

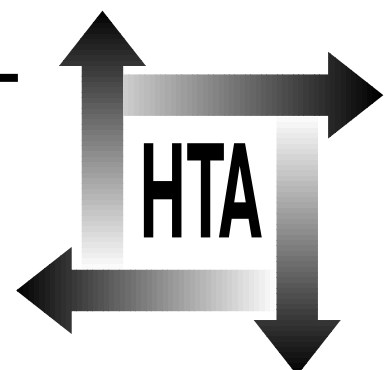
Executive summary

A review of the use of health status measures in economic evaluation

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Executive summary

Background

Health status measures (HSMs)

HSMs are standardised questionnaires used to assess patient health across broad areas including symptoms, physical functioning, work and social activities, and mental well-being. A measure can be disease-specific or generic to any condition, and it can generate a profile of scores, or a single index. The scores can be based on people's preferences (e.g. EQ-5D) or, more usually, arbitrary scoring procedures (e.g. SF-36 assumes equal weighting for most items).

Preference-based HSMs are known as multi-attribute utility scales (MAUSs). These produce a single index score for each state of health which can have a value of 1 or less, where 1 is equivalent to full health and 0 is dead. The scores, known as health state utilities, are used to calculate quality-adjusted life-years. These scores are used in cost-utility analyses.

Scope of the report

This report is concerned with the use of HSMs in economic evaluation, including MAUSs. It does not review all methods of valuing benefits, such as healthy year equivalents, conjoint analysis or willingness to pay.

Objectives

This project reviewed the principles and practice of using HSMs in economic evaluations to develop guidelines for good practice and to identify further research needs.

Methods

Five systematic literature searches were undertaken:

- (1) the methodology of using HSMs in economic evaluation
- (2) the techniques for valuing health states
- (3) the relationship between non-preference-based health measures with preference-based measures

- (4) five preference-based measures
- (5) the use of HSMs in economic evaluations published in 1995.

Results and conclusions

Judging the appropriateness of HSMs for use in economic evaluation

Conventional psychometric tests of validity were found to be inappropriate, and therefore a checklist was developed to assess the criteria of the practicality, reliability and validity of an HSM which incorporates economists' notion of preferences. The criterion test in economics is agreement with revealed preferences, but such data do not exist in health care. Economic validity can only be examined indirectly using the following:

- the ability to describe health accurately
- the theoretical and empirical bases of the scoring algorithms
- evidence of the measures ability to reflect stated preferences.

A comparison of techniques for valuing health states

The literature relating to the following techniques for valuing health states were reviewed: standard gamble (SG), time trade-off (TTO), visual analogue scale (VAS), magnitude estimation (ME) and person trade-off (PTO). The basic concepts of practicality, reliability, theoretical and empirical validity formed the criteria for reviewing the performance of the valuation techniques.

For practicality and reliability, little evidence relating to ME and PTO techniques was found; with other techniques there is little to choose between them. SG, TTO and the VAS have all proved to be practical on most populations, although VAS techniques have performed slightly better and have cost advantages. There is little difference between the reliability of SG, TTO and the VAS, and present evidence does not offer a basis to differentiate between them. When considering theoretical validity we conclude that only choice-based techniques should be used, that is, SG, TTO and PTO.

Empirical evidence available on the performance of techniques against preferences would suggest that (1) VAS techniques may be measuring aspects of health status rather than valuing health states and (2) choice-based methods are best placed to reflect strength of preference for health states.

Review of preference-based measures of health

The five preference-based measures of health used in economic evaluation – the Quality of Well-Being Scale (QWB), Rosser's disability/distress scale, the Health Utility Index (HUI; mark I to III), the EQ-5D (EuroQoL⁵) and the 15D – were reviewed. The most commonly used measure was the Rosser classification (n = 25), followed by the QWB (n = 24), HUI (n = 10), EQ-5D (n = 8) and 15D (n = 4).

In terms of practicality and reliability, most are brief and easy to use, and four of them can be administered by self-administration. The exception was the QWB, which has a lengthier interview schedule involving detailed probing of the respondents. There was some evidence of the test-retest reliability of the EQ-5D, 15D and HUI-III.

In terms of descriptive validity, the Rosser classification is inferior to the others in its coverage, and has been shown to be less sensitive at detecting health differences than the EQ-5D. The choice from the remaining four depends on the patient group being evaluated and views on the inclusion of social aspects of health. There was evidence of the ability of these measures to detect large differences between patient groups, but they also showed signs of insensitivity to smaller differences.

The QWB, Rosser scale and 15D can be regarded as inferior to the other two measures because their values were not obtained using one of the choice-based techniques. The HUI and EQ-5D use different methods of eliciting weights (SG and TTO, respectively), and there is no consensus amongst health economists as to which is better.

Review of the use of non-preference based measures in economic evaluation

HSMs are not designed for use in economic evaluation, and have a number of problems which make them unsuitable for use in economic evaluations. The main objection is that they do not reflect patient preferences. A poor correlation between HSMs and preference measures was found in published studies. Non-preference-based HSMs can be used to assess the relative efficiency of interventions only in very limited circumstances.

It is recommended that a preference-based measure be used alongside an HSM in trials where it is the intention to undertake an economic evaluation.

Review of economic evaluations conducted in 1995

This review examined the practice of using HSMs in economic evaluations. The number of papers fitting the inclusion criteria for this study (n = 13) suggested that HSMs are not being widely used in economic evaluation.

In most studies, the chosen HSM and the technique of economic evaluation were compatible, and the conclusions presented were legitimate. In many papers, however, there was no information to allow readers of published papers to examine the validity of measures or reasons for choosing it.

Recommendations for research

It is recommended that:

- researchers consider the suitability of their chosen HSM for conducting economic evaluation using the checklist of questions in this report
- the EQ-5D and HUI are currently the best preference-based HSMs, and should be considered for inclusion in all trials intended to be used in economic evaluation
- only choice-based techniques, either SG or TTO, be used to value health states
- SG and TTO values are obtained directly, rather than trying to estimate them from VAS values from a mapping function.

This is a developing field, and the following are priorities for future research:

- a comparison of the EQ-5D and HUI in terms of the features set out in this report
- the estimation of UK preference-based weights for the HUIs and certain key HSMs
- comparisons of MAUSs with other approaches to valuing health benefits
- the development of methods for testing empirical validity of measures for use in economic evaluation
- the empirical validity of the choice-based valuation techniques and their basis in theory.

Publication

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NHS R&D HTA Programme

The overall aim of the NHS R&D Health Technology Assessment (HTA) programme is to ensure that high-quality research information on the costs, effectiveness and broader impact of health technologies is produced in the most efficient way for those who use, manage and work in the NHS. Research is undertaken in those areas where the evidence will lead to the greatest benefits to patients, either through improved patient outcomes or the most efficient use of NHS resources.

The Standing Group on Health Technology advises on national priorities for health technology assessment. Six advisory panels assist the Standing Group in identifying and prioritising projects. These priorities are then considered by the HTA Commissioning Board supported by the National Coordinating Centre for HTA (NCCHTA).

This report is one of a series covering acute care, diagnostics and imaging, methodology, pharmaceuticals, population screening, and primary and community care. It was identified as a priority by the Methodology Panel and funded as project number 93/47/08.

The views expressed in this publication are those of the authors and not necessarily those of the Standing Group, the Commissioning Board, the Panel members or the Department of Health. The editors wish to emphasise that funding and publication of this research by the NHS should not be taken as implicit support for the recommendations for policy contained herein. In particular, policy options in the area of screening will be considered by the National Screening Committee. This Committee, chaired by the Chief Medical Officer, will take into account the views expressed here, further available evidence and other relevant considerations.

Reviews in *Health Technology Assessment* are termed 'systematic' when the account of the search, appraisal and synthesis methods (to minimise biases and random errors) would, in theory, permit the replication of the review by others.

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