

Quality Adjusted Life Years (QALY): The Threat to Older Americans

by William S. Smith

Introduction

The Quality-Adjusted Life Year (QALY) cost-effectiveness methodology employed most notably in the U.S. by the Institute for Clinical and Economic Review (ICER) and in the United Kingdom by The National Institute for Health and Care Excellence (NICE) represents an inherently discriminatory threat to senior citizens' access to high-quality medicines. The threat that the QALY poses to older Americans deserves considerable attention because some observers argue that, were a new U.S. President to implement a "Medicare for All" health plan, cost pressures would inevitably lead federal policy makers to adopt the use of QALYs when making decisions on how to ration healthcare.¹

More importantly, as the Coronavirus pandemic grows, the Centers for Disease Control and Prevention (CDC) is warning the nation that older adults are at higher risk of getting very sick from the COVID-19 virus.² It would seem a highly suspect public health policy for the nation to adopt the QALY, a cost-effectiveness methodology that has the potential to deny seniors' access to life-saving treatments.

While there is considerable academic literature pointing to the problematic aspects of utilizing QALYs to make decisions about access to medicines for senior populations, one need not employ a sophisticated economic model to understand the nature of the issue. QALYs rate medicine according to their ability to extend life and to improve the quality of life. As one researcher described it in the *Journal of Medical Ethics*: "The QALY combines life expectancy after treatment with measures of the expected quality of life." Because older adults would, by definition, exhibit shorter life expectancy, medicines used by senior citizens would expect a lower QALY score. This same researcher points out: "(I)n every case QALYs are indeed inherently ageist and also favour those with greater life expectancy regardless of age. This must be the case because length of lifetime to be gained, is both valued and built into the way QALYs are calculated."³ Treatments that provide more "life years" will be rated as "more effective" under QALY, which superficially sounds commonsensical unless you realize that this standard will, by definition, be used to argue that drugs for senior citizens with shorter life expectancies will be rated lower than drugs for younger people.

Another academic researcher of QALYs reached the same conclusion: "(E)lderly patients, who by having a shorter lifespan may forego any improvements in QALYs that accrue over subsequent decades. Such improvements would therefore only be seen to benefit younger (and potentially healthier) individuals."⁴

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Some have argued that NICE and ICER have taken steps to mitigate the discriminatory effects of QALYs on older adults. A decade ago, NICE endured significant criticism for the use of “ageist” methodology with critics arguing that NICE’s decisions were a violation of the UK’s Equality Act of 2010 that bans age discrimination. In response, NICE launched a significant review of their processes to ensure that their decisions were not discriminatory. One set of British researchers argued that the National Health Service now uses “citizen councils” and “advisory committees” to enforce “social value principles” that

protect against “ageist” decisions. They also pointed to certain anecdotal decisions that favored certain treatments for older adults. They finally concluded that “NICE has implemented robust systems to identify potential for discrimination and developed clear mechanisms to avoid and resolve it.”⁵

Likewise, in the U.S., ICER has been criticized by some senior citizen advocacy groups for their use of QALYs. In response, ICER continued to defend its use of

the QALY but announced in 2018 that it would simultaneously adopt another measure of clinical benefit, the so-called “Equal Value of Life Years Gained” (evLYG), a methodology that ICER argues “evenly measures any gains in length of life, regardless of the treatment’s ability to improve patients’ quality of life.” However, ICER insisted that the use of the evLYG will be “supplementing the QALY, not replacing it.”⁶ Researchers at Tufts Medical Center have pointed out that the evLYG methodology, even if used exclusively and not in concert with QALYs, can produce very problematic and discriminatory results. “The evLYG measure has its own discriminatory implications, however...and...cost-per-QALY and cost-per-LY assessments usually produce results that differ modestly.”⁷

These defenses of NICE’s and ICER’s use of QALYs to rate treatments for seniors are remarkably unpersuasive. One can establish citizen councils or use other methodologies to supplement the QALY, but the reality is that the QALY methodology values life extension when rating the cost effectiveness of medicine. Older adults have fewer QALYs to give, so the formula will always contain an inherent bias against medicine for older adults, with greatest discrimination against the frailest and the most elderly.

QALYs and the Rationing of Care for the Elderly

The problematic aspects of QALYs for the elderly become quite clear with a simple example. Imagine that a 25-year-old man and a 70-year-old man live with the same disease. A cure

becomes available at a cost of \$200,000 that will restore both individuals to a full quality of life and a life expectancy of 80 years of age. Under the QALY methodology, the younger person will gain 55 life years while the older person will gain only 10. The medicine will be rated as much more cost effective for the 25-year-old man because of the QALYs gained. When bureaucracies in nationalized healthcare systems make decisions about how to ration various treatments using QALYs, it will be judged much more cost effective to treat younger people with this \$200,000 medicine than to treat the older patients. This is exactly how rationing decisions are currently justified in many non-U.S. healthcare systems.

Many medical “ethicists” support the rationing of care for the elderly and say so openly. In 1987, Daniel Callahan, a medical “ethicist” at the Hastings Center in New York, famously wrote a book titled: “Setting Limits: Medical Goals in an Aging Society,” which “faults our health care system for devoting disproportionate resources and technology on extending the lives of the elderly regardless of the quality of their lives.” In 2009, when Callahan was 79, he suffered a cardiac event and quickly underwent an \$80,000 treatment, a decision that drew some criticism given his past positions.⁸ Given his advanced age, a decision to deny this \$80,000 treatment might be justified by the use of QALY methodology as Callahan may not have secured enough “life years” to make the treatment cost effective.

The Problem of Palliative Care

The infirmities of the QALY are clearly demonstrated in the bias of the methodology against palliative care. A just and compassionate society will always seek to treat older, terminally ill patients with dignity during their final days. This means taking steps to make them feel comfortable and providing them with treatments that may lessen their pain and anxiety. Yet, the QALY, because of the way it works, has an inherent bias against providing these types of treatments.

As discussed, QALY cost effectiveness scores are based upon the ability of a treatment to extend life and to improve the quality of life. While palliative care treatments might significantly improve the quality of a patient’s life in their final days, they often do not extend a patient’s life. As one researcher has pointed out, “palliative care interventions will produce positive QALY scores to the extent that they improve patients’ quality of life. The problem, however, is that although successful palliative care interventions produce benefits that

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can be measured in QALYs, they do not achieve high QALY scores. Because palliative care deals with the terminally ill, the improvements in the quality of life that it achieves for its patients is inevitably short-lived. Thus, even when palliative care effects very substantial improvement in its patients' quality

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of life, the additional number of QALYs generated is small in comparison with treatments that save patients from premature death, or which produce similar improvements in quality of life for patients with longer life expectancy. This is what I will refer to as palliative care's ‘QALY problem.’”⁹

Palliative care highlights the problem of using the QALY methodology generally: not every decision made in healthcare should be justified solely based on cost-effectiveness. Human beings make value

judgments about how to care for their fellow human beings. These decisions can become morally grotesque when decisions are made exclusively by healthcare economists using “cost-effectiveness formulas.” These formulas themselves are based upon certain value judgments that human life is less valuable than many Americans think.

A New Way to Think About the Economic Value of Older Adults

If we think of older adults in economic terms, what the economists at NICE and ICER ignore is the tremendous economic value that longer lives have brought to society. The methodologies that NICE and ICER use see senior citizens as an economic problem, but they should instead see them as an economic engine.

In 2006, two University of Chicago economists pointed out that, during the 20th century, the life expectancy of Americans increased by about 30 years. The result has not been a “problem for the healthcare system” but a cascade of wealth creation. “Cumulative gains in life expectancy after 1900 were worth over \$1.2 million to the representative American in 2000, whereas post-1970 gains added about \$3.2 trillion per year to national wealth, equal to about half of GDP... For men, mortality reductions between 1970 and 1980 were worth \$27 trillion.”¹⁰

These economists' conclusions are precisely the opposite of what rings in our ears every day about the “unsustainable” costs of healthcare. “Even ignoring health-induced changes in quality of life, we find that the aggregate value of increased longevity since 1970 has greatly exceeded additional costs of health care.”

Rather than finding ways to deny treatments that may extend the life of an older patient, these economists argued that we

should be making larger and larger investments in research that might extend the life of older patients. “(T)ake our estimate that a 1 percent reduction in cancer mortality would be worth about \$500 billion. Then, a “war on cancer” that would spend an additional \$100 billion on cancer research and treatment would be worthwhile if it has a one in five chance of reducing mortality by 1 percent and a four in five chance of doing nothing at all.”

Conclusion

During the recent Democratic presidential primary, proposals to create a “Medicare for All” healthcare system came to the fore. Candidates argued that such a nationalized healthcare system would save a great deal of money because the government could impose lower prices and avoid duplicative paperwork.

ICER continues to insist that QALYs represent the best way to control healthcare costs. As they said recently: “The Institute for Clinical and Economic Review (ICER) has posted a summary of the reasons that the quality-adjusted life year (QALY) is the gold standard for measuring how well a medical treatment improves patients' lives.”¹¹

Senior citizens who become enrolled in a Medicare for All plan and are then denied valuable treatments based upon a QALY cost-effectiveness review might not share ICER's view on the value of QALYs. Not only is ICER's modeling of the value of longevity flawed, they also de-value treatments such as palliative care that are extremely important to older Americans and their families but may not increase longevity.

Finally, because senior citizens are particularly vulnerable during this COVID-19 pandemic, America's health plans should be doing precisely the opposite of what ICER tends to recommend: they should make medicines for seniors and vulnerable populations widely and easily available. Copays and coinsurance should be reduced significantly or eliminated. Formularies should be loosened for these populations so treatments for underlying conditions are readily and easily available to the vulnerable.

The nation will likely spend trillions of dollars to combat this pandemic. One simple reform that will help protect older Americans will be to give them quick and ready access to treatments their doctors want them to have. We want those who may be exposed to this virus to be in the best possible health.

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Endnotes

1. <https://www.forbes.com/sites/theapothecary/2017/09/30/the-3-reason-bernie-sanders-medicare-for-all-single-payer-plan-is-a-singularly-bad-idea/#5aac59873a70>
2. <https://www.cdc.gov/coronavirus/2019-ncov/specific-groups/high-risk-complications.html>
3. <https://jme.bmj.com/content/31/12/685.full>
4. https://ora.ox.ac.uk/objects/uuid:d22a9b1b-c2f0-4f6c-83ee-fdc320e4af61/download_file?file_format=pdf&safe_filename=The%2Blimitations%2Bof%2BQALY%253B%2Ba%2Bliterature%2Breview.pdf&type_of_work=Journal+article
5. <https://jme.bmj.com/content/38/5/258>
6. https://icer-review.org/wp-content/uploads/2018/12/QALY_evLYG_12122018.pdf
7. <https://cevr.tuftsmedicalcenter.org/news/2018/will-icers-response-to-attacks-on-the-qaly-quiet-the-critics>
8. <https://www.npr.org/templates/story/story.php?storyId=121283688>
9. <https://www.ncbi.nlm.nih.gov/pubmed/16435466>
10. <https://www.nber.org/papers/w11405>
11. <https://icer-review.org/announcements/icer-describes-qaly/>

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