



Growing Interest in Using Utilities to Assess Treatment Process Preferences

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Methodology used to obtain utilities for use in cost-utility models is strongly influenced by guidelines from health technology assessment agencies. The guide published by the National Institute for Health and Care Excellence (NICE) is possibly the most influential of these guidelines, with the most prescriptive approach to utility assessment. The 2013 NICE Guide indicates a preference for utilities derived from the EQ-5D in order to maximize “consistency across appraisals,” while allowing for alternative approaches when the EQ-5D is not “available” or “appropriate.”¹

A wide range of alternate methods are used when the EQ-5D is inappropriate or unavailable, including direct utility

assessment, mapping, and other generic measures. Direct valuation of health state descriptions, often called vignettes, is one commonly used alternate approach. In this type of study, health state descriptions are drafted based on a combination of literature review, clinician interviews, patient interviews, and/or clinical trial data. Then, these vignettes are valued in time trade-off or standard gamble tasks by either general population respondents or patients with knowledge of a specific condition.

This vignette-based assessment approach is well-suited for isolating preferences associated with specific health-related characteristics, such

as rare diseases and adverse events, that may not be captured by generic preference based instruments such as the HUI² or EQ-5D.³ This practical approach allows researchers to obtain utilities associated with specific attributes, while requiring only a single assessment and a manageable sample size.


Another type of characteristic that may be captured in vignette-based utility studies is the treatment process, and there is a growing body of research focused on these “process utilities.” Studies have found that utilities vary depending on a range of treatment modalities including surgical vs. nonsurgical management;⁴

inhaled vs. injected treatment;⁵ oral vs. injectable treatment;^{6,7} dose frequency;^{6,7} inpatient vs. outpatient treatment;⁸ two types of prenatal genetic testing;⁹ injection vs. infusion;¹⁰ early-stage cervical cancer treatment options;¹¹ and specific medication options.¹² Across these studies, more convenient treatments were consistently associated with greater utility values. Although treatment process is likely to have a smaller effect on utility than symptom severity or treatment outcome, small differences in utility associated with treatment process can have a substantial impact on cost-utility results, particularly when modeling large numbers of patients.

The vignette-based approach to estimating the impact of treatment process does have some limitations that should be considered when

designing and interpreting these studies. For example, while the vignette-based approach is useful for assessing utility impact of specific treatment attributes, it lacks the standardization and comparability of a generic preference-based measure such as the EQ-5D. Second, vignette-based utilities represent preferences among hypothetical health states, rather than the quality of life of a person living in one of the health states. It is not known how closely utilities derived from vignette assessments would correspond to utilities of patients living in these health states. Third, utilities derived from vignette assessments are based only on the characteristics described in the health state, rather than a broad assessment of patients' quality of life or experiences with treatment. Consequently, the utilities gathered with vignettes should only be

interpreted as a representation of the perceived shift associated with specific attributes.

For cost-utility models comparing medications with similar efficacy and tolerability, treatment process variables could be an important way to differentiate among comparators. In recent years, we have been asked with growing frequency to conduct vignette-based studies to identify process utilities. For example, one of our recent studies found that route of administration and treatment convenience had an impact on utility in the context of health states representing cancer with bone metastases.¹⁰ At the ISPOR 19th Annual International Meeting to be held May 31 to June 4, 2014, in Montreal, we will be giving a podium presentation on utilities associated with various treatment regimens for hepatitis C.¹³ 

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References

- 1 NICE (National Institute for Health and Clinical Excellence). Process and Methods Guides: Guide to the Methods of Technology Appraisal 2013. <http://www.nice.org.uk/media/D45/1E/GuideToMethodsTechnologyAppraisal2013.pdf>. Accessed April 17, 2014.
- 2 Horsman J, Furlong W, Feeny D, Torrance G. The Health Utilities Index (HUI): Concepts, Measurement Properties and Applications. *Health Qual Life Outcomes*. 2003 Oct 16; 1:54.
- 3 Rabin R, Oemar M, Oppe M. EQ-5D-3L User Guide: Basic information on how to use the EQ-5D-3L instrument. In: EuroQol Group Executive Office, ed. Version 4.0 ed. Rotterdam, The Netherlands: EuroQol Group; 2011:1–21.
- 4 Cavaliere CM, Chung KC. A Cost-utility Analysis of Nonsurgical Management, Total Wrist Arthroplasty, and Total Wrist Arthrodesis in Rheumatoid Arthritis. *J Hand Surg Am*. 2010 Mar; 35(3):379–391 e2.
- 5 Chancellor J, Aballea S, Lawrence A, et al. Preferences of Patients with Diabetes Mellitus for Inhaled versus Injectible Insulin Regimens. *Pharmacoeconomics*. 2008; 26(3):217–234.
- 6 Boye KS, Matza LS, Walter KN, Van Brunt K, Palsgrove AC, Tynan A. Utilities and Disutilities for Attributes of Injectible Treatments for Type 2 Diabetes. *Eur J Health Econ*. 2011 Jun; 12(3):219–230.
- 7 Osborne RH, Dalton A, Hertel J, Schrover R, Smith DK. Health-related Quality of Life Advantage of Long-acting Injectible Antipsychotic Treatment for Schizophrenia: a Time Trade-off Study. *Health Qual Life Outcomes*. 2012 Apr 2; 10:35.
- 8 Teuffel O, Cheng S, Ethier MC, et al. Health-related Quality of Life Anticipated with Different Management Strategies for Febrile Neutropenia in Adult Cancer Patients. *Support Care Cancer*. 2012 Nov; 20(11):2755–2764.
- 9 Feeny D, Townsend M, Furlong W, et al. Health-related Quality-of-life Assessment of Prenatal Diagnosis: Chorionic Villi Sampling and Amniocentesis. *Genet Test*. 2002 Spring; 6(1):39–46.
- 10 Matza LS, Cong Z, Chung K, et al. Utilities Associated with Subcutaneous Injections and Intravenous Infusions for Treatment of Patients with Bone Metastases. *Patient Prefer Adherence*. 2013 Aug 29; 7:855–865.
- 11 Jewell EL, Smrka M, Broadwater G, et al. Utility Scores and Treatment Preferences for Clinical Early-stage Cervical Cancer. *Value Health*. 2011 2011; 14(4):582–586.
- 12 Wu JM, Fulton RG, Amundsen CL, Knight SK, Kuppermann M. Patient Preferences for Different Severities of and Treatments for Overactive Bladder. *Female Pelvic Med Reconstr Surg*. 2011 Jul; 17(4):184–189.
- 13 Matza LS, Sapra SJ, Kalsekar A, et al. Health State Utilities Associated with Attributes of Treatments for Hepatitis C. ISPOR 19th Annual International Meeting; May 31–June 4, 2014; Montreal, QC, Canada.