

INSIGHT

# Pricing the Priceless: Measuring the Value of Healthy Aging



An older woman crosses a street at Tokyo's Shibuya. Photo credit: Asian Development Bank.  
*Successful adaptation to older population age structures requires a policy focus on measuring and improving the social value of medical care.*

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## Introduction

The world population is aging faster than ever before, and governments must confront the increasing burden of health care spending on their economies. At a time when the economics of aging is inseparable from the economics of health care, successful adaptations to older population age structures necessitate a better understanding of the value of medical care.

Policy makers, in particular, must incorporate value into considerations of health care cost growth, so they can determine the extent to which health improvements offset added cost, reward those cases in which “we are getting what we pay for,” and reduce cases in which health spending rises without sufficient corresponding benefit for health outcomes.

# Assessing Medical Care's Social Value

How do health economists incorporate value into measurements of health spending and how do they measure the social value of medical care? There are several approaches (see, for example, Cutler et al. 2020, Eggleston et al. 2020). The first and most difficult challenge is to quantify changes in health outcomes and to analyze to what extent those are attributable to medical care instead of other factors. Then, by assuming a range of monetary values for each additional year of life or improvement in quality of life, an analyst can measure the growth in value to patients as monetized gains in “quality-adjusted life-years.”

Understanding the value of chronic disease care is especially critical in aging societies, as governments must transform their health systems to support patients who will live with chronic diseases for decades. Health benefits of medical care, however, are difficult to aggregate across disparate services and diseases. Hence focusing on management of a single important chronic disease allows researchers to develop metrics of quality improvement and value that are linked to rigorous clinical studies.

Recently, an international collaboration of researchers, of which I was one, did just that, providing a framework for assessing the social value of health spending (Eggleston et al. 2020). We focused on quality adjustment for one disease of growing prevalence in aging societies, namely, type 2 diabetes. We studied a large dataset of patient-level panel data between 2006 and 2014, linking medical spending to biomarkers for 123,548 individuals with type 2 diabetes in four different health systems: one in Europe (the Netherlands) and three in East Asia (Hong Kong, China; Japan; and Taipei, China).

We measured the net value of medical care by applying the “cost-of-living” approach (Cutler et al. 1998, Eggleston et al. 2009) that has some kinship with the “value of life years” approach in environmental and development economics (e.g., Nordhaus 2002). Net value is the present discounted monetary value of any improved survival between the baseline and final periods, holding age and duration of diagnosis constant at their baseline values (modifiable risk), net of the increase in annual real modifiable spending per patient.

Our results suggest that, in each health system, the value of improved survival outweighs the increase in health spending. In comparing net value across the four health systems and different patient samples, we find mean net value that ranges between \$600 and \$10,000 for a \$100,000 value of a life-year. The net values remain positive when assuming only half of survival gains were due to medical care, even though we very conservatively attribute all medical spending to diabetes and focus only on improved survival rather than improved quality of life.

We also find that net value was positive for all age groups (see Figure 2 of Eggleston et al. 2020). Even among the relatively young prime-age workers living with diabetes (age 40 and 50) who have relatively small absolute risk of mortality, the monetary value of a small reduction in modifiable mortality risk exceeded their increase in medical spending. Moreover, net value remains positive and significant for individuals well beyond traditional retirement ages. These results demonstrate the importance of continued investments in treatments that deliver health outcomes of commensurate or higher value.

Indeed, similarly measuring and improving *value* of resource use by measuring *quality-adjusted* medical spending should replace discussion of medical spending without reference to health outcomes, just as metrics for *healthy* aging (e.g., *healthy* life expectancy and *quality-adjusted* life-years) have supplanted previous measures (e.g., life expectancy or life-years without adjustment for health or quality).

## Policy Implications

Confronting the challenges of aging societies requires careful thinking about the value of investments in new technologies for managing chronic conditions and avoiding across-the-board cost control measures that stifle high-value care as much as low-value care (Dunn and Fernando 2019). More research on whether quality-adjusted price changes differ significantly across divergent health systems would be a valuable contribution to that effort.

Like addressing climate change, making high-value medical care affordable requires concerted policy efforts based on rigorous research. Cost control without measuring net value may foreclose or delay important breakthroughs. Healthy aging to 100 and beyond will require being resiliently persistent in measuring the value of innovations for healthy aging and rewarding those that deliver high net value. Financing equitable access to those innovations constitutes a profound challenge—but also an opportunity. Policy makers need not wait for global collective action to take steps now toward measuring and rewarding value.

*This article is based on “Understanding ‘Value for Money’ in Healthy Ageing,” a chapter written by Karen Eggleston in the e-book Live Long and Prosper? The Economics of Ageing, published by the Centre for Economic Policy Research (CEPR).*

## Resources

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