Programme Budgeting and Marginal Analysis (PBMA): a case study of the Greek context.

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Introduction

PBMA is defined as 'a framework for setting priorities in health care' [1] and is a systematic and explicit priority setting toolkit, which aims to assist decision makers in identifying the most efficient use of resources. It has been used approximately 80 times in at least 60 health authorities across the UK, Australia, New Zealand and Canada over the last 25 years [2]. PBMA can be used at a micro level, i.e. within programmes of care, at a meso level, i.e. across services within the same general area of care, or even at a macro level, i.e. across all programme areas within a single health organisation [3].

The fact that resources in health care are scarce implies that choices have to be made. Choosing to invest in one option and not in another means that some benefit will be lost. This forgone benefit is the opportunity cost. In addition, the aim of every priority setting activity is to maximise benefits and minimise opportunity costs. One important advantage of PBMA is that it allows consideration of this basic economic principle. PBMA also considers the economic principle of the margin thus facilitating decision makers to begin considering shifting or re-allocating resources in such a way that the overall patient benefit will be improved [4].

Efficiency is one of the main aims in health care and can be defined as 'maximising well-being at the least cost to society'[3]. There are two forms of efficiency, allocative and technical. Allocative efficiency implies changing current practice in order to achieve a greater health outcome at the same cost, while technical efficiency is about changing current practice so that the same health outcome is reached at less cost[5]. In principle, PBMA provides a framework for analysing both allocative and technical efficiency.

Equity is another main aim in providing health care. Equity is about fairness either in distribution of health care, access or even expenditure per capita. The aim of PBMA is to address issues of equity although there are relatively few examples of this in practice. Moreover, it is common for there to be a conflict between efficiency and equity and it is important to accomplish a balance between them[3].

The first step before applying PBMA is to form an advisory panel. The advisory panel should be representative of the organisation or the area under interest and contain an optimum number of members so as not to be too large. The panel may comprise a mix of managers, clinicians, programme administrators and also data and financial personnel. It may also contain patients or members of the public[5].

In applying the PBMA framework, different authors have proposed various formats[3;6;7].
The process can mainly be described by the following 5 questions (Box 1).

Box 1. Five questions to apply PBMA

1. What are the total available resources?
2. On which services are these resources currently spent?
3. Which services are the main candidates for more resources and what are the costs and potential benefits of putting resources into such growth areas?
4. Are there any areas of care, which could be provided to the same level of effectiveness but with fewer resources, so that the released resources are allocated to the candidates from (3)?
5. Are there any areas of care, which should receive fewer resources or even be stopped because a candidate from (3) is more effective?

The first two questions are the Programme Budgeting (PB) element of a PBMA. PB represents the current activity and expenditure and is useful because it ensures that the allocation of resources is explicit. In addition, PB may reveal areas that should be given more attention and enable comparisons with other regions where possible[3].

The last three questions are the marginal analysis (MA) element of a PBMA. The advisory panel is tasked with identifying new services for investment or existing services that should receive more funds. In addition, services for disinvestment could

be identified, so that the released resources are allocated to the candidates for investment. This can be accomplished, and is often the case, by preparing an investment and a disinvestment list where all services are ranked according to pre-defined criteria. These criteria may indicate 'the values of the organisation, the health care system or society at large'[3] (p.63). The services on the top of the investment list are given top priority. Starting from the bottom of the disinvestment list, resources are released and allocated to the top of the investment list.

There is no clear guidance from the literature on how to evaluate the success of a PBMA and a distinct lack of reported retrospective evaluations [8]. In general, PBMA's main objective is to reallocate resources in a way that benefits are maximised. One option of evaluation is to assess if resources have been successfully moved from the disinvestment to the investment list, if this has not been conducted then it can be viewed that PBMA has not achieved its aims. Additionally, if this disinvestment list has not been created in the first place then the PBMA will be viewed as ineffective. However, alternatively, the PBMA framework could be considered useful if it leads to the improvement of the knowledge of the participants regarding the area under consideration or if it improves patient outcomes[9]. Changes in the organisational culture and the way of thinking could also be considered as a positive impact of PBMA as well as whether managers continue to support the use of the framework[1;2].

Background to the National Health System in Greece

Greece's National Health Service ESY (stands for National Health System in Greek) was established in 1983 by the Greek socialist party (PASOK), which first came into power in 1981. Throughout the last twenty years, several changes in the structure and the organisation of ESY have taken place with an overall aim of improving the organisation of services. Until 2001, all hospitals were being funded by the government as public law entities[10]. In 2001, a new law (L.2889/01) established the PESYPs (stands for Regional Health Authorities in Greek), abolished hospitals as legal entities and rested the supervision, funding and coordination with the new-established authorities. This meant that the 128 city hospitals and a number of rural area health centres of Greece were organised into 17 PESYPs, which are committed to regulate, control, manage and support decision-making for all hospitals within their region. Finally, the new law stated that every hospital would be managed by its

governor and the management committee, which would be composed by the governor, the directors of every department of the hospital and the chairman of the scientific committee[10]. The management committee would report to the region's PESYP on all issues regarding the hospital's operations and actions and would also submit the annual hospital budget. The establishment of PESYPs and management committees were clearly a means to decentralise and delegate decision making from the Ministry of Health to the regional authorities. In addition, the intention was to promote more rational financing mechanisms which would take into consideration the specific needs of each region. However, in practice, there is still a long way to go for more explicit actions and decision-making to be achieved. ESY hospitals still lack clear guidelines on how to make decisions about resource allocation or even how to select suppliers[10]. Authors emphasise that there is no formal procedure, not even a budgeting system for purchasing equipment on the basis of need[10]. Instead, it all depends on 'idiosyncratic decisions by the hospital chairman'[10] (p.668), while priority setting is based on historical allocation as well as political judgment[11]. Finally, authors support that the high politicisation that characterises the Greek political system leaves no room for rational changes[10]. Political evaluation criteria seems to predominate in Greece[11], and even when managers or directors are appointed, they tend to be members or sympathisers of the government[10].

The objectives of this paper are twofold. Firstly, to describe and evaluate all published studies on PBMA since 1995 and secondly, to report an interview study designed to assess and understand the current process of commissioning and priority setting in Greece; whether this could be improved; and to consider if it is relevant to the PBMA framework.

Methods

Literature Review

The purpose of the review was to describe and evaluate all published studies on PBMA. Studies published since 1995 in scientific journals were included. Information was sought from two general medical electronic databases: HMIC (DH-Data & King's Fund Database 2005/07, Helmis 1984-1998) and Ovid Medline(R) (1995-2005). Hand searching of the reference lists of studies and reviews were also undertaken. Searches were all undertaken in July 2005. Search terms included:

Programme Budgeting and Marginal Analysis, *PBMA* and *Marginal Analysis*. Papers written in English, French and Greek were included. For the purposes of this review only papers reporting an application of PBMA were included thus all review papers were excluded.

Due to the lack of consensus in the literature as to what constitutes a successful PBMA application, for the purposes of our review, we defined a successful application as either full or part implementation of the recommendations made by the panel, adoption of the framework for future use, greater understanding of the area under interest and a change in organisational behaviour.

Interviews

The aims of the interviews were to cover broad topics on the current process of commissioning and priority setting in Greece; whether this approach could be improved; and to consider if it is relevant to the PBMA framework. Further aims were to assess the level of acceptability of the PBMA framework, to establish whether respondents valued PBMA and whether they consider it as a decision-making tool which fits into the Greek context. For this purpose, a standard set of information was provided to each respondent. The list of questions is presented in the Appendix (PBMA interview plan) and was based on a paper published by Bate et al (2007)[12].

The interviews were conducted August 2005, at a time when a new Government had recently been elected in Greece (elected 2004). One of the first policy changes that this newly elected Government made was to rename PESYPs to DYPEs (Administrative Health Authorities). At the time of the interviews the structure of the DYPEs remained the same as PESYPs however it was well known that the Government was about to announce a change to this structure affecting the manner in which funding decisions were made within the health system. The results of the interviews therefore report attitudes of respondents working within this changing environment.

Respondents included the General Secretary of the Ministry of Health of Greece, the Assistant General Manager of a public hospital of Athens, a Financial Planning Coordinator of a private hospital of Athens, and one Academic in the field of Health

Economics. The respondents were selected so that they were representative of different sectors. The General Secretary of the Ministry of Health was responsible for designing policy in commissioning and priority setting. The General Manager of a public hospital was selected to establish how decisions are made in practice and whether the policies given by the Ministry can be implemented in practice. The private hospital respondent was selected to assess how decision making is made in the private sector and whether there is scope for PBMA in that field. Finally, the Academic was chosen because of his experience in both the academic sector and as a consultant for the previous government. Participants were told that the interviews would be recorded unless they had any objections. All interviews were conducted at the respondent's place of work.

The interview data was analysed using content analysis where a coding frame for explanations, sentiments and phrases was developed by iteration. This coding frame was then applied to analyse the interviews where the main findings are presented in this paper.

Results

Literature Review

The search identified 21 cases (19 papers) published over the last ten years (1995-2005) and conducted from 1991 to 2003. These are summarised in Table 1 and include 9 cases in the UK, 4 cases in Australia, 1 case in New Zealand and 8 in Canada. Some of the key results from these studies are presented and discussed below.

Table 1. Details of PBMA exercises in chronological order, published after 1995, classified in UK, Australia, New Zealand and Canada

Location (reference)	Year of application	Application Area	Results/ Comments
UK			
North Mersey[13]	1991	Ischaemic heart disease (IHD), Mental illness services	Unsuccessful
Newcastle and North Tyneside HA[14]	1991/2	macro	Successful
Greater Glasgow HB[15]	1993	Gynaecology Services	Successful
Mid Glamorgan[16]	1993/04	Maternal and early child	Limitations on data Successful

		services, Cardiovascular disease, Injuries, Respiratory disease, Cancers, Oral health, Pain discomfort, Physical and sensory disabilities, Healthy living,	
Agryll and Clyde HB[8]	1995	General Surgery	Change in policy, not in decision-making
Grampian[17]	1995	Maternity Services	Complicated Useful in the definition of the programme Not enough evidence
Tayside[18]	1995	Child Health Services	Successful implementation of panel's recommendations
Nairn and Ardersier[19;20]	1995/6	Introduction of diabetes clinic in general practice	Successful Assumed no change in benefits
	1996	Introduction of stroke care in a GP-led community hospital	Successful Assumed no change in benefits
Australia			
Central Coast[21]	1995	Community Dental Services	Successful Resource Shifts
South West of NSW[22]	1995	Asthma Services	Successful
Central Sydey Area[23]	1995	Child, Adolescent and Family Health Services	Unsuccessful Lack of Data
South Western Sydney[24]	1998	Coronary Heart Disease (CHD)	Very useful Absence of a mechanism to implement recommendations
New Zealand			
Southern and Midland Health Regions[25]	1997	Respiratory Diseases	Successful No disinvestments Southern: no implementation Midland: part implementation
Canada			
Calgary Health Region[1]	2000	Infant Head Cranial Remodelling	Successful Part implementation, time constraints, Lack of resources
Calgary Health Region[1]	2000	Paediatric and Neonatal Transport Program (Child and Women's Health portfolio)	Successful Reallocation according to the panel's recommendations
Calgary Health Region[1]	2000	Muskuloskeletal (MSK) Programme	Unsuccessful-never got started Lack of top-down support
Chinook Health Region[26]	2000	Surgical Services	Successful
Headwaters Health Authority – Claresholm[1]	2000	Long-term care services	Successful Reallocation according to the panel's recommendations
Headwaters Health	2001	Surgical Services	Successful

Authority – Canmore[27]			Reallocation within the surgical services
Calgary Health Region[28;29]	2002/03	macro PBMA	Successful Efficiency improvements of $42M (CAN) 12 of 15 service growth items were funded

Where PBMA applications were monitored over the long-term, 59% of them were viewed to have a positive impact (defined by the setting of priorities or shifting of resources)[2]. In addition, in 52% of the cases the PBMA framework continued to be applied.

Review of local structure

One issue that emerged from the literature review is that PBMA's success depends on whether participants are taking into consideration the already existing structures and processes of the area. It is important to understand the current priority setting, identify the goals and needs of the region and assess whether and how PBMA should be implemented.

In Chinook Health Region in Canada, PBMA was successfully applied in surgical services. Prior to its application, researchers interviewed care providers and ancillary staff in order to gain an understanding on the current provision of services. This information was then used to develop a flow map of surgical services, which aided the application of the framework[26].

In the Tayside case study on child health services, the advisory panel reviewed relevant policy documents and the literature and also conducted traditional needs assessment, in order to identify the health profile of the children of Tayside and the goals of the region[18]. They then applied the PBMA framework successfully with some of their recommendations being implemented.

Finally, in Calgary Health Region (CHR) in Alberta, PBMA was applied at the macro level. The process was seen as successful since the advisory panel in assessing the list of efficiency improvements 'freed' approximately $42M[30]. The CHR project included five phases of action that were supervised by a team consisting of health

economists, a qualitative researcher, senior managers and clinicians. In phase one, the researchers attended the priority setting meetings of the senior management team over a six-month period in order to observe and understand the organizational culture. They concluded that the organisation was receptive for macro-level reallocations of resources. Moreover, phase two included one-to-one interviews with nine senior managers and clinicians and also focus groups with the eight members of the priority setting committee. The objective was to identify previous priority setting practices in the region, and consider whether the application of PBMA would be feasible. These actions helped researchers to gain an insight on previous priority setting and develop PBMA on their findings.

The issue of high-level support

Further to the need for reviewing the local structure, the issue of high-level support was identified in three additional case studies. Cohen[16] argues that 'a supportive environment facilitates the use of MA' (p.150) in the way that participants feel more secure to involve themselves in the process. In Mid Glamorgan, the success of PBMA was largely due to the supportive environment. The Welsh Health Planning Forum proposed to the NHS in Wales to produce a series of 'Protocols for Investment'. These protocols included suggestions for expansion and reduction for each area. Furthermore, the NHS in Wales produced a set of guidelines for each district that recommended the development of a 'Local strategy for Health', where proposals to investments should match proposals to disinvestments to achieve an overall resource neutral strategy. All these actions assisted in the successful application of PBMA in Mid Glamorgan.

In addition, in the successful application of PBMA at the macro level in CHR, the advisory panel apart from managers and clinical personnel consisted of the entire senior management team of the health region[29]. The senior managers were of great importance in the CHR project as they were in charge of the priority setting process, oversaw all clinical and preventive services, and had authority over all operating dollars in the health region. Their association with the process was pivotal to its success.

Finally, in the South Western Sydney Area Health Service, participants emphasised that the process was highly supported by the director of planning, and that his contribution was central to the success of the project[24].

The issue of the availability of data

The review of the literature also identified the importance of the availability of data to the success of a PBMA. In many case studies, participants faced difficulties in locating relevant data for costs and benefits. Many authors emphasised that in these cases, participants had to base their suggestions on their own value judgements. For example, in the successful application of the framework in the city of Canmore, evidence to inform local decisions was not available. As a result, the panel had to weigh the costs and benefits of their suggestions and centre the process on their value judgments[27]. In contrast, a less successful project was on child, adolescent and family health services in Central Sydney Area Health Service primarily due to the lack of data and information in community services[22].

In the Grampian region of the UK, a project on maternity services was complicated by the fact that it was very difficult to obtain evidence on the outcomes of the proposed changes. This resulted in suggestions that were mainly based on the panel's judgements as well as policy documents of the Scottish Office[17]. This case study is an example of how lack of data can be overcome by the contribution of the panel. Moreover, it is a reference to the importance that should be attached to the composition of the panel[31]. The panel can provide estimates on costs and benefits and can decide if the evidence in the literature is locally applicable or not. Halma and colleagues[31] demonstrate this with the Taber case study, where the panel rejected evidence from the literature regarding benefits of volunteer-led peer support groups, because of lack of applicability to their case.

Furthermore, in Nairn and Ardesier, PBMA was used to assess the introduction of new services in a nurse-run diabetes clinic in general practice and also the introduction of integrated stroke care in a GP-led community hospital[19;20]. Participants faced difficulties in locating evidence on effectiveness and so assumed that the introduction of the services would not affect patients' benefits. Thus, their decisions

were based mainly on the resources spent under the scenarios and in both cases the application of the method was considered successful, since the proposals led to a reduction of the total annual costs.

Finally, it should be noted that the issue of data availability does not apply to every service. Primary care, community services and health promotion are the sectors where the unavailability of data is more intense. In describing the unsuccessful attempt to apply PBMA in North Mersey, Madden and colleagues[13] emphasise the issue of data availability particularly on costs of health promotion, GP prescribing and community services. In South Western Sydney Area Health Service, where PBMA was applied in the area of coronary heart disease, participants faced difficulties in identifying the outcomes of prevention and in estimating costs for treatment[24]. Difficulties in the availability of data, particularly in the primary care sector, were also a main issue in the case study of respiratory diseases in New Zealand[25].

The issue of disinvesting

The literature review also revealed difficulties in disinvesting as a potential problem within PBMA. In some cases, participants were unable to identify enough disinvestments or could not suggest any disinvestments at all. In both the Southern and Midland Health Regions of New Zealand, participants had some difficulties in proposing disinvestments. Eventually, the Midland Health Region implemented only some of the investment proposals, while in the Southern Health Region, participants did not want the authorities to implement any of their proposals[25]. In addition, participants in South Western Sydney failed to identify suggestions for disinvestment and resource reallocation[24], which was also the case in Canmore[27]. As a result, and due to the fact that no additional funding was available, participants had to suggest a secondary option. Finally, in Taber, participants again identified an inability to release resources. Halma and colleagues[31] point out that this might be attributed to the participants' ignorance of other sectors' needs or the hesitation to make suggestions that would have a negative impact on their colleagues. The latter could be justified by the fact that Taber is a small rural town and people are living and working in a tight community.

Interviews

Four individuals were interviewed from different backgrounds (Government Minister, Public Hospital Manager, Private Financial Planning Officer and a University Academic (previously a consultant for the Government)). Three interviewees provided consent to have their interview recorded. The interviewee that declined was from the private sector and provided no specific reasons as to why consent was not given.

The findings from the interviews are categorised into the following themes:

1. Attitudes towards DYPEs (formerly known as PESYPs).
2. Understanding priority setting in Greece.
3. Acceptability of PBMA in Greece.

1. Attitudes towards DYPEs

The interviews explored the attitudes towards DYPEs at a time when DYPEs had simply been renamed but not restructured by the new Government. The following account therefore reflects the views of the respondents towards DYPEs structured in the same way as PESYPs.

All respondents agreed that DYPEs facilitated priority setting for decision makers. The broad guidelines produced by DYPEs on hospital targets and resource allocation were felt to provide more flexibility around decision making. However, as one respondent emphasised, when the board of the hospital had to make a decision on where resources should be allocated, it was only for expansions of up to 45,000 euros (approximately £30,000). For expansions of more than that amount, hospitals have to consult their DYPE to gain approval. Furthermore, all respondents felt that clinicians were not comfortable with the establishment of DYPEs because they considered them to be a means for tighter inspection from the Government. The feeling was that clinicians do not want a more explicit approach to priority setting because they would loose their substantial power in decision making and that this situation affects the priority setting process and as a consequence, the management of the hospital.

Finally, two respondents believed that it was premature to evaluate the success of DYPEs and that more time was required before a formal judgement could be made.

One respondent believed that there was potential for DYPEs to achieve better co-ordination of health care, but to date DYPEs had not demonstrated this.

2. Understanding the priority setting process

The overarching finding from the interviews was the lack of transparency within the priority setting process. The interview was designed to encourage the participants to consider what sources of information are used for setting priorities in the hospital. Respondents had difficulty in understanding the distinction/difference between the various sources of information (so that they could identify potential candidates for expansion) and the criteria that they could use in order to finally select services from these candidates. Not one decision maker mentioned the word 'efficiency' and when they were asked on whether they considered the 'maximisation of the benefit of the population' to be an important criterion they replied that there has never been any assessment of benefits. The basic sources of information for priority setting were the personal opinions of the administrators of each department and the clinicians' views. In some cases, resources were allocated on the services that had more admissions and to those that there was a need in replacing the technical and/or medical equipment. One respondent emphasised that the current priority setting was not explicit at all, but instead decisions were based on what had been funded traditionally. He stated that there is 'decibel rationing', meaning that the one who shouts louder gets what he wants for his department. This "decibel approach" has been highlighted in the literature as an informal approach to priority setting, where politics are intervening in the process[3].

The private sector was found to have a broader set of information sources than in the public sector. National policy, medical opinion, public opinion, epidemiological data, financial data, annual reports and internal reports were the main sources. Medical opinion however was still felt to be the main source of information as one interviewee emphasised "clinicians are our clients and not patients".

Finally, all decision makers insisted that the whole priority-setting process was explicit and political influence was completely absent apart from the academic who felt that the criterion for manager-selection was based in part on a political agenda.

3. Acceptability of PBMA in Greece

The General Secretary of the Ministry of Health emphasised that one of the main goals for 2006 was to provide more 'financial independence' for DYPEs. As he stated, every DYPE would have its own 'local budget' with the aim to assign smaller and specific budgets to the health care organisations in their area. In that way, each hospital would be responsible for its actions and decision makers would have the responsibility to reallocate resources. He insisted that they would try to induce reallocation within services in hospitals as he considered it a way to overcome many financial irregularities. In addition, the General Secretary added that in the case of Greece, the micro approach to PBMA would be more feasible than the macro however he pointed out two important obstacles. Firstly, the significant lack of data and lack of analysts who could implement PBMA. And secondly, a behavioural problem brought about by human resources in health care organisations denying that they are an entity and that they should work together. In other words, a lack of co-operation with no incentives to achieve common aims.

The views of the General Secretary were not shared by the academic interviewed. He believed that PBMA could not be implemented in Greece as there is no institution that will ensure continuity in the priority setting process. In addition, he emphasised that possible obstacles would be the decline of medical ethics as well as corruption from private interests.

The respondent that was interviewed from the private sector felt that there was no place for PBMA in the private sector. He claimed that when setting priorities, decision makers do not start from programme-budgeting. The first step is to identify what are the needs of the market and how they will achieve profit maximisation. If there are not enough available resources for investing, then they proceed with contracting a loan from a bank. Thus, the issue is not about scarcity of resources and how to overcome this but instead about profit maximisation as the main goal.

Discussion

This paper reviews applications of PBMA published between 1995 and 2005 and found 21 cases spread across the UK, Australia, New Zealand and Canada. The

success of PBMA was found to depend on several factors: composition/role of the advisory panel, the level of support provided, the level of understanding of the current priority setting process, data availability and the ability of the panel to produce a disinvestment list. The review highlighted the role of the advisory panel to be pivotal to the process. The panel must be representative and not too large, but more importantly it should be enthusiastic and committed to the process. High-level support as well facilitates the successful application of PBMA and in fact is instrumental in ensuring commitment from the panel. In addition, the literature review identified the importance of the review of the organisation's structure as being fundamental to the success of PBMA. Knowledge of the current priority setting process as well as information on the needs of the population of the area, allows the researchers to adjust PBMA to their particular local setting. The unavailability of data on costs and benefits was a problem in many cases. However this was overcome in some cases by a contribution of value judgments from the panel. The review identified applications of PBMA where the participants had difficulty suggesting options for disinvestment. This difficulty however does not necessarily mean a failure of PBMA as some may argue that improving the knowledge of participants is a positive outcome in itself.

The interviews conducted in Greece produced interesting results. They were conducted at a time within the Greek health system when there were many changes taking place. PESYPs had existed since 2001 and were structured so as to regulate, control, manage and support decision-making for all hospitals within their region. A new Government came into power however in 2004 approximately 10 months before the interviews and had recently changed the name of PESYPs (to DYPEs) but not the structure. These interviews therefore reflected the attitudes of respondents at a time where there was a lot of uncertainty about the structure of the Greek health system but nonetheless represent the views of key individuals towards decision-making from the perspective of different environments (public, private and academic).

Overall, the findings from the interviews demonstrate that PBMA could not be easily applied within the Greek context. Apart from the lack of available cost data and the entirely absent assessment of benefits, the fact that respondents identified a lack of co-

operation of human resources was a significant obstacle. In addition, the high politicisation of the decision making process and the historical nature in the way that decisions are made meant that it was felt that priorities were being set using the 'decibel rationing' approach rather than an approach which is explicit and transparent

One interesting finding from the interviews was that within the public hospital, it was found that candidates for investment are prioritised in a list, which is similar to the 'investment list' in PBMA. However, the criteria under which this list is made are arbitrary, and are based mainly on clinicians' views. This form of priority setting is a long way off from the explicit and transparent nature of a PBMA exercise.

The most interesting finding from these interviews was the need for time to allow a new health system structure to become established and allow key decision-makers to move away from the historical nature of decision making towards priority-setting using a PBMA framework. Changing the manner in which resource allocation decisions are made within a health system like Greece (or indeed any other health system) requires a supportive environment.

The recent changes within Greece have therefore not helped to improve the environment for a PBMA approach to decision making. In 2006, there was a change in the management of the Ministry under the same Government and the old Minister of Health was elected Mayor of Athens leaving a vacant post of the Minister of Health which was assigned to another Member of Parliament. This new Minister of Health has introduced yet more changes to the structure of the health system with the complete abolishment of DYPEs by 2008. Under this new law all decision making will once more be centralised to the Ministry of Health. Understandably this new law has been met with many objections from the opposing political parties who argue that decision making has taken a "20 year step-back".

Acknowledgements

The authors would like to thank Angela Bate from the Institute of Health and Society, Newcastle University for her help in designing the interview plan.

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APPENDIX

PBMA Interview Plan

Words in bold are topic headers. Questions are framed and represented by Q and should be read out to the participant. Bulleted points are possible responses that might need further elaboration.

The interviewee's role

Q1. What are the first things/thoughts that come to your mind when you hear the terms priority setting and resource allocation.

- Focus on the actual process of priority setting and resource allocation rather than the outcomes or results of the process.

Q2. How are the terms priority setting and resource allocation connected to your role within the organisation**.** Refer to your personal experience in setting priorities. At what extent are you involved in that?

- Focus on process of commissioning
- Encourage them to be as specific as possible
- Probe for role in relation to priority setting

National Health Policy – Regional Health Authorities (RHAs)

Q3. I would like to discuss a bit about RHAs (DYPE former PESYP). Do you believe that the 'materialization of the "general" National Health Policy into the "special" Health District', is accomplished?

- How are National Health Policy and Health District Policy dissociated
- What are the targets of DYPE – Comments on 'the establishment of a strategic plan means clear definition of PESYP's priorities, strategies and full targets'
- Is it possible for a Health District to differentiate?

Q4. How does the suggestions and decisions of the DYPE where your hospital belongs, affect your priority setting process? How does the implementation of National Programmes influence your priority setting process?

- What are the consequences and outcomes in any case?
- How does the organisation decide between local and national priorities/needs?
- Which takes precedence?
- To what degree does the need to implement National Programmes prevails over the local development plan and how does this complicate the priority setting process?
- To what extent do national programmes render it impossible to plan locally and address local priorities?

Description of current priority setting process

Q5a. Can you describe for me the process that is currently used to identify local priorities for the organisation?

- Sources of information currently used in determining / identifying short and long term priorities in the organisation
- Types of information used to support priority setting decisions

In completion and enhancement of the answers in question Q5a, the possible supplementary answers of question Q5b are presented to the interviewee

Q5b. **What sources of information are currently used in identifying short and long term priorities? Please rank how often these sources are used.**

Needs assessment	☐	How often?	1	2	3	4	5
		1: rarely				5: very often
Epidemiological Information	☐	How often?	1	2	3	4	5
		1: rarely				5: very often
Demographic information	☐	How often?	1	2	3	4	5
		1: rarely				5: very often
Medical opinion	☐	How often?	1	2	3	4	5
		1: rarely				5: very often
Public opinion	☐	How often?	1	2	3	4	5
		1: rarely				5: very often
National policy	☐	How often?	1	2	3	4	5
		1: rarely				5: very often
Key objectives	☐	How often?	1	2	3	4	5
		1: rarely				5: very often

Economic data	☐	How often? 1 2 3 4 5 1: rarely 5: very often
Annual report	☐	How often? 1 2 3 4 5 1: rarely 5: very often
Other reports or research studies	☐	How often? 1 2 3 4 5 1: rarely 5: very often
Please specify		
Other	☐	How often? 1 2 3 4 5 1: rarely 5: very often
Please specify		

Q6a. How are resource allocation / re-allocation decisions made within the organisation? (i.e. how much money goes where? / to different service areas?

- Methods used to determine how resources are allocated between competing priorities
- How are decisions made to divide up the resources across the communities within you organisation (or various services within your community)?

In completion and enhancement of the answers in question Q6a, the possible supplementary answers of question Q6b are presented to the interviewee

Q6b. **How are decisions made to divide up the resources across the communities within the organisation (or various services within the community)?**

National policies / targets / evidence	☐ Please elaborate	

Top down decision making (i.e. from ministers)	☐ Please elaborate	
Cost Maximisation	☐ Please elaborate	
Other political influence	☐ Please elaborate	
Demands of local health care professionals	☐ Please elaborate	
Organisation's needs	☐ Please elaborate	
Local opinion - Perceived hot spots'	☐ Please elaborate	
Historical trends / patterns	☐ Please elaborate	

Other	☐ Please specify	_____

Feedback/Comments on current process

Q7. Do you think that the current process of setting priorities and allocating resources works well? Can you give examples of when the process has worked well/poorly or any strengths and weaknesses of the current process?

Barriers/Incentives in setting priorities

Q8. What are the barriers that one may face when setting priorities?
Q9. More specifically, what kind of problems are met during the reallocation of resources from one service to another (in releasing and moving resources)

- At personal level
- At organisational level
- Time needed for decision making
- Practical problems during implementation

Improving the priority setting process

Q10a. How can the current process of setting priorities and allocating resources be improved?

- Specific examples and how they would result in improving the process

In completion and enhancement of the answers in question Q10a, the possible supplementary answers of question Q10b are presented to the interviewee

Q10b. **Which of the suggestions below could assist in improving the current process of setting priorities and allocating resources?**

Needs less political influence	☐ Please elaborate	

Needs less provider influence	☐	Please elaborate	
Needs to be more explicit / systematic	☐	Please elaborate	
Needs better data / evidence	☐	Please elaborate	
Needs to take a longer trem view	☐	Please elaborate	
Needs to examine the margins, not total need	☐	Please elaborate	
Other	☐	Please specify	_____

Programme Budgeting and Marginal Analysis – PBMA

In this part of the interview, the respondent of provided with information on PBMA regarding the 5 questions to implement PBMA, the formation of the advisory panel and advantages of PBMA identified by the literature, with the intention to comment on the framework and discuss its advantages and disadvantages. Further, potential similarities with priority setting in Greece are explored as well as the future policy to change the current priority setting.

What is PBMA?

PBMA is a toolkit used broadly at an international level in order to set priorities in health care (UK, Canada, Australia). Decision-making is based on the best available evidence and in the end the 'advisory panel's' input is taken into consideration, proposing possible changes.

5 questions to implement PBMA

1. **What are the total resources available?**
2. **On which services are these resources currently spent? What are the costs and benefits?**

3. **What services are candidates for receiving more or new resources? What are the costs and potential benefits of putting resources into such growth areas? (Ranking – Investment List)**
4. **Can any existing services be provided as effectively, but with fewer resources, so releasing resources to fund items on the growth list? (Disinvestment list)**
5. **Are there any services which could receive fewer resources, or even be stopped because greater benefit per pound spent would be reached by funding the growth option as opposed to the existing service? (Resource Reallocation)**

Formation of the 'advisory panel'

- Representative but not too big
- Medical personnel and managers (depends on the aim of the study)
- Statistician, Financial personnel
- Public (Directly or by using surveys)

The **advantages** of PBMA are:

- Explicit – Rational – Systematic – Feasible
- It ensures the principles of efficiency and equity
- The 'opportunity cost' is taken into consideration by examining resource releases from one service to another in order to achieve maximum benefit (minimising opportunity cost = maximising benefit)
- Marginal analysis – by assessing the marginal cost over marginal benefits, suggestions are 'weighted' and the most efficient mix is chosen
- Maximisation of total benefit
- Political influences are isolated while cooperation and dialogue is fostered

Q11. What do you think about PBMA? What are the advantages and disadvantages of the toolkit? How close is the current priority setting process to PBMA? What could be the possible obstacles of its implementation in Greece?

- Organisational culture and operation
- Acceptance from all involved parties and mood for change
- The formation of 'advisory panel'
- Availability of data
- Collection and analysis of data (costs and especially benefits)
- Lack of time - long-term targets
- Reallocation of resources – the Achilles' Heel of PBMA

Q12. Over the last five years, there have been a lot of criticisms in the press on the Greek National Health Service. Particular concern has been given to the 'lack of planning', the 'non-rationalistic financial mechanisms' and the 'lack of clear criteria regarding decision-making, provider selection and resource allocation'.
Do you believe that there is a will to change all that? What is the current policy of the Ministry of on this?

- Comments on the above
- Policy for the future
- Different policies with previous government
- Emphasis on the fact that the institution of DYPE facilitates the implementation of PBMA – adaptability to local authorities
- Possible pilot study