations and Accountability for Reasonableness

Finally, a process like PBMA which is meant to operate within the complex environment faced by health care decision makers should also undergo some sort of evaluation. That is, irrespective of the final re-allocation recommendations made by an advisory panel, one may also be interested in whether the process itself was fair. In fact, an ethical framework for evaluating priority setting activity has been developed, and is referred to as 'Accountability for Reasonableness' [Daniels and Sabin 1998]. This framework is based on four key conditions (i.e. publicity, relevance, appeals and enforcement) and can be used alongside of approaches for priority setting such as PBMA.

Specifically, one could envision the conducting of a PBMA exercise by a group of decision makers, based on the four stages outlined above. Following this, relevant stakeholders could

be interviewed to examine the priority setting process in light of the four main conditions of Accountability for Reasonableness. The insight gained could then be fed back to directly impact future processes in the given organisation. In this way, not only are resources likely to be used in a manner which are most in line with the stated local criteria, but as well, the process itself can be made as fair as possible. Importantly, the latter can lead to perceived credibility which will likely help to mitigate problems which may arise due to resources being shifted from one area into another.

Towards a Framework for Evaluating PBMA

A form of evaluation, which may seem more natural to health economists, would involve addressing whether PBMA leads to improved population health. This is a challenging task, but it may be possible to track whether proposed resource allocation changes actually took place and to judge whether these would have occurred in the absence of PBMA. Such evaluations remain to be undertaken, but our experiences suggest 10 key issues should be considered in undertaking a PBMA study [Peacock 2001]. These are described in Figure 1, and again reflect the need to balance pragmatic and ethical considerations with rigour in economic methods.

Conclusion

PBMA is based on fundamental economic concepts and allows for the shifting of resources within or across program areas so as to identify how local decision making criteria can be better met. While often unheralded, a pragmatic approach to priority setting is not only what managers seem to be looking for [Mitton and Donaldson 2002a], but as well, PBMA can enable decisions to be made based on best evidence and local practice [Haas et al. 2001]. Further, decisions to fund or stop funding a service are not made once and for all, in all settings. While this may be seen as a disadvantage, it actually allows for local decision makers to divvy up the available resources in the best way possible (i.e. at the margin), noting the opportunity cost of the decisions made.

It is held that through greater adherence to fundamental economic concepts and broader implementation of economic approaches like PBMA health care organisations will move towards maximizing benefit, or better meeting other important criteria, for the available resources. That said, an important message for health economists is the need to be practical, and to not expect universal (or indeed any) uptake of mechanistic approaches to

evaluation of options. In our view, PBMA provides decision makers with an approach to health care priority setting that is both principled and pragmatic.

There are several key principles which lay the foundation for the application of priority setting tools. Without these foundations priority setting studies are unlikely to meet their goals. Priority setting should be undertaken in a context of relative organisational stability with coherence in long term strategies for planning across health services. Instability in health service organisations almost inevitably results in the failure of priority setting processes. Strong management leadership is required to drive the process. Without this the process is unlikely to be successful. At the same time, ownership of the project by key stakeholders is necessary, including ownership by service providers and community representatives. The whole process must be accompanied by a change management strategy, as implementation of change is difficult if service providers become disenfranchised. The key principles of considering costs and outcomes need to be firmly established, and the incentives generated by health service funding and priority setting mechanisms need careful consideration. Implementation of PBMA results will only occur if a decision making culture which considers costs and outcomes has been established. In many PBMA studies, much of the study has been devoted to establishing this decision making culture.

Before concluding, it is worth reflecting on whether such a framework has the potential for use, or indeed is already used, in the health care system in France. Generally, a non-exhaustive list of the types of question to address in discussion might be:

- ⚡ How might (or does) such a framework fit into the structure of health care financing and consequent levels of decision making in the health care system?
- ⚡ Is there a culture for use of such an approach? Addressing this question, one might reflect on how health care managers are trained in France and whether, in management, there is a tendency towards evidence-based approaches to decision making.
- ⚡ How does the political climate influence the potential for using such frameworks?
- ⚡ What is the quality of information in the health care system and can this be used (or adapted for use) in a PBMA-type framework?
- ⚡ Do incentives and/or the current balance of power (or property rights) in the system mitigate against or in favour of the use of such a framework?

Several final points can be made about PBMA. First, PBMA is intuitive. Many decision makers already think in a manner as outlined above without even knowing that they are using a PBMA approach. The added-value of PBMA is in making the process more explicit and systematic. Second, PBMA can be thought of as a vehicle for drawing evidence into the decision making process in health organisations, and as a means of applying input from the public. It could be said that PBMA recognizes the non-rationality of decision making in health care and accounts for it through enabling pragmatic decisions to be made. Third, PBMA does not provide a formulaic response to challenging health care decisions. Through a mix of evidence and local expert decision making, explicit decisions are made in a manner thought to best meet the relevant criteria. Precisely because it is based on locally relevant inputs, and relies on local expert opinion, decisions made in one context will differ from those in another. Most importantly, all of the above is achieved by an approach which is based on sound economic concepts.

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Figure 1 Issues for Consideration in a PBMA Study

A. “Pragmatic Considerations”

1. What are the organisational objectives?

Micro level objectives (provider, local)
Macro level objectives (regional, national)

2. What is the organisational context and study setting?

Ownership and leadership (managers, providers, consumers, community)
Timing and stability (organisational reforms)
Institutional boundaries (budgetary, service fragmentation/integration)
Incentive and sanction mechanisms (financial, managerial)

3. Who are the key stakeholders in setting service priorities?

Health service managers & providers, consumers/patients, community
Information provision (education and training of stakeholders)
Roles and responsibilities (values, decision-making criteria, evaluation of services)

4. How should results be implemented?

Feasibility and ownership (ability & desire to reallocate resources)
Change management processes (dislocation of service delivery & staff)

B. “Methodological Considerations”

5. What is the question to be addressed?

Study viewpoint and costs/benefits to be considered (societal, health system)
Micro vs. Macro study design (within vs. between program design)
One-off vs. Long-term (single-shot or framework for long-term planning)

6. What program(s) should be examined?

Feasibility of reallocation of resources (ability to reallocate resources)
Complexity and the study question (manageability of the task)
Disease vs. Client vs. Specialty programs (consistency with organisational setting)

7. How (if at all) should the program budget be constructed?

Define the program and its component parts
Who does what to whom, where and how often (data availability)
Identification, measurement and valuation of costs (data availability)

8. What services should be chosen for evaluation?

Generation of service increments and decrements (advisory panel, literature)
Advisory panel interviews, health production functions, clinical pathways models
Literature review vs. local knowledge (consistency with organisational setting)

9. How should those services be evaluated?

Identification, measurement and valuation of benefits
Appropriate levels of evidence (literature review, local data, local judgement)
Equity and ethical considerations (incorporating other decision-making criteria)

10. How robust are study results?

Validation of results & sensitivity analysis
