How Much Are Americans Willing to Pay for a Quality-Adjusted Life Year?

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Cost-effectiveness analysis made its first appearance in the health care literature more than 4 decades ago. In Britain, the National Institute of Clinical Excellence (NICE) explicitly considers cost per quality-adjusted life year (QALY) gained among its criteria for coverage recommendations to the National Health Service; some observers have inferred that explicit criteria such as £30,000 per QALY may be used to guide these recommendations. The World Health Organization has proposed that developing countries might use a cost-per-QALY threshold of 3 times the per-capita gross domestic product to guide their health care resource allocations. Despite widespread use elsewhere in the world, cost-effectiveness analysis has gained only limited traction in the United States as an explicit guide to clinical practice, insurance coverage, and policy decisions.

It seems that Americans do not have the inclination to focus on the fact that even in the wealthiest country in the world, resources are limited, and not all beneficial health services can be provided to everyone who might potentially benefit from them. Rationing among health services occurs largely by default and not by design.

In the United States, cost per QALY is sometimes cited as part of the justification for guidelines for clinical practice or preventive services, and a decade ago a panel was convened by the US Public Health Service to provide guidance to practitioners of cost-effectiveness analysis. However, despite the attention given to cost-effectiveness analysis in medical journals, The Centers for Medicare and Medicaid Services have avoided explicit use of cost-effectiveness criteria in coverage decisions, and it is unclear to what degree cost-effectiveness is used to guide coverage decisions in the private sector. Because cost per QALY is not used in any systematic or consistent way in the United States, it should not be surprising that there is no consensus as to the appropriate value of cost per QALY that should guide health care decisions and policies.

The number $50,000 per QALY has become a mythical benchmark for cost per QALY in this country, although it is impossible to trace its origins. Some authors of cost-effectiveness studies refer to this number when reporting subgroup analyses or sensitivity analyses; these kinds of statements should not be interpreted as endorsements of a $50,000 per QALY threshold, but rather as a convenient way of representing the conclusion that the intervention in question is good value for money even under pessimistic assumptions. With that interpretation, the reference to the $50,000 threshold could be interpreted as an implied lower bound on the value of a QALY.

Braithwaite et al, in this issue of Medical Care, set out to deduce lower and upper bounds on the value Americans place on quality-adjusted life years by analyzing the implications of aggregate decisions that citizens of this country have made—to pay for the increase in the cost of medical care services since 1950; or have not made—to insure the uninsured. They argue that because the gains in life expectancy since 1950 have been bought at an estimated average cost of $183,000 per year of life expectancy gained, on average Americans must be willing to pay at least that much for a year of life. When optimistic imputations of quality of life gains are also considered, the implied lower bound on the value of a QALY drops to $109,000. The number drops below $100,000 when they...
consider health gains (and costs) for adults only, implicitly recognizing that the value of improved health for children is greater. Their upper bound on the value of a QALY, deduced from the decisions of uninsured citizens to go without health insurance, is $264,000 per life year, or $113,000 per QALY under the optimistic assumptions about the quality-of-life returns to health care.

Setting aside for the moment the merits of this quixotic quest for a number that would be appropriate in all decision-making contexts, some assumptions that underlie the Braithwaite et al calculations need to be emphasized. First, the authors properly recognize that not all of the gains in life expectancy are attributable to increased health care spending. Lifestyle and environmental changes have clearly played important roles, and the calculation assumes conservatively that only half of the survival gains since 1950 are due to health care. Second, they recognize that the average cost per QALY gained during the “modern era” is an underestimate of the marginal value of a QALY gained. There are many health care innovations that have produced survival gains at very modest costs per life year, such as beta-blocker drugs for heart attack patients. Because there are innovations during the past half century whose cost per QALY is below the average, there must be others whose cost per QALY is above the average. Applying the authors’ reasoning, the fact that these services were also purchased indicated that the willingness to pay for a life year at the margin must be even higher; hence, the interpretation of this $183,000 (or $109,000) estimate as a lower bound on cost per life year (or per QALY).

As in much of positive economic analysis, the premise underlying the Braithwaite study is that the preferences of decision makers are reflected in their decisions. This attack on the problem, however, assumes rationality and consistency in decision-making—an assumption that has been famously challenged by Nobel laureate Daniel Kahneman and others, and has led to the new branch of economics known as behavioral economics. Health care resources are spent as a consequence of myriad forces, some of which can hardly be regarded as reflecting anybody’s true preferences. Insured patients are subject to moral hazard—the tendency to purchase more of something than it is worth when its cost is prepaid or subsidized. Health insurance in the private sector is subsidized by tax advantaged status under US tax laws, and public sector health coverage is determined largely by political forces. Psychologic forces, such as the impulse to spare no expense at the point of care, lead to further distortions of underlying preferences. It is a stretch to infer too much rationality into the collective “decision” to buy all the additional health services that became available in the “modern era”.

Even if these aggregate “decisions” reflected the marginal value of health care, how do we account for the fact that many effective and cost-effective services are underutilized in the United States? If these services were appropriately used, then the incremental cost of “modern” health care would be much higher than it already is. By filling in these gaps in utilization—one of the primary goals of the quality movement in the United States—the portion of personal income spent on health care would increase, and perhaps the willingness to pay for additional health care would decline as a consequence. The introduction of new and expensive medical technologies (ie, biologic drugs, artificial organs, genetically targeted treatments, and imaging technologies) would further increase health care costs and strain personal budgets. To the extent that some of these innovations are cost-effective (eg, implantable cardioverter defibrillators at less than $50,000 per QALY [sic]), they represent good value and their adoption would tend to drive down the marginal willingness to pay for health services at the margin.

Let us return now to the question of whether it is sensible to seek a number that represents a universal threshold for the value of a QALY. If health care were managed by a benevolent dictator whose goal was to maximize the aggregate health of her subjects, then her optimal decision rule would be to rank order all health services in terms of their incremental cost per QALY and to select them off the top of the list until the budget runs out. The cost-effectiveness ratio of the last service chosen (the “marginal service”) would become the benchmark against which any new proposed use of health services would be judged. If a new service has a higher cost per QALY than the marginal service, then substituting it for any adopted service would result in an aggregate loss in QALYs. Conversely, if a new service had a lower cost per QALY than the marginal service, QALYs could be gained by substituting it for the marginal service (and possibly for some services just above the marginal service on the rank list as well, depending on the total cost of the service). However, this is a description of an idealized world, in which resources are transferable across segments of the society, without regard for ability to pay. It is also less than ideal, because it values all QALYs equally without regard for distributive justice. Just as the exclusion of children from Braithwaite’s inference might appropriately reflect that children may be receiving more priority (ie, higher value per QALY) in decision-making regarding health care, priority might also be appropriately placed on those with the poorest health prognoses and otherwise disadvantaged populations.

Until Americans come to terms with the fact that they are not willing or able to pay the cost of providing all citizens with all effective health care services, there will be no explicit need for a benchmark dollar value of a QALY. However, as the supply of effective new technologies expands and barriers to access to care are broken down, strains on health care resources will force a closer examination of what we are willing to pay for health improvement. There are signs that public and private decision makers are beginning to collect evidence of cost-effectiveness as well as effectiveness. It is time to lay to rest the mythical $50,000 per QALY standard and to begin a real public discourse on processes for deciding what health care services are worth paying for.

REFERENCES


