

# General guidelines for economic evaluations from the Pharmaceutical Benefits Board (LFNAR 2003:2)

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Decided on April 24, 2003.

The Pharmaceutical Benefits Board has published the following general guidelines for economic evaluations submitted with applications for the inclusion of a medicine in the pharmaceutical reimbursement scheme, according to paragraph 15 (2002:160) of the law on pharmaceutical reimbursement.

## **1. Overview**

These guidelines are aimed at companies intending to apply for the inclusion of a drug in the pharmaceutical reimbursement scheme and who, in connection with their application, enclose a health economic evaluation. For the Pharmaceutical Benefits Board the guidelines constitute a preferred approach to drawing up a health economic analysis. The majority of the points presented below can also be valuable in the planning and conducting of health economic evaluation studies with a view towards a pending application. The guidelines should not be interpreted as a manual rather as a support tool when drawing up applications and studies.

In certain situations, there may be good reason to deviate from the guidelines on certain issues. When assessing an application, the Pharmaceutical Benefits Board will take account of the particular conditions that enabled an applicant to apply these guidelines.

## **2. Which costs and revenues should be included?**

The health economic analysis should be done from a social economic perspective. Amongst other things, this means that all relevant costs and revenues for treatment and ill health, irrespective of the payee (county council, local authority, state, patient, relation) should be considered. The information must describe the situation in Sweden.

## **3. Choice of an alternative for comparison**

The costs and health effects of using the drug in question should be compared with the most appropriate alternative treatment in Sweden (e.g. the most used). This could be drug treatment, another treatment or no treatment at all. In making calculations, the reference point should be practice applicable in Swedish medical treatment. If existing randomised clinical trials do not offer a relevant treatment alternative for Swedish conditions, the analysis should be supplemented by a model calculation. The calculations carried out should be shown so that the assumptions and procedure are evident.

## **4. Choice of patient group**

The analysis should include the whole patient population to which the subsidy application refers. Separate calculations should be made for different patient groups where the treatment is expected to have different cost-effectiveness (e.g. separately for men and women in different ages and with differing degrees of severity for the illness/symptom or with different risk levels). The purpose of a health economic evaluation is to identify for which patient groups or indications a drug is cost-effective – it is never the medication itself which is cost-effective, rather the use of it. If the results from randomised clinical studies only contain partial amounts of the patient population to which the application refers, modelling should be undertaken to illustrate cost-effectiveness in the remaining patient groups. An estimation of the number of persons in each patient group in Sweden should be attached.

## **5. Analytical method**

Cost-effectiveness analysis is recommended, with quality-adjusted life years (QALY's) as the measure of effect. In treatments that mostly affect survival, both QALY's and gained life years should be shown. If so-called surrogate end-points are used, the account should also include modelling from these end-points to illustrate the effects on mortality and morbidity, i.e. QALY's gained. The same applies to other types of events studied which are usual in clinical studies (e.g. expected number of heart attacks

or migraine attacks). If it is difficult to use QALY's (e.g. with heavy pain over a short time in connection with treatment), then a cost-benefit analysis with the willingness to pay may be used as a measure of effect. If there is supporting evidence that the drug to which the application refers has the same health effect as the best comparable treatment, a cost comparison may suffice.

## **6. Costs**

All relevant costs associated with treatment and illness should be identified, quantified and evaluated. The production loss for treatment and sickness should also be included (estimated using the human capital method). Unit costs and quantities should be presented separately as far as is possible so that a distinction can be made between price and quantity. It should be clear what year prices represent. Apoteket's Sales Price (AUP) for medicine must be used. If the treatment affects survival, then the costs for increased survival – total consumption less total production during gained life years – should be included.<sup>1</sup>

## **7. Calculation of weightings for life quality adjustment**

QALY-weightings should be based on methods such as the Standard Gamble (SG) or Time-Trade-Off (TTO) methods. In a second instance, QALY-weightings should be based on the rating scale method. QALY-weightings can be based either on direct measurements with the above-mentioned methods or indirect measurements (where a health classification system such as EQ-5D is linked to QALY-weightings). QALY weightings based on appraisals of persons in the health condition in question are preferred before weightings calculated from an average of a population estimating a condition depicted for it (e.g. the "social tariff" from EQ-5D). Using weightings for current health conditions collected from previous studies may be a solution.

## **8. Timeframe**

The timeframe for the study shall cover the period when the main health effects and costs arise. For treatments affecting survival a lifelong perspective must be used in order to adequately calculate life years gained. This means that extrapolation must be carried out for the period outside the accessed data from clinical trials. This is then done via modelling (see also Point 11). That the timeframe is lifelong does not mean the analysis should be based on lifelong treatment. For chronic illnesses where cost-effectiveness varies with age it is often reasonable to assume a treatment period of one to five years in the analysis. This is so the calculated cost-effectiveness ratio reflects cost-effectiveness at each age.

## **9. Discounting**

Both costs and health effects should be discounted by 3 per cent. In the sensitivity analysis (see Point 10), the calculation should also be carried out using 0 and 5 per cent, as well as a calculation where costs are discounted by 3 per cent and health effects by 0 per cent.

## **10. Dealing with uncertainty in the results**

The sensitivity analysis of central assumptions and parameters is an important stage in health economic analysis.

## **11. Using model analysis**

Analyses based on good empirical data carry weight. However, it is sometimes necessary to use modelling so the health economics analysis covers the relevant timeframe. Modelling is sometimes useful for achieving better external validity in clinical trials (adjusting for differences between clinical trials and clinical practice), or for adjusting clinical trials conducted in another country to Swedish conditions, e.g. it can be appropriate to use a health economic model to combine information regarding a therapy's effect from international randomised clinical trials with specific Swedish information about treatment practice, costs and characteristics of the patient population. Models should, as far as is possible, be validated internally and externally.

## **12. Presentation of methods and result**

Methods, assumptions made and detailed data shall be shown so clearly that the different steps in the analysis are easily followed. Cost-effectiveness ratios should be calculated based on the differences in costs and effects (QALY's) that exist between treatment alternatives (incremental analysis).

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<sup>1</sup> The Pharmaceutical Benefits Board secretary's office can assist with data from Sweden on consumption less production at different ages to facilitate this calculation.

### **13. Quality control**

A health economic study which has been peer reviewed and published in an international scientific journal has undergone a form of quality control. If the study is unpublished, greater demands are placed on the possibility for quality control and transparency. By way of example, simulation models should be carefully described and enclosed on diskette or CD-ROM. Detailed data such as probabilities, costs, transition probabilities, etc. should be attached in the set of tables. In addition, the author's name and place of work should be clear, as well as their relationship to the applicant company.

### **14. Reference literature**

The above guidelines do not answer all possible questions. As a further aid in drawing up health economic evaluations, reference is made below to international guidelines and textbooks on the subject. The following are recommended:

**Drummond M et al.** *Methods for the Economic Evaluation of Health Care Programmes.* Oxford:Oxford: University Press, 1997.

**Drummond M, McGuire A.** *Economic evaluation in Health Care: Merging theory and practice.* Oxford: Oxford University Press, 2001.

**Johannesson M.** *Theory and methods of economic evaluation of health care.* Dordrecht: Kluwer Academic Publishers, 1996.

**Gold MR, et al.** (eds.) *Cost-Effectiveness in Health and Medicine.* New York:Oxford University Press, 1996.

These general guidelines are valid from May 1, 2003.

The Pharmaceutical Benefits Board

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