Economic evaluation in HTA

Introduction

Assessing the impact of any technology requires comprehensive information that reflects what is likely to happen in a health system or society. Good analysis requires the use of expert advice and methods from the various disciplines that are used as inputs.

The increasing role of economics in health policy and health decision-making has been somewhat controversial. In a world with infinite resources for health and healthcare, economic evaluation would play a minor role. However, in ‘real-world’ health systems where scarce resources must be allocated, economic evaluation can provide information that assists decision-makers.

In addition to methodological issues in economic evaluation, the context in which the evaluation will be used and the perspectives from which the evaluation will be done (for instance, which costs and benefits are counted) are critical for the use of economic evaluation in health technology assessment (HTA).

Economic evaluation: Comparing relevant alternatives

Economic evaluation is a comparison of the costs and consequences of at least two choices. Where new technologies are concerned, an economic evaluation typically compares the new technology against the current standard-of-care treatment. Economic evaluation is often called a ‘cost-effectiveness’ analysis, as it is a combined analysis of costs and clinical effectiveness. It is important to highlight that the analysis

is not of the costs associated with a disease, but rather, how those costs might change as a result of introducing the new medicine.

Of course, the most desirable solution is to lower costs and improve health outcomes important to patients. However, when evaluating how costs will change with the introduction of the new medicine, it is also important that the right comparison is made. If a new medicine is compared with a very expensive alternative that is not often used, it will look more attractive, but the comparison is a flawed one. In order to link health effects and costs, one must have good information on both. Decision-makers need to understand how the new medicine compares with the existing standard of care treatment, and the economic implications.

Examining all relevant costs

The first part of conducting a ‘cost-effectiveness’ analysis is an estimation of costs.

Costs are a product of resources, such as:

- Units of medicine
- Devices
- Staff hours
- Facility time

The unit cost is the cost incurred in order to produce, store, and sell one unit of a particular product; the unit cost includes all fixed costs and all variable costs involved in production. Ideally, unit costs are a standard measure of the real value of a product, but in practice these are often estimated through interviews or accounting data.

The costing of a resource must be carried out in a clear and transparent manner using appropriate costing methods. For example, when costing practitioner services, care must be

taken to distinguish between ‘charges’ (the amount billed by the practitioner) and ‘costs’ (the actual price for such services), particularly where physicians are able to charge different fees to different populations or insurance providers.

Economists must also decide whose costs to include in the assessment. For example, reduced work capacity causes productivity losses: People who are unable to work are unable to earn an income and contribute to the economy (for instance as taxpayers). If the analysis is being conducted from the perspective of a health facility such as a hospital, these costs may not be included. Even among evaluations claiming to be based on a particular situation, costs and outcomes may vary widely or be incorrectly applied.

Using a standard approach

Given this potential for variation, it is essential, within a high-quality assessment, that the rationale behind cost estimate and health outcomes and the sources of data used to assess these are clearly documented. Many health systems have developed guidance for economic evaluation. This avoids a situation where an evaluation of one technology looks more attractive than another simply because the analyst used different underlying assumptions and approaches during the assessment.

A database of such guidelines is currently maintained by the International Society for Pharmacoeconomics and Outcomes Research (ISPOR)[1]. Despite the availability of these guidelines, many are often not properly adhered to. This can lead to inconsistent or overly favourable or overly negative findings in some cases.

Good clinical effectiveness assessment

Once all costs are identified and have been calculated, analysts must compare the costs of different choices to the clinical effectiveness of different choices. Undertaking a cost-effectiveness analysis requires an analysis of clinical effectiveness. In some cases, analysts of new medicines may be tempted to assume that a new medicine works equally well as available choices, and simply focus on costs. While this may seem to be an efficient way to examine the value of a new medicine, in reality, new medicines are seldom ‘equivalent’ to other medicines.

Scrutinising the methods and outputs

Economic analysis may have a large number of inputs. There are multiple aspects that may be affected by a new medicine, and each must be properly evaluated and analysed. Analysis of costs may also need to be adjusted for inflation or other factors. There is frequently no one right way to combine data; a sound evaluation will use multiple approaches and compare the impact of choice of methods of analysis on the results.

While a cost-effectiveness analysis could be based on the costs and outcomes observed from a single study, this is rarely the case. More often, analyses are based on a number of different sources of information and this information is mathematically processed.

The best way for an HTA body to ensure that an analysis is balanced and adheres to guidelines is to create the economic evaluation from the beginning. However, this can be an expensive and time-consuming endeavour. HTA bodies may also lack critical insight or information that is held by the

manufacturer. While some HTA bodies do create their own models and analyses, most do not, due to the expenses and time required.

The following questions can be used to guide assessment of the usefulness of a cost-effectiveness analysis:

1. Were the right choices compared?
2. Were all relevant costs included?
3. Were guidelines used?
4. What was the source of the effectiveness information?
5. Was an original study undertaken or is this a review of a manufacturer analysis?

References

1. International Society for Pharmacoeconomics and Outcomes Research (2015). *Pharmacoeconomic Guidelines around the World*. Retrieved 8 December, 2015, from https://web.archive.org/web/20161002064949/http://www.ispor.org/peguidelines/index.asp