

Economic Evaluation of Health Service in Covid-19 Situation

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Abstract

This paper presents economic evaluation of health service in Covid-19 situation. The concept of economic evaluation of health service is from critical questions about the benefits of medical technology for society. Medical-health science must be applied in society to reduce the disease in public health indicators. To reduce the burden of disease, various medical and health technologies are available. In this framework, we can see the process of selecting technology for handling the health problems, such as, the initial thinking of the burden of disease that must be handled. From this initial thinking, there are health service technology options that can be used to reduce the burden of disease. The technology is then tested under ideal conditions to determine whether health measures are having an effect (efficacy tests). If in this efficacy test, the health measure is useless, it will be stopped. If it is useful in its test, then the health action will be at the implementation in the field containing various key words such as effectiveness, efficiency, and evaluation with clear indicators to assess the success intervention in the community.

Keywords: economic evaluation, health service, community, framework, health sector

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1. Introduction

In an applied science, there is a framework for evaluating medical-health technology. This framework is very interesting related to the economic evaluation of the health sector [1]. This framework is shown in Figure 1.

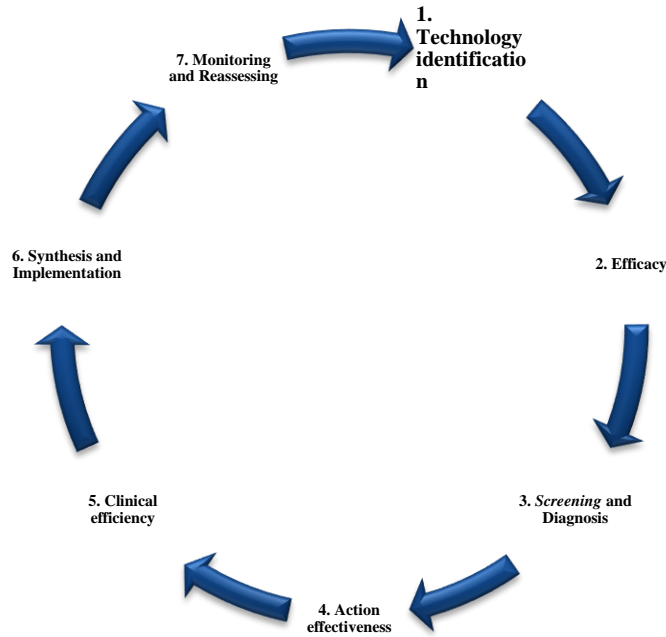


Figure 1. The technology assessment iterative loop framework

In this case, one of the indicators used is an economic measure [2]. This framework is in line with the basic concept of management science in which the inputs and structures must be organized in a good process to achieve the best possible (measurable) outcome [3]. Along with this concept, there is a systematic economic evaluation method for health service [4]. Two important things in economic evaluation. The first is economic evaluation means including costs and the result using the cost [5]. Second, economic evaluation always contains activities to compare among alternative health service options [6]. In this case, economic evaluation is "The comparative analysis of alternative courses of action in terms of both their costs and consequences" [7]. Therefore, the main benefit of economic evaluation is to identify, measure, assess, and compare the costs and consequences of the alternatives considered. Figure 2 below shows the principles of economic evaluation.

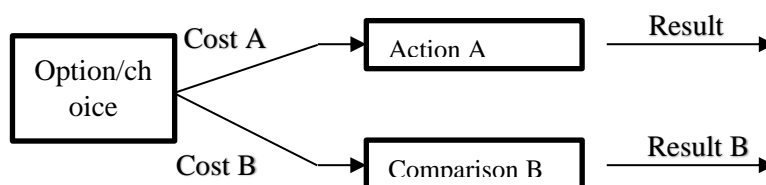


Figure 2. The principle of economic evaluation comparing the alternatives

Figure 2 shows that the economic evaluation compares the options between various alternatives. In this case, for example, there is a comparison between action A and comparison B. The economic evaluation can be used in understanding the evaluation action concept or health technology [8]. Traditionally, in the hospital and health sector in general, evaluation is often carried out to test the efficacy or effect of drugs, tools, and procedures [9]. This testing is comparing two actions. This can be read in various medical journals which report a lot of evaluation research results [10].

2. Economic evaluation classification

The type of evaluation measures results more than the action cost as illustrate in Table 1 below. In cell 1A, 1B, and 2, there are no comparisons of alternatives (only one action or program is being evaluated). Actually, evaluation must have the meaning of comparing one another. Therefore, the “evaluation” in this cell is not really an actual evaluation, but rather a picture. In cell 1A only, the action result is checked, and it is referred to as a result description. In box 1B, because only the costs are seen, these are referred to as cost figures. Because it does not look at the results, it cannot be called a full economic evaluation.

Table 1. Economic evaluation classification

Are the costs (inputs) and outcomes (outputs) of alternatives examined?

	No		Yes
Are there comparison between two or more alternatives?	Assessing the result	Assessing the cost	
	1A Some are evaluated	1B Some are evaluated	2 Some are evaluated
	Result Illustration	Cost Illustration	Cost Result and Illustration

Yes	3A Some are evaluated Efficacy or effectiveness Test	3B Some are evaluated Cost Analysis	4 Full Economic Evaluation Cash- minimization Analysis Cost- effectiveness Cost-utility analysis Cost-benefit analysis
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Cell 3A and 3B have a comparison between two alternative health action, but they do not calculate costs. In cell 3A, this is referred to as an effectiveness evaluation that is mostly done in clinical test. In cell 3B, only the cost is compared, so this is a cost analysis. Cell 4 is a full economic evaluation in which costs and outcomes are compared. There are four types of full economic evaluation, namely cost-minimization analysis, cost-effectiveness analysis, cost-utility analysis, and cost-benefit analysis [11].

3. Cost Analysis

This full economic evaluation has the characteristic that the results of the two alternatives measured are the same [12]. Thus, the input or cost components of the two alternatives will be calculated to obtain data on which action has the lowest cost [13]. This evaluation is mostly done in various minor surgical procedures [14]. For example the comparison of a day surgery for hernias and hemorrhoids compared to current treatment techniques [15].

If the outputs (outcomes) of these project action is not the same, then the result and cost are measured using the cost-effectiveness method. In this case, the outcome is measured by the natural health status indicator, for example life span extension [16]. Other health status indicators, for example; healing, death avoidance. This measurement requires the outcome data in the form of utility or life use [17]. In the realm of health economics, there are various

methods to calculate the life usefulness. One of the most popular is based on the concept of Quality Adjusted Life Years (QALY) and to calculate the disease burden of Disability Adjusted Life Years (DALY). QALY calculation is based on the life period combination and life quality. In the hospital application, this analysis is important to consider the decision to use expensive technology for patients who are not likely to benefit much [18].

4. Conclusion

If the cost and outcome evaluation uses the same units, usually with a money value, the analysis is a cost benefit analysis. Because it uses the same size, it can use a benefit or cost comparison as its unit. This understanding of economic evaluation becomes the basis in determining whether the hospital actions are ethical or not. However, the difficulty often faced in daily practice is the absence of data on economic evaluation for various clinical procedures or medical technology equipment. In addition, calculating the cost of economic evaluation is a very difficult thing. It can be understood that economic evaluation using model is still rarely used in making management decisions in hospitals in Indonesia.

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