HelmholtzZentrum münchen
German Research Center for Environmental Health

Scientific Highlight   October 2011

☒ co-ordinated with the Director of the Institute / Research Unit

Institute/ Research Unit / Clinical Co-operation Group / Junior Research Group:
Institute of Health Economics and Health Care Management

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Title of the Highlight:
Measuring health from the patient's perspective: A value set for the EQ-5D based on experienced health states

Keywords:
Quality of Life, Rating scale, German population values

Central statement of the Highlight in one sentence:
Quality of life is an important endpoint in medical care; for translating measures from other contexts, a new value set has been developed that better reflects actual health ratings in the German population.

Text of the Highlight:
Background: Decision makers responsible for allocation of healthcare resources may require that health states are valued by the population for whom they are making decisions. To achieve this, health-state descriptions can be combined with a value set that reflects the valuations of the target population. In the decision-utility approach used currently for this purpose, such a value set is at least partly based on wants and expectations regarding health states. This may reflect aspects different from health states experienced and valued by a respondent.

Objectives: To derive a value set that is based on experienced health states, emphasising the patient's perspective, and test its predictive performance in comparison with established approaches.

Methods: Problem descriptions and rating scale valuations of the EQ-5D were drawn from two representative German population surveys in 2006 and 2007. Several existing econometric models were considered, and a new model was developed for the experience-based approach: A generalized linear model with

binomial error distribution and constraint parameter estimation. The models were compared with respect to issues in specification, and accuracy in predicting the actual valuations of experienced health states in a new data set, using correlation, mean error and ranking measures for the latter. In addition, the impact of standardizing experience-based index models for age and sex of the subjects was investigated.

 Results: While existing models partly led to plausible and comparable parameter estimates, they also led to problems of insignificance and inconsistencies in some of the estimates. The new model achieved consistency and featured partly equivalent and partly better predictive accuracy. Using this model, mean valuations of health states were much better predicted by the experience based approach than by the decision-utility approach, especially for health states that frequently (>10) occurred in the population sample. Standardizing the experience-based index models for age and sex further improved predictive accuracy.

Conclusions: A value set for the EQ-5D can be plausibly estimated from experience-based valuations. The approach offers an alternative to decision makers who prefer experience-based valuation over decision utilities in the measurement of health outcome. Although usefulness in population samples was shown, use in a clinical context will first require indication-specific tests.

Publication:
Leidl R, Reitmeir P (2011) A value set for the EQ-5D based on experienced health states: Development and testing for the German population. PharmacoEconomics 29(6):521-34.

Taking account of the HMGU mission:
This new value set enables better estimates of quality of life impacts when translating data from other countries to Germany. This is especially relevant for accurate modelling of the impact of chronic disease over long periods of time.

The internal HMGU co-operation partners with whom the Highlight was compiled, if appropriate:
N. a.

A Value Set for the German Population Based upon Experienced Health States: Approach

Background
- Economic studies often measure health effects by asking the general public how they would value given health states (GHS)
- This reflects consumer choice, but may differ from how patients evaluate their own health; valuations also differ by country
  => National 'value sets' to value health help to translate effects

Aim
- To develop a value set for the German population
- To base the value set on the patient's perspective

Methods
- EQ 5D for quality of life measurement
- A generalized linear model with binomial error distribution to estimate the valuation of experienced health states (EHS) based on the visual analog scale (VAS)
- Comparison of EHS- and GHS-based value sets, the latter based on time-trade-off (TTO) valuation ("decision utilities")

Data
- VAS valuations in a German population survey
- 2006 data for estimation of the value set
- 2007 data for performance testing (accuracy in prediction)

A Value Set for the German Population Based upon Experienced Health States: Results and Implications

IGM

Prediction of health state valuation

- Actual VAS rating predicted well by EHS-based value set

- Mean valuations of health states were better predicted by the EHS-VAS approach than by traditional GHS-TTO approach, especially for health states that frequently (>10) occurred in the population sample

- For the EQ-5D, a value set can be plausibly estimated from experience-based valuations

- The approach offers an alternative to decision makers who prefer the patient's perspective

- Use in clinical context requires indication-specific tests

Predicted value

△ GHS-TTO based value set
● EHS-VAS based value set
— Perfect prediction

German population VAS rating, 2007

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