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Explicit Priority Setting Approaches in Health Care Coverage Policies: A Critical Review and Implications for Further Research

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ABSTRACT

Background: Several explicit approaches are used to make decision on health services coverage and to develop the basic health package. In this study, first the approaches used to prioritize health services were introduced, and then the limitations of each method were reported.

Methods: We critically reviewed market literature regarding explicit priority setting approaches. The current literature focusing on explicit priority setting approaches in health care system was reviewed.

Results: Eight explicit approaches for prioritizing health care were identified: CEA, CEA / BOD, PBMA, HTA, MCDA, A4R, the Value Assessment Framework, and combinational approaches such as MCDA-A4R and PBMA-A4R. Developing the value framework for making a decision, not just informing a decision was needed to be investigated.

Conclusion: This study addressed the explicit health services prioritization methods. The results showed that a value framework approach as one of the innovative approaches that has become increasingly widespread in recent years can help to achieve goals of the health system.

Keywords: Coverage Decision Making, Critical Review, Evidence-Informed Deliberative Process, Priority Setting, Value Framework

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Introduction

Limited resources are important issues that should be considered in health policies (1). The society expects to receive medical services with the highest possible quality. On one hand, an increase in life expectancy led to a significant increase in the utilization of health and rehabilitation services. On the other hand, new medical technologies are growing with a much faster pace than of the health resources (2). It causes a growing gap between resources and health expenditures. Additionally, an increasing amount of budget is allocated to medications and highly sophisticated medical technologies such as orphan drugs and therapy for rare diseases (3). Two decades ago, in most cases, policymakers used implicit priority setting methods to address this challenge. In such methods, the principles of prioritization process are not clearly expressed, the role of stakeholders in the decision-making process is not defined, and the provision of services continues as long as resources are available; furthermore, policymakers are not responsible for unfulfilled needs (4). Implicit methods have been widely criticized in recent decades, and experts have called for increased transparency in decisions such as the development of health services packages and stakeholder participation in the priority setting process. Therefore, policymakers have focused on explicit prioritization in recent years to achieve an acceptable level of satisfaction and acceptability (5). Various approaches have been developed for the explicit priority setting in health services. Each of these approaches has been created and developed in a different ethical and socio-economic context and, therefore, has several strengths and weaknesses. Comprehensive recognition of these explicit prioritization approaches can help policymakers to choose the best one. This study briefly reviewed different explicit health care prioritization approaches. First the initial explanation of each approach was discussed. Then challenges and criticisms were described, and finally some implications of future research were provided.

Materials and Methods

The current literature focusing on explicit priority setting approaches in health care system were reviewed. The critical review method was followed in looking for the studies which directly present an explicit approach in making health care decision. This method focuses on characteristics of different approaches to explore their advantages and weaknesses. The critical review helped the authors to have broader space for thinking about a specific subject. Detailed process of critical review published elsewhere (6-8)

Results

Eight explicit approaches were used for priority setting health care and making coverage decision in the current literature. These approaches are presented in Figure 1.

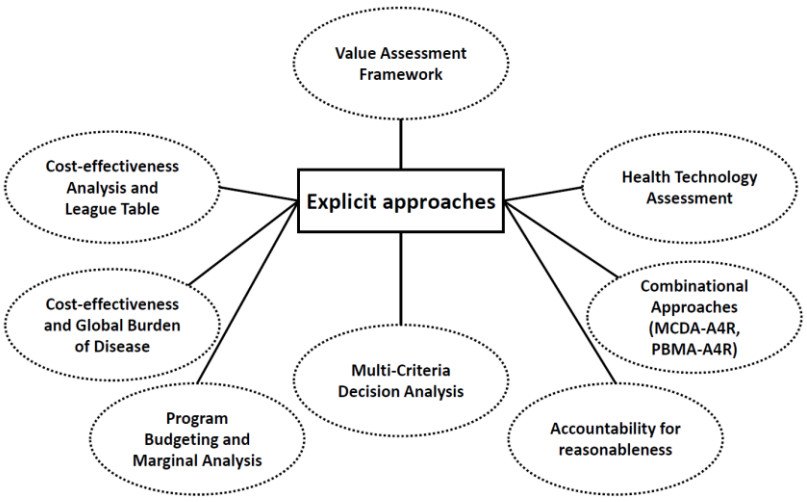


Figure 1. Different explicit approaches in health care decision making

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Cost-Effectiveness Analysis (CEA) and League Table

One of the first systematic approaches of explicit decision on health care coverage is cost-effectiveness analysis. This approach was initially implemented in the 1990s in the Oregon State Health Plan, and it was used as a decision-making method for service coverage. In this approach, the cost per unit of effectiveness (such as QALY or life expectancy) was calculated, and then findings were ranked in a table named the league table (9). The service with the lowest cost per unit of health has the highest priority. This prioritization process brought significant dissatisfaction, since higher priority services were not what they were expected to be (5). For example, dental capping service ranked higher than vital services, such as appendectomy. The authors, in next versions, tried to classify services prior to the cost-effectiveness analysis to overcome such challenges.

Cost-Effectiveness Analysis and Burden of Disease (CEA / BOD)

Disease burden reported in 1990 has helped health policy-makers to become more accurately aware of the impact of diseases in countries. The findings of these studies have shown that most of the mortality and disability that occurs in the world is due to specific diseases. These diseases have a significant relationship with the level of development and income of the countries (10). Based on the findings of the global burden of diseases, some scholars argued that cost-effective health interventions of each disease should be selected to develop the health benefits package. In fact the cost-effectiveness analysis was used to show valuable health care services. This approach was coned Cost-Effectiveness / Burden of Disease, CEA / BOD (11). While CEA / BOD approach is theoretically useful, it is commonly used in low and middle income countries. This can be due to the complex and highly institutionalized health system of upper middle and high income countries (12). One of the challenges facing the approach is making a policy regarding the rare diseases. The small size of the rare disease burden in comparison with most non-communicable diseases such as cancer or cardiovascular disease could assign low priority to the rare disease. On the other hand, some clinical interventions such as orphan drugs or interventions that receive a small number of individuals are generally challenged by this priority setting approach. Recently the new method named Extended-CEA has been developed to combine CEA analysis with financial protection and distribution of benefits in the society. The E-CEA was used in the third version of Disease Control Priorities project.

Health Technology Assessment (HTA)

Development and introduction of new medical technologies that change service delivery and expectations of service, is one of the main reasons of the health care expenditure. The limited resources of health services make new health technologies, which need significant budget, and are more challengeable. Policy makers are trying to identify the clinical and economic effects of new technologies on the health system, and the financial capacity of organizations in order to make the best possible policy (13). Health Technology Assessment, HTA, has been developed as a systematic way of outlining clinical and economic impacts of new technologies (14). A comprehensive HTA emphasizes on ethical, social, managerial and legal aspects of technology; however, the main focus and heart of the HTA is the cost-effectiveness analysis. Although the HTA is not a solid approach of prioritizing interventions, this method is commonly used to decide on new technologies. However, this approach has faced with considerable challenges for making priority setting of heath care services. Most current in-use technologies were used before the onset of the HTA program in the diagnostic and therapeutic process. In most cases, there is no credible scientific evidence of the effectiveness and economic impact of the technology already being used. Other challenges are the required time to prepare the HTA reports and the number of experts in the process.

Program Budgeting and Marginal Analysis (PBMA)

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In many situations the priority setting is not about one treatment option and there are different health care services which should be prioritized. Therefore, allocation of resources between different services and different patients should be considered. To address this challenge, the Program Budgeting, Marginal Analysis approach, and PBMA, have been developed. The PBMA approach is based on two economic principles; the first one is the opportunity cost or the loss of the best alternative when one alternative is chosen. The other one is the marginal analysis which examines the benefits and costs of moving from one area of expenditure to another area to determine if benefits of this change are more than costs. This approach is presented in the consequential framework. The PBMA approach is commonly used in closed budget systems.

This approach has two different but related parts. The first section, retrospectively examines how resources were allocated to monitor the allocation of future resources. In this section, the allocated resources are separated to logical plans and the budget effects of each plan are examined for all costs and outcomes (15).

The second part, based on incremental analysis, evaluates benefits and costs of investment proposals. It also can be used to measure reduction in investment. In this section, after identifying the desired list for entering the process of health care provision and the hit list for excluding service from the process, its economic and clinical impact is calculated. When marginal benefits are higher than marginal cost, the intended action is considered as a good one. The PBMA steps are as follows (1,16):

1. Logical definition of the plans
2. Identifying activities and costs carried out so far
3. Identifying suggestions and options for improving resource allocation
4. Evaluating costs and benefits of suggestions and options for improving resource allocation
5. Consultation with stakeholders and target groups about reallocation of resources
6. Final approval of adopted policy
7. Implementation of the adopted policy
8. Assessing the impact of the adopted policy

This approach is generally applicable at intermediate levels and is less widely used at national and macro levels as a decision-making tool. The PBMA use exhausting data to accomplish; however, the evidences indicated that the important point is the way of thinking in this approach (16).

Multi Criteria Decision Making Method (MCDA)

Explicit prioritization methods have focused excessively on economic benefits of interventions and less attention has been paid to other aspects of interventions. The priority setting in health care is complex, and a wide range of factors and aspects should be considered. In prioritizing health services, factors such as equity, human dignity, satisfaction, and freedom of choice are extremely important issues. Previous approaches could not handle this challenge (13). In order to take all important dimensions into account, the method of Evidence and Value, the impact on decision making framework, called EVIDEM, has been developed. The EVIDEM framework systematically aggregates different criteria for prioritizing health services. There are several techniques to solve this problem, which can be referred to as the Technique for Order Preference by Similarity to Ideal Solution (TOPSIS), Discrete Choice Experiment (DCE). In these techniques, according to experts and previous studies the criteria are selected and the weights of each one are extracted and then ranked in an aggregation model (5).

Although, this method has some limitations, the selection process of the criteria and weights allocated to each criteria highly relies on the subjects' preparation level, position, and attitude toward the research subject (14). In fact, if subjects are not briefed well about the research topic, it is probable that the findings achieved through the MCDM will be misleading. However, collecting a subject set that can represent the study population is a difficult task. Each subject selects criteria based upon his / her personal experiences, non-scientific information, people's opinions, and scientific evidence he / she have studied, which does not necessarily represent the population attitude.

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Another matter is the formulation of the problem. In most cases, the matter is not elaborated well enough and the selected criteria are inserted into the decision making model without considering the level of the criteria. Since several factors are included in health services prioritization, the hierarchy of the criteria should be clarified.

Accountability for Reasonableness (A4R)

In most of prioritization and allocation methods, the focus is on the results of the policies. In order to evaluate the success of an approach, the consequences of the implementation of policies are important and procedural justice is in the secondary place (17). This means that procedural justice is worthwhile when it promotes the ultimate outcomes of policies. These prioritization approaches were criticized by many experts. They argued that in the public domain, given the nature of this area, procedural justice is as important as the consequences of policies. This view had been considered in prioritizing and allocating resources in health services as well. The study of Daniel and Sabin in this field led to the A4R framework development. This framework emphasizes on procedural justice in health care decision-making (18). The framework has four conditions: publicity, relevance, appeals, and enforcement (4). Publicity means health services decision making and their related arguments should be publicly available. Relevance means that the evidence or the arguments used by the stakeholders has to be relevant to the subject of the discussion. The appeals refer to establish a mechanism for challenging final decisions by other stakeholders and citizens. Enforcement means the commitment of the leadership to ensure that the three conditions are met (19). Reports show if this framework is well used in the decision making process, the results of prioritization will satisfy stakeholders more. However the A4R approach has been criticized. Some health stakeholders' technical information will make it difficult for other stakeholders with different levels of information to participate in decision making. The decision-making process may be influenced by the presence of influential and powerful people. The A4R framework will be difficult to use in countries that do not establish a proper problem solving negotiation culture.

Combinational approaches

As it was mentioned, each of the explicit prioritizing approaches comes with weak spots which make selecting a single approach hard for policymakers. Consequently, some scholars moved toward combinational approaches of health services prioritization to overcome the limitations. The attention given to the prioritization process in recent years has generally formed combinational approaches with an A4R framework as basis. Some scholars explained that services prioritization is a value-based process (20). They argued acceptable prioritizing approach should be achieved through defined ethical frameworks. There are two combinational approaches, one is resulted from the combination of MCDA and A4R approaches, and the other is the mixture of PBMA and A4R. The MCDA-A4R approach has been more favored than the other one. This approach is known as the "evidence-informed deliberative process", which includes a six-level process: analysis of the current status; formation of stakeholders' panel, identification of the subject-related criteria, gathering evidence for criteria, deliberation, and finally recommendation for implementation (20). This approach has been used in prioritizing several services related to HIV / AIDS patients in Indonesia and also in prioritization of a number of limited health services in Thailand.

Although proponents of this approach (MCDA-A4R) have claimed that it considers the various values of different stakeholders, and provides a proper framework for prioritizing health services, it does not provide a clear solution to the conflict between the values of the stakeholders. It only states that cost-effectiveness, prioritizing people with the most unmet need and financially protecting patients are values in all countries; while evidences suggest that in different communities, values in prioritizing health services can be very different and varied. On the other hand, this method does not have a theoretical view about the interaction between

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values of society and the criteria used. Since health care coverage is a value-laden judgment and every individual is influenced by his value system, it cannot be expected that taking this method will meet all community values.

Hall believes that limiting the achievement to the society values in health services prioritization is not constrained to the MCDA-A4R approach; however, other methods can reach this goal (21). He expresses that if the cost effectiveness analysis methodology can represent the society values like the MCDA-A4R method, there will be no reason to prefer MCDA-A4R over the cost effectiveness analysis, but just another way to quantify the objectives (21). Lauer et al. (22), critically reviewed the propositions emphasized by Baltussen. They claimed that focusing on the prioritization
micro-process does not solely suffice, but higher levels such as the prioritization macro-process, which can be introduced by the World Health Organization (WHO) and others should be ignored. Gopinathan et al. (23), argued that the analysis domain should be selected beyond the space formulated through the MCDA-A4R method; therefore, more variables and determinants can be considered in the prioritization process and attention can be shifted from health services to public health interventions as well.

Value Framework

In recent years, the increase of health expenses and the growing development of advanced pharmaceutical technologies have created a challenge for health policymakers for covering such medicines. Policymakers have tried to make medicines more available while trying to convince the medicine producing companies to continue their research and development in this field. Due to this duality, a framework called "value assessment framework" has been developed (24). This approach has been promoted by scholars to prioritize and to assign fair price for new medicines. Several types of such approaches have been reported, which all differ in methodology, perspective, and domain (24-27). Even though some of these value assessment frameworks were developed in one geographic domain, they have shown inconsistencies in their decision making criteria. Such frameworks are majorly developed for adding an awareness feature to the decision making process; while a policymaker needs a value framework to make right decisions.

Some scholars believe that priority setting of health care services is a normative action necessitating the value judgment. Different people prioritize services relying on their experiences, scientific knowledge, non-scientific information and their own reasoning. For instance, in the eyes of a physician, an expensive service would be valuable, while this service might not be much important in view of a policymaker. Therefore, without considering this condition that political economy is formulated in relation to services prioritization and coverage, one cannot expect to achieve a decision making framework agreed by all stakeholders. In fact, the current developed value assessment framework does not have a significant difference with cost-benefit analysis (28), or it can be expressed that one way or another, it is a type of combinational approach. Therefore, developing a value framework agreed by main stakeholders and determining the policy economy of health services coverage can be a suitable field of research.

Conclusion

Priority setting in health services is a value-laden action influenced by the social value system of each society. This study addressed the explicit health services prioritization methods. A value framework approach as one of the innovative approaches that has become increasingly widespread in recent years can help to achieve goals of the health system. Studies in this area have some problems in identifying the nature and types of values in the health system and the way of developing a rational hierarchy of values; therefore, a robust method for quantifying them can be a good topic for future studies.

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Conflicts of Interest

The authors declare that there is no any conflict of interest.

Authors' contributions

Nouhi M, Olyaeemanesh A, Naderi M, designed research; Nouhi M, Naderi M, Godarzi Z wrote the paper. Mousavi SM had responsibility for final content. All authors read and approved the final manuscript.

References

1) Peacock SJ, Mitton C, Ruta D, Donaldson C, Bate A, Hedden L. Priority setting in healthcare: towards guidelines for the program budgeting and marginal analysis framework. Expert Rev Pharmacoecon Outcomes Res. 2010; 10(5): 539-52. Epub 2010 / 10/19.
2) Levin C, Chisholm D. Cost-Effectiveness and Affordability of Interventions, Policies, and Platforms for the Prevention and Treatment of Mental, Neurological, and Substance Use Disorders. In: Patel V, Chisholm D, Dua T, Laxminarayan R, Medina-Mora ME, editors. 3rd Ed. Mental, Neurological, and Substance Use Disorders: Disease Control Priorities: Washington; 2016. p: 219-236.
3) Nouhi M, Naderi M, Olyaeemanesh A. The Revision of the Health Benefits Package in current literature: A Concept Clarification . Evidence Based Health Policy, Management & Economics. 2017; 1(4): 253-60.
4) Moosa MR, Maree JD, Chirehwa MT, Benatar SR. Use of the 'Accountability for Reasonableness' Approach to Improve Fairness in Accessing Dialysis in a Middle-Income Country. PLoS One. 2016; 11(10): e0164201. Epub 2016/10/05..
5) Defechereux T, Paolucci F, Mirelman A, Youngkong S, Botten G, Hagen TP, et al. Health care priority setting in Norway a multicriteria decision analysis. BMC Health Serv Res. 2012; 12(1): 39-46. Epub 2012/02/18.
6) Karak T, Kutu FR, Nath JR, Sonar I, Paul RK, Boruah RK ,et al. Micronutrients (B, Co, Cu, Fe, Mn, Mo, and Zn) content in made tea (Camellia sinensis L.) and tea infusion with health prospect: A critical review. Critical reviews in food science and nutrition. 2017; 57(14): 2996-3034.
7) Wilson DM, Nam MA, Murphy J, Victorino J, Gondim E, Low G. A critical review of published research literature reviews on nursing and healthcare ageism. Journal of clinical nursing. 2017; 26(23-24): 1-12.
8) Levison JH, Levinson JK, Alegría M. A Critical Review and Commentary on the Challenges in Engaging HIV-Infected Latinos in the Continuum of HIV Care. AIDS and Behavior. 2018: 22(6): 1-13.
9) Sach TH, Smith RD, Whynes DK. A 'league table' of contingent valuation results for pharmaceutical interventions: a hard pill to swallow? Pharmacoeconomics. 2007; 25(2): 107-27. Epub 2007/01/26.
10) Kapiriri L, Razavi D. How have systematic priority setting approaches influenced policy making? A synthesis of the current literature. Health Policy. 2017; 121(9): 937-46. Epub 2017/07/25.
11) Panatto D, Amicizia D, Ansaldi F, Marocco A, Marchetti F, Bamfi F, et al. Burden of rotavirus disease and cost-effectiveness of universal vaccination in the Province of Genoa (Northern Italy). Vaccine. 2009; 27(25-26): 3450-3. Epub 2009/02/10..
12) Smith-Spangler CM, Juusola JL, Enns EA, Owens DK, Garber AM. Population strategies to decrease sodium intake and the burden of cardiovascular disease: a cost-effectiveness analysis. Ann Intern Med. 2010; 152(8): 481-7, W170-3. Epub 2010/03/03.
13) .Angelis A, Kanavos P. Multiple Criteria Decision Analysis (MCDA) for evaluating new medicines in Health Technology Assessment and beyond: The Advance Value Framework. Soc Sci Med. 2017;188(1):137-56. Epub 2017/ 08/ 05.

[Downloaded from jebhpme.ssu.ac.ir on 2026-11-21]

14) Baltussen R, Stolk E, Chisholm D, Aikins M. Towards a multi-criteria approach for priority setting: an application to Ghana. Health Econ. 2006; 15(7): 689-96. Epub 2006/02/24.
15) Gibson J, Mitton C, Martin D, Donaldson C, Singer P. Ethics and economics: does programme budgeting and marginal analysis contribute to fair priority setting? J Health Serv Res Policy. 2006; 11(1): 32-7. Epub 2005/12/28.
16) Mitton C, Donaldson C. Twenty-five years of programme budgeting and marginal analysis in the health sector, 1974-1999. J Health Serv Res Policy. 2001; 6(4):239-48. Epub 2001/11/01.
17) Daniels N. Accountability for reasonableness. BMJ. 2000; 321(7272): 1300-1. Epub 2000/11/ 25.
18) Daniels N, Sabin J. The ethics of accountability in managed care reform. Health Aff (Millwood). 1998; 17(5): 50-64. Epub 1998/ 10/ 14.
19) .19 Daniels N, Sabin JE. Accountability for reasonableness: an update. BMJ. 2008; 337: a1850. Epub 2008/10/11.
20) Baltussen R, Jansen MP, Mikkelsen E, Tromp N, Hontelez J, Bijlmakers L, et al. Priority Setting for Universal Health Coverage: We Need Evidence-Informed Deliberative Processes, Not Just More Evidence on Cost-Effectiveness. Int J Health Policy Manag. 2016; 5(11): 615-8. Epub 2016/1102./
21) Hall W. Don't Discount Societal Value in Cost-Effectiveness: Comment on" Priority Setting for Universal Health Coverage: We Need Evidence-Informed Deliberative Processes, Not Just More Evidence on Cost-Effectiveness". Int J Health Policy Manag. 2017; 6(9): 543-5.
22) Lauer JA, Rajan D, Bertram MY. Priority Setting for Universal Health Coverage: We Need to Focus Both on Substance and on Process: Comment on" Priority Setting for Universal Health Coverage: We Need Evidence-Informed Deliberative Processes, not Just More Evidence on Cost-Effectiveness". Int J Health Policy Manag. 2017; 6(10): 601-3.
23) Gopinathan U, Ottersen T. Evidence-Informed deliberative processes for Universal Health Coverage: broadening the scope: comment on" priority setting for Universal Health Coverage: We need evidence-informed deliberative processes, not just more evidence on cost-effectiveness". Int J Health Policy Manag. 2017; 6(8): 473-5.
24) de Souza JA, Seiwert TY. A value framework in head and neck cancer care. Am Soc Clin Oncol Educ Book. 2014: e304-9. Epub 2014/ 05/27.
25) Foote J, Secord AA, Liang M, Cohn DE, Jewell E, Havrilesky LJ. ASCO Value Framework Highlights the Relative Value of Treatment Options in Ovarian Cancer. J Oncol Pract. 2017; 13(12): e1030-e9. Epub 2017/10/11.
26) Neumann PJ, Cohen JT. ICER's Revised Value Assessment Framework for 2017-2019: A Critique. Pharmacoeconomics. 2017; 35(10): 977-80. Epub 2017/08/10.
27) Pearson SD. The ICER Value Framework: Integrating Cost Effectiveness and Affordability in the Assessment of Health Care Value. Value Health. 2018; 21(3): 258-65. Epub 2018/03/24.
28) A B. A View from the Bridge: Health Economic Evaluation - A Value-Based Framework? *Health Econ.* 2016; 25(12): 1499-502.

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