

# ISPOR Task Force Report: Mapping to Estimate Health-State Utility from Non-Preference-Based Outcome Measures

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The first of two ISPOR Task Force reports on health-utility estimation, “Estimating Health-State Utility for Economic Models in Clinical Studies,” was published last year [1]. It provides practical advice for researchers planning the collection of health-utility data for economic modeling in clinical studies. This second report makes recommendations on the subject of “mapping.”

Most readers will be familiar with cost-utility analysis to compare costs and benefits of health technologies. Health states are expressed in terms of health utilities, which reflect preferences for health on a scale anchored by 1 (full health) and 0 (death). These estimates are then used in the calculation of quality-adjusted life-years (QALYs). However, health-utility data are often insufficient for the analyst performing a cost-utility analysis. This may be because no appropriate patient-reported outcome measure was administered in the relevant clinical studies or perhaps the clinical studies do not span the relevant aspects of disease required for an economic decision model adequately. In these situations, there is a gap between the evidence available and the requirements for economic evaluation. Mapping is a means of bridging this evidence gap.

“Mapping” makes use of another dataset, which may be observational rather than experimental. This dataset must have the same outcomes that are measured in the relevant clinical study/studies, and the patients’ responses to a standard preference-based measure, such as the EQ-5D. This external dataset is used to estimate a statistical relationship between the two types of outcome measures. That statistical relationship can then be combined with the clinical studies of the health technology in question to predict what health utilities would have been observed had they been measured in the first place.

Mapping is frequently employed but there is significant variation in practices and resulting estimates of cost-effectiveness [2, 3]. This Task Force Report provides recommendations to analysts undertaking mapping studies, those that use the results in cost-utility analysis, and those that need to critically review such studies. The recommendations cover all areas of mapping practice: the selection of datasets and appropriate outcome measures for the mapping estimation; model selection and performance assessment; reporting standards; and the use of results, including the appropriate reflection of variability and uncertainty. It stresses the need for careful consideration of the nature of the evidence gap, the needs of the economic evaluation (whether that be alongside a single clinical study or based on a decision analytic model), and the relationship between the clinical- and preference-based outcomes prior to undertaking the statistical analysis. Provided that mapping analyses are undertaken appropriately, reported transparently, and their results used appropriately, decision makers can be confident in the validity of estimates obtained in this manner.

## References

- [1] Wolowacz SE, Briggs A, Belozeroff V, et al. Estimating health-state utility for economic models in clinical studies: An ISPOR good research practices task force report. *Value Health* 2016;19(6):704-719. [2] Pennington B, Davis S. Mapping from the Health Assessment Questionnaire to the EQ-5D: The Impact of Different Algorithms on Cost-Effectiveness Results. *Value Health* 2014; 17(8):762-771. [3] Hernandez Alava, M, Wailoo A, Wolfe F, Michaud K. A comparison of direct and indirect methods for the estimation of health utilities from clinical outcomes. *Medical Decision Making* 2014; 34:919-930. ■

### *Additional information:*

*You can access “Mapping to Estimate Health-State Utility from Non-Preference-Based Outcome Measures: An ISPOR Good Practices for Outcomes Research Task Force Report,” and other articles in this issue of Value in Health at: [http://www.ispor.org/valueinhealth\\_index.asp](http://www.ispor.org/valueinhealth_index.asp).*

*To learn more about this Task Force, go to [https://www.ispor.org/TaskForces/Mapping-Estimate-Health-State-Utility-Non-Preference-Outcome-Measures\\_guidelines.asp](https://www.ispor.org/TaskForces/Mapping-Estimate-Health-State-Utility-Non-Preference-Outcome-Measures_guidelines.asp)*