Introduction

The goal of health care activities and programmes is to improve the health of individuals; to achieve this end, technology has undergone great developments.

Technology can be defined as 'any technique, tool, physical equipment or method which increases or optimizes any human capacity'. Technology applied to health care, thus, would be 'any instrumentation, equipment, drug or procedure used for health care, including the administrative support to implement it'. Accordingly, health technologies can be preventive, diagnostic, curative, rehabilititating or palliative.

In its daily activity, a health service may choose between alternative actions; on the other hand, human and health care resources are limited. Limitation is the critical point as it necessarily leads to shifting resources away from beneficial applications to other uses, also beneficial. For instance, enlarging a coronary care unit may involve limiting the palliative care of cancer patients. The concept 'cost–opportunity' applies to this notion:\(^1,2\); it indicates the value of the best alternative action, which is discarded when any given choice is made. This economic concept of
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cost usually does not correspond to the historical or accountable cost, which only reflects the monetary cost generated by an activity. It has a subjective component that changes along with the circumstances and should be known before making a decision.

The clinician, when diagnosing and treating individual patients, usually orders the best tests and therapies on the basis that the benefit of the patient is the first priority regardless of cost. However, the observation that many individuals sacrifice their health in order to consume products that are damaging to their health, such as smoking, excessive alcohol or excess food makes the traditional view of health as an absolute good that should be acquired independently of costs questionable.

Economists are keen on efficiency, which, in a broad interpretation, means to ensure that the value of the input for any activity is greater than the value of what has been sacrificed. This definition of efficiency assumes a knowledge of the processes to be evaluated. Thus, when faced with the development of each new technology, we should formulate the following questions:

1. Amount of technological process provided: to what extent will a more accurate or earlier diagnosis be provided by the new system?

2. Clinical or diagnostic impact of the new technology, depending on the prevalence of the evaluated disease and the sensitivity and specificity of the test. It is important to assess the new technology and its actual results within the clinical context, as a test may be inefficient only because of improper use.

3. Effects on health status.

4. Cost of the disease.

5. Acceptability of the new technology and satisfaction with it, from both the physician’s and patient’s point of view. A sociological approach is necessary to evaluate this aspect.

6. How appropriate is the new technology in the context of where it is to be used (basic physical setting for the operation of a new apparatus)?

Economic evaluation is an instrument to measure the alternative actions in health care. To this end, the consequences for all the potentially involved subjects, both positive (benefits) and negative (costs) should be known for each possible action. Costs should be assessed with respect to the benefits to be obtained with the best alternative use of resources. The most elusive element to be measured is the change in health status of the persons involved by the activity being evaluated.

Techniques for economic evaluation

Health activities or programmes combine physical and human resources to obtain positive changes in the health status of groups or individuals. Therefore, the components of the economic evaluation will be the value of the resources used and the value of the effects produced. Whereas resources are usually measured in money, a monetary value is much more difficult to obtain from the point of view of the benefits in health status. Three specific types of economic evaluation can be distinguished, depending on the type of effect:

- Cost–benefit analysis: identification, measurement and evaluation in monetary terms of the social benefits of the different options.