IMPROVING QUALITY OF CARE IN EUROPE

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Estimating a monetary value of health: why and how

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Key Findings

- Monetary estimates of the value of health, as measured by a quality-adjusted life year (QALY), are difficult to obtain.
- Using a regression-based approach, the estimates of the monetary value of a QALY in Germany range between €20,000 and €80,000, dependent on different assumptions.
- For the UK, the base case empirical estimate for the monetary value of a QALY was £30,786.

What Problem Was This Research Addressing?

There is increasing pressure on health care budgets due to an ageing population and the development of new (expensive) treatment options. Drastically expanding health care budgets aiming to provide all possible treatment options to everyone at any time does not seem to be a realistic way forward. These resources would have to be taken away from other (public) sectors, like education or infrastructure. This raises the question, how decision-makers can decide on whether to reimburse certain health care services (or products) or not. Many jurisdiction use cost-utility analysis to inform these decisions. The additional costs of an intervention and its benefits, measured in terms of additional life years in full health (QALY), build a ratio (which is called ICER), which tells policymakers how much additional resources have to be spent for a certain gain in QALYs. This raises another question: How much are we, as a society, willing to pay for one QALY.

What This Research Adds

There is extensive research on estimating the societal value of a QALY using willingness-to-pay experiments. In this type of study, representative selections of individuals are directly asked, how much they would be willing-to-pay for a certain change in health. The disadvantage of this form of elicitation is that it is heavily influenced by phrasing and framing, leading to widely varying estimates (Ryen et al., 2015). In our research, we apply a different approach to estimate the monetary value of a QALY. In contrast to willingness-to-pay experiments, we do not directly ask individuals for a value, but rely on regression analysis to obtain a societal valuation of health. While this has been done before in the Australian context (Huang et al., 2018), we provide estimates for the UK and Germany. Furthermore, we obtain not only estimates for a QALY, but also a broader well-being outcome measure, which might be used in future health economic evaluations.

Project Partner:

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Methods

The applied methodology and the corresponding econometric models are known as „well-being valuation approach", which consists of two main elements. First, using regression techniques based on survey data, the impact of a change of income and health on overall life satisfaction is estimated. Second, the monetary value of health is calculated based on the marginal rate of substitution between health and income. In other words, this approach statistically estimates the average change in income necessary so that life satisfaction remains constant after a certain hypothetical change in health. That is why the obtained monetary value is also called compensating income variation.

For estimating the monetary value of health in Germany, we used longitudinal data from 32,832 individuals obtained from the German Socio-Economic Panel spanning from the year 2002 to 2016. The calculations for the UK were conducted based on a cross-sectional sample using an online survey administered in February 2018 with 1,512 individuals.
and aligned with those used by DOMAINE, a European wide project (Donor management in Europe) [1].

Policy Relevance of Research

- Estimates of the societal monetary valuation of health are relevant for deciding whether certain health care services should be reimbursed or not
- The ratio of additional costs and benefits of a medical innovation has to be compared to a certain threshold, which is often oriented on the value society attaches to health
- The estimates provided by this research inform such a threshold for both the UK and Germany
- By also providing a threshold estimate for a broader well-being outcome, we also inform decisions about interventions aimed at not merely improving health

Research Findings

As is common using this type of approach, the estimates depend on how the statistical models are specified. The specifications itself depend on the assumptions. Using the least parsimonious set of assumptions, the estimate for the monetary value of a QALY in Germany was €78,871. This value corresponds to the average amount of additional income that an individual has to be compensated with to remain on the same level of life satisfaction if their health stock is change by one QALY. In a more parsimonious model, which tries to overcome difficulties in measuring the causal impact of income on life satisfaction, the value was €22,683. Several other model specifications were estimated to test the sensitivity of estimates, with the bulk of values lying between €20,000-80,000.

For the UK, the base case empirical estimate for the monetary value of a QALY was £30,786, which compares well to previous estimates from the willingness to pay literature. The monetary value of a year in full capability well-being, the examined broader well-being measure, obtained from the same sample and using the same methodology amounted to £66,597. Throughout the conducted robustness checks, the value of capability well-being was consistently found to be about twice as high as that of health.

References

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