and benefits and provide the best possible care for their patients.

Christopher M. Wittich, MD, PharmD
Christopher M. Burkle, MD, JD
William L. Lanier, MD
Mayo Clinic
Rochester, MN

1. American Academy of Ophthalmology Retina Panel. Preferred practice pattern guidelines. Age-related macular degeneration. http://www.aao.org/ppp. Accessed December 4, 2012.

The High Cost of Cancer Drugs and What We Can Do About It

To the Editor: Having rejected willingness to pay and the free marketplace as valid instruments to value health care interventions or to price pharmaceuticals, many health economists have turned to quality-adjusted life years (QALYs) as a valuation measurement tool of health status utility. This same approach was used by Siddiqui and Rajkumar[1] in their article, "The High Cost of Cancer Drugs and What We Can Do About It," which was published in the October 2012 issue of *Mayo Clinic Proceedings.* However, using QALYs as a technique to measure health status utility has increasingly been seen as a method that is long in the tooth, and using QALYs anyway because it is all that we have for such evaluation is wearing incredibly thin.

This is so for a number of reasons. First, there are problematic methodologic presuppositions with QALYs. Some of these are only technical assumptions but are nonetheless considered by some analysts to be heroic. To be valid, QALYs (as a multiattribute utility measure for valuation of health status) must exhibit constant proportional trade-off and additive independence. Neither of these is inherent.[2]

Second, it is clear that the standard gamble (with roots in the game and utility theories of John von Neumann and Oskar Morgenstern), time trade-off, and visual analog scale methods yield entirely different estimates of health status utility. This is so partly because standard gamble incorporates risk preference unlike time trade-off (which is affected by the individual's time preferences), whereas the visual analog scale and standard gamble incorporate no time preference trade-offs.[3] Which do we use?

In addition, the generic measurement tools (eg, EQ-5D), referred to by the authors to identify a patient's health status necessary for the valuation of QALYs, are limited in their number of domains and display limited discriminatory power or sensitivity to change in health status. Also, not all possible health states are valued, thus requiring the use of modeling techniques to fill in the gaps. However, many models are introduced without an explicit formal analysis of their inherent uncertainty.

Furthermore, QALYs measure preferences, but whose preferences? Are the relevant preferences those of the patient or society, the caregivers or the payers? Who should decide the preferences for the estimation of a given health status utility? The stated goal of this method is to inform and assist policymakers regarding societal value judgments among different health care programs and patient groups. This implies important equity considerations, which may not reflect the individual patient's sovereign judgment of utility.

Overall, the QALY approach has been accused of making illegitimate interpersonal comparisons, disregarding equity concerns, practicing age discrimination, and introducing subjective bias within quality-of-life scores.[4,5]

Nevertheless, until something better comes along (eg, disability-adjusted life years, healthy year equivalents, and other instruments), QALYs likely will continue to play an important role in economic evaluations in the United Kingdom and elsewhere. Still,

policymakers need to know that QALYs involve important, even heroic, assumptions about preference measurement and involve key assumptions regarding societal value judgments that may not be shared across the general population when they affect the allocation of scarce resources.

Indeed, as a renowned mentor once said in the midst of a lecture on health benefit valuation, "If people really understood all the problems with QALYs, they'd never use them in the first place."

Thomas Rosamond, MD
Kansas University Hospital
Kansas City, KS

1. Siddiqui M, Rajkumar SV. The high cost of cancer drugs and what we can do about it. *Mayo Clin Proc.* 2012;87(10):935-943.
2. Richardson J, Hall J, Salkeld. The measurement of utility in multiphase health states. *Int J Technol Assess Health Care.* 1996;12(1):151-162.
3. Drummond MF, Sculpher MW, Torrance GW, Obrien BJ, Stoddart GL. *Methods for the Economic Evaluation of Health Care Programmes.* 3rd ed. Oxford, England: Oxford University Press; 2005.
4. Robinson R. Economic evaluation in healthcare: cost utility analysis. *BMJ.* 1993;307:859-862.
5. Nord E, Richardson J, Macarounas-Kirchmann K. Social evaluation of health care versus personal evaluation of health states: evidence on the validity of four health-state scaling instruments using Norwegian and Australian survey. *Int J Technol Assess Health Care.* 1993;9(4):463-478.

In reply: We thank Dr Rosamond for his insightful comments. We agree that the quality-adjusted life year (QALY) metric has methodologic flaws and does not fully encapsulate the complexities of value measurement. In our estimation, our rationale for discussing QALY was that value needs to be factored in to determine the price of a drug.

Let us compare the purchase of an expensive drug to other large purchases, such as an automobile or housing. There are many metrics other than miles traveled per gallon of fuel or square feet of living space that are considered in making purchasing decisions on nondrug