Using Economic Evaluation in Policy Decision-Making in Asian Countries: Mission Impossible or Mission Probable?

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ABSTRACT

Objectives and Methods: This article provides an extensive review of literature and an in-depth analysis aimed at introducing potential applications of economic evaluation and at addressing the barriers that could prohibit the use or diminish the usefulness of economic evaluation in Asian settings. It also proposes the probable solutions to overcome these barriers.

Results: Potential uses of economic evaluation include the development of public reimbursement lists, price negotiation, the development of clinical practice guidelines, and communicating with prescribers. Two types of barriers to using economic evaluation, namely barriers relating to the production of economic evaluation data and decision context-related barriers, are identified. For the first sort of barrier, the development of the national guidelines, the development of economic evaluation database, planning and use of economic evaluation in a systematic manner, and prioritization of topics for assessment are recommended. Furthermore, educating potential users and the public, making the economic evaluation process transparent and participatory, and incorporating other health preferences into the decision-making framework have been promoted to conquer decision context-related barriers.

Conclusions: It seems practically impossible to adopt other countries’ approaches using economic evaluation for priority setting because of several constraints specifically related to the context of each setting. Nevertheless, given a better understanding of its resistance, and proper policies and strategies to overcome the barriers applied, it is more than probable that a method with system/mechanisms specifically designed to fit particular settings will be used.

Keywords: Asia, economic evaluation, health resource allocation, health technology assessment, Latin America, policy decision-making.

Introduction

The question of whether it is appropriate and feasible to use economic evaluation for policy decision-making is gaining more interest from decision-makers in Asia [1,2]. This is because health-care resources in every setting are always constrained while unlimited demand is observed. This dilemma is challenging and difficult to answer because there is no country in Asia, except South Korea, that is currently adopting economic evaluation as a formal tool for informing health policy decisions. This article provides an extensive review of relevant literature and an in-depth analysis aiming to address the potential barriers that could prohibit the use or diminish the usefulness of economic evaluation in Asian settings. It also proposes the probable solutions to overcome these barriers.

Potential Applications of Economic Evaluation in Policy Decision-Making

This section outlines potential applications of economic appraisal in developing policies for the rational diffusion and use of health interventions. Although a range of policy instruments for encouraging the use of this method have been employed, and the precise use may differ from one setting to another, the potential use of economic evaluation can be summarized below.

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The Development of a Benefit Package for Public Reimbursement

This may be the most popular mechanism concerning the use of economic evidence in policy development. Several health-care settings such as Australia, England, Wales, and Sweden have formally adopted this approach [3,4]. In Australia, since 1993 it has become mandatory for industry to submit economic evidence to the Pharmaceutical Benefit Advisory Committee (PBAC) if they want their products to be in the Pharmaceutical Benefit Scheme, which is subsidized by the government [4].

Price Negotiation

Drummond et al. [5] illustrated several possible roles of economic evaluation in drug pricing, but the obvious one was the case of Australia, where economic data are submitted to the PBAC for the reimbursement. Nevertheless, a price assumed in the economic evaluation is only considered as the maximum that the firm seeks. If the drug demonstrates good value for money the firm may be awarded a price similar to that assumed in economic evaluation. On the other hand, the price may be negotiated downward based on economic evaluation and other relevant information presented.

Development of Clinical Practice Guidelines

In England and Wales, the National Institute for Health and Clinical Excellence (NICE) considered economic evaluation to be a significant input for developing practice guidelines intended to influence health service delivery throughout the country [6]. This situation is similar in Sweden, where members of the central formulary committee perceived that economic evidence was important in establishing clinical practice guidelines, although
the members identified difficulties in identifying relevant economic studies and interpreting their results [7].

Communicating with Health Professionals

It is believed that information gathering from economic evaluation is useful for both public health authorities and industry to communicate with health professionals. This is because the data derived from economic evaluation are commonly presented in more comprehensive forms than that reported in clinical studies. For example, economic evaluation of osteoporosis drugs report the effectiveness in terms of Quality Adjusted Life Year (QALY) gained rather than fractures avoided or bone mineral density index changed commonly used in clinical studies [8].

Barriers to the Use of Economic Evaluation in Policy Decision-Making

Although economic evaluation is a useful rationing tool, it is far from perfect. This section summarizes key constraints arising from the review of literature related to the use of economic evaluation in policy decision-making. The potential limitations can be divided into two categories: 1) barriers related to the production of economic information; and 2) decision context-related barriers that include a lack of understanding of economic evaluation among the potential users, social expectation in health services, politics, as well as institutional, philosophical, and ethical considerations.

Barriers Related to the Production of Economic Information

There are a number of reasons that make economic evaluation conducted for one setting difficult to use in another setting. These include the differences in population factors, e.g., age, gender, socioeconomic status, and risk behaviors of populations. There were variations of providers and health system characteristics as well as dissimilarity in liability and incentives of remuneration system. It has been well documented that there is a degree of diversity regarding methodological requirements for conducting evaluation across jurisdictions that will greatly affect the transferability of results. Although scholars proposed several solutions to deal with variability in economic studies, the proposed methods are not simple, and nor are they perfect; most of them are still being developed. Therefore, developing the capacity to conduct evaluations in a particular setting is important if economic evidence is to be used in policy decisions in that setting.

Evidence from South Korea [9], Thailand [10], and China [2] revealed limitations of local research capacity. The reviews found that the numbers of economic evaluation studies within these settings were very low compared with countries, e.g., Australia, where economic evaluation has long been accepted for formal use in policy decision-making [4]. This is also the case of limited use of economic evaluation in Latin American countries [11]. The authors suggested that human resources to perform economic evaluation in Latin America need to be increased to facilitate the conduct and use of the method in policy decisions. Moreover, the reviews of economic evaluation publications in Korea, Thailand, and China found that the majority of the studies were vulnerable to bias because of the poor quality of evidence used and deficient reporting features. These will hinder the adoption of the method in policy decision-making because decision-makers prefer to use good-quality and locally relevant information rather than international data.

Furthermore, the use of economic evaluation could be prohibited if it is not available at the right time for making decisions [12]. Alongside scarce research capacities, different operational cultures between decision-makers and researchers also play a vital role. The Thai study found that decision-makers often work in a very tight time frame; therefore, they are unlikely to be able to wait long for evidence [13]. Decisions often need to be made and action taken when windows of opportunity open. Nevertheless, researchers prefer to work within a longer time frame because they want to ensure a perfect study. Economic evaluation will have a limited impact on policymaking if the evidence is available when the intervention has been well established. Because once an intervention becomes widely acceptable among practitioners, restriction of its use will be very difficult.

Given resource constraints, it is necessary that economic evaluations themselves are being prioritized and are focusing on interventions that would assist decisions targeting major health problems that could subsequently have a large impact on population health [14]. In spite of this fact, a review of literature in Thailand shows an absence of economic evaluation publications for 15 of the top 20 major health problems of the Thais [10]. This poor distribution of researches directed toward major health problems could be explained by the relationship between funding sources and the distribution of economic evaluations by disease category. For example, the majority of studies funded by international nonprofit organizations focused merely on diarrhea, malaria, and vaccine-preventable diseases. These were not major health problems of the country but were of particular interest to those organizations. This similar situation was also found in Malaysia where majority of studies on cost-effectiveness and cost–benefit were funded by pharmaceutical companies [2]. The problem of studies not focusing on vital health concerns will definitely diminish the usefulness of economic evaluation in policy decision-making.

Furthermore, although the guidelines for conducting economic evaluation are available in most developed countries, only a few guidelines exist in developing countries [2]. At present, South Korea, China, Taiwan, and Thailand are the only nations having their own guidelines [15]. The absence of a standard methodology in most countries is one of the major barriers that diminish the use of economic results because the guidelines will increase the transparency of the evaluations undertaken by allowing stakeholders to assess the appropriateness of the methods and the quality of evidence used.

Decision Context-Related Barriers

These barriers differ from the ones above because they are related closely to the users’ knowledge, attitudes, and perceptions regarding the use of economic evaluation. The following paragraphs describe each of these barriers.

Lack of understanding of economic evaluation among potential users. There have been concerns about the absence of a clear understanding of economic evaluation among potential users in many settings. Ikegami et al. [16] stated that economic evaluation was a new discipline among health professionals and decision-makers in Japan, and only a few of them were aware of the technique as their main focus was on biomedical sciences, with little and no interest shown in the social and economic aspects of health care. A similar problem also happened in Korea and Thailand where there was limited knowledge and understanding of concepts and applications of economic evaluation among decision-makers. The study in Thailand found that decision-makers misused terminology and often failed to distinguish
between cost analysis and economic evaluation [13]. Yang et al. observed a large variation of knowledge and understanding of economic evaluation among staff at a health authority responsible for reviewing the cost-effectiveness and budget impact data of newly entering drugs for the National Health Insurance Corporation in Korea [17].

Social expectations in health care. The public anticipates that health care perform based on the best interest of patients[18]. It is unlikely that the general public would be willing to leave someone to suffer without help just because the intervention available to him or her does not present good value for money [19]. This expectation could easily create conflict in making health technology coverage decisions if economic evaluation, which concerns collective health benefits, is to be used. A survey of decision-makers and academics in Thailand found that more than 70% of respondents did not agree to exclude a life-saving intervention from a health benefit package just because it was cost-ineffective [20].

Politics. Resource allocation is inherently political, and it has become evident that politics will inevitably influence the use of economic evaluation for resource allocation. A case in point, Thai decision-makers perceived themselves to be the losers if economic evaluation were to be used for making decisions because their power and authority would be transferred to “scientists” [13]. Moreover, health professionals of the Japanese Medical Association considered that there might be a loss of clinical autonomy if the method was used for health-care rationing. As a result, the organization’s position is clearly opposed to the economic/efficiency concept [16]. In settings where economic evaluation has been used it is clearer that political considerations can play a major role in the coverage process. This is the case in the selection process for the technologies to be appraised by NICE and the development of clinical guidelines for trastuzumab (Herceptin) [21].

Social institutional barriers. Given that social institutions are, in essence, a set of repeated behaviors that are driven by social norms, values, and rules, they influence decision-makers by encouraging them to choose an option that is most conducive to the norms and values that are linked to their institutional affiliations and the achievement of their organization’s goals. In Thailand, institutional factors seem to influence all stakeholders’ use of economic evaluation for making coverage decisions with different directions. The use of economic evaluation would ideally support the institutional ideology of both hospital directors (to improve efficiency and to control costs) and academics (to use explicit criteria that are accepted by them) but not the institutional modes of conduct and interests of professional institutions and health workers (to maintain their clinical autonomy) [13]. For decision-makers at the Ministry of Public Health, the use of economic evaluation alone would not be enough to serve the institutional interests because there are other strong considerations such as total budget size, equity, social solidarity, and protection against catastrophic health expenditure [22].

The early development of modern health-care services in many countries in Asia were closely associated with royal patronizations such as total budget size, equity, social solidarity, and protection against catastrophic health expenditure [22].

In response to the problem of poor quality of economic evaluation available for decision-making there is a need for a set of methodological guidelines that will facilitate the use of standard methods and a high quality of evidence for studies. A uniform methodology will increase the transparency of studies by allowing readers or users to assess precisely what the analysts have done and whether the method was appropriate [23]. Furthermore, these guidelines will ensure standards that enable comparisons of value for money across health interventions. This is the case because the difference in a cost-effectiveness ratio is likely to reflect true differences between the interventions being evaluated rather than differences in study methodology [10].

Making Economic Evaluation Available at the Right Time

Two ways to improve the availability of information for decision-making in a timely fashion are suggested. First, economic evalu-
ations should be planned and used formally, as requirement by the law, rather than on an ad hoc basis. It is possible for economic evaluations to be conducted and used as routine information, for example, for the pharmaceuticals listed in Australia [24], or they can be used with a clear time line for evaluations, as is the practice by NICE [25].

Second, the development of an economic evaluation database is crucial in assisting its users to gain better access to reliable information for competing health technologies [26]. Although there are a number of international databases that include economic evaluation literature, they usually include only evaluations published in academic journals and in English [27]. Nevertheless, many economic evaluations conducted in several settings, especially in developing countries, have been published in grey literature, e.g., theses or research reports and using local languages. This makes it more difficult for the review [26].

**Prioritization of Topics for Assessment**

It is necessary that economic evaluations focus on interventions to improve decision-making, although decisions regarding the prioritization of investment in economic evaluations do not have to be based purely on disease burden. This is the case because to be worthwhile, there have to be available and proven effective interventions and/or opportunities for studies to add their values into policy decisions. Here the recommendations, modified from Goodman [28] and Sassi [29], state that topics for assessment should be in line with one or more of the following key concerns:

1. interventions that will cause a significant increase in health expenditure, or a significant budgetary burden, or a poor return on investments, or interventions that will drain a high level of resources from other interventions;
2. interventions likely to offer significant improvement in health outcomes but have not been widely accepted;
3. interventions likely to have significant adverse effects in terms of health outcomes, ethical implications, and organizational impact;
4. interventions likely to have a socially undesirable redistribution of resources or health outcomes.

**Educating Decision-Makers and Health Professionals**

Because of a lack of understanding of economic evaluation among potential users, the users will face challenges in communicating with the public about its use in policy decisions [13]. Economic evaluation is only likely to be used if the users have the capacity to use it and to explain it to others. Therefore, it is necessary to educate the users about the method and for them to become confident in interpreting the evidence.

**Educating the Public**

The need to raise public awareness regarding the fact that health-care resources are limited and that rationing is inevitable is surely the right thing to do because it is apparent that decision-makers are sensitive to the interests of the public. Decision-makers are reluctant to support the use of economic evaluation because it is difficult for them to explain to the public their reasons for not providing care [13].

If the public were well educated about the economic evaluation, they may accept or reject the method. But at the very least, public awareness will increase public trust in the decision-making process. It is possible that the public might accept the limitations of resources and the use of economic evaluation. It should be noted that the general public has fewer political and institutional barriers than politicians. If the public accepts the use of economic evaluation, it will be easier and more legitimate to adopt the method for decision-making.

**Making the Economic Evaluation Processes Transparent and Participatory**

Transparency in conducting economic evaluations is a major concern for all stakeholders in every setting. Both public and private payers usually want to be involved in the evaluation process to ensure that the studies are done in a transparent way and achieve a high standard. To do this it is recommended that stakeholders are involved from the beginning, i.e., setting and fine-tuning the research questions. While the study is being conducted, stakeholders can be involved as input experts to inform and verify information used in the study. At the end, it is also necessary that the preliminary results are presented to these stakeholders to validate the findings and collectively formulate policy recommendations [30].

**Incorporating Other Health Preferences into the Decision-Making Framework**

The QALY maximization concept of economic evaluation is not the only goal in health-care resource allocation [31]. Equity, necessity (severity of disease), social solidarity, and protection against catastrophic expenditure also play a significant role [32]. In proposing the use of economic evaluation, it is not necessarily the case that other criteria concerning resource allocation must be eliminated. Economic evaluation can be supplemented with equity, solidarity, and economic security criteria to enhance the political and public acceptance of a health-care package. Therefore, it would be interesting to see an alternative approach for economic evaluation that incorporates other resource allocation criteria.

**Conclusion**

There are potential areas for the use of economic evaluation for policy development. Nevertheless, empirical evidence from Asian and Latin American countries suggests that using economic evaluation for decision-making appears to be more complicated than is commonly presumed to be the case. Two types of potential barriers to using economic evaluation, namely barriers relating to the production of economic evaluation data and decision context-related barriers, have been identified in this article. It is necessary to distinguish between these two barriers when the feasibility of using economic evaluation is considered. To achieve a substantial increase in the impact of economic evaluation in decision-making, different strategies are needed to overcome the barriers.

It is noteworthy that the barriers and solutions addressed in this article may not be completely generalizable across health-care settings because of differences in health-care infrastructures, human resource capacities, institutions, and incentives as well as social, political, and ethical factors inherent in each health-care system. Nevertheless, this article provides a wider and more comprehensive view in looking at potential barriers and solutions that can be applied to assess the feasibility and facilitate the use of economic evaluation or other resource allocation criteria in other settings. It also raises concerns regarding the importance of developing health-care infrastructures and human resources for evidence-based policy decision-making.

Lastly, it seems practically impossible to adopt economic evaluation using either Australian or European styles for setting
priority in the likes of Asian countries because there are several constraints specifically related to the context of each health-care system. The ideological and normative values of society concerning health resource allocation may greatly differ between Western and oriental settings. Resources and infrastructures for conducting economic evaluation are more limited in Asia compared with those in Western countries. As a consequence, each health-care setting needs to initiate its own system/mechanisms for the use of economic evidence for prioritizing health resources. Given a better understanding of the resistance to the use of economic evaluation, and proper policies and strategies to improve the feasibility and acceptance of using economic evaluation, it is more than probable that economic evaluation will be used for guiding policy decisions instead of the imprecise, inconsistent, and unaccountable practice of health-care prioritization, which still exists in many health-care systems in Asia.

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