

Education and debate

Economics notes

Economic evaluation: an introduction

This is the first in a series of occasional notes on economics

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Economic evaluation has increasingly become part of modern health care. Rising costs, often associated with new technologies, and spending limits have prompted a search for greater efficiency. This need to demonstrate the relative cost effectiveness of new health technologies has led some countries, specifically Australia,¹ to make economic evaluation a requirement for public sector funding of new drugs. Furthermore, the American state of Oregon used economic evaluation in defining what services should be included in Medicare (although the rationing eventually implemented relied mainly on effectiveness rather than cost effectiveness²). This growing requirement to demonstrate the efficiency of new technologies means that economic evaluation is increasingly specified in research grants from both the NHS³ and pharmaceutical companies.

Economic theory, which takes private markets and rational individual decision making as the norm, has developed techniques—primarily cost benefit analysis—to evaluate programmes funded by the public sector. As the earliest forms of cost benefit analysis measured both costs and benefits in monetary terms, the term cost benefit analysis has come to mean those analyses which measure outcomes in monetary terms. Other forms, specifically cost effectiveness and cost utility analysis, have been developed to cover analyses in which outcomes are measured in health related terms. The results of such studies are usually ratios of costs to outcome. The most generalisable, cost per quality adjusted life year (QALY) gained, has provoked controversy and, despite its apparent simplicity, raises many technical complexities.⁴

Economic theory favours measuring costs and benefits in monetary terms because it avoids the problems of measuring and valuing non-monetary benefits, such as health gain or patient satisfaction. The branch of economics that deals with individuals—welfare economics—uses great ingenuity to avoid measuring the "utility" or satisfaction of different individuals. According to welfare economics, rational individuals will maximise their utilities and that of society in perfectly competitive markets. However, as discussed in this series, most healthcare evaluations have to grapple with benefits that are specific to health care, and about which consumers often have limited information. This pushes conventional economics thinking to its limits, raising difficult welfare comparisons between individuals and over time, leading some health economists to propose an "extra welfarist economics."⁵

Although many problems of economic evaluation relate to measuring and valuing benefits, some also relate to costs. Economics defines costs much more broadly than accountancy. The concept of "opportunity cost" defines the cost in terms of the next best opportunity foregone. As welfare economics takes a societal perspective, the relevant opportunity cost is that to society rather than to an individual or an organisation. Opportunity cost includes not only the direct costs of treatments, but also the knock on costs of treatments averted or postponed and the costs to patients such as time spent waiting or off work or due to being cared for. Such definitions of costs, while comprehensive, are rarely available from routine sources.

Terminology

Welfare economics is a branch of economics concerned with maximising social welfare. It assumes rational individuals who maximise their utilities, and that the overall welfare of society is a function of individual utilities. *Health economics as welfare economics* applies welfare economics to health care. *Health economics as extra-welfarist* is concerned with maximising health which may include both individual and social preferences. It builds on but goes beyond the individualist focus in welfare economics.

As the popularity of economic evaluation of health care has increased, so too has the demand for rigour in its methods. While some have argued long and persuasively for measures such as cost per QALY, others have pointed to the limited range of interventions that have been evaluated and to the lack of standard methods in deriving such estimates as are available. In response, standardised methods for economic evaluation have been suggested.⁶

The problems of combining costs and benefits in evaluating health care have led some to caution against doing economic evaluation as part of clinical trials.³ The argument relates partly to the difficulty of capturing the full extent of costs in trials, the fact that the power of trials is usually set in terms of benefits not costs, and the fact that trials may be atypical. Modelling and simulations, which have been proposed as alternatives to economic evaluations alongside clinical trials, have, however, also been criticised for being open to bias.⁷ Economic evaluation has been dubbed a "half way technology"⁸ because of the lack of standardised approaches which requires each study to start anew rather than build on previous work. Others have doubted the benefits of standardisation, favouring instead research on unresolved topics such as outcome measurement, discounting, and the uses to which economic evaluations have been put.

Owing to the increasing importance of using economics in healthcare decision making the *BMJ* will publish a series of economics notes. These do not attempt a comprehensive review of economic evaluation⁴; rather they aim to discuss issues which have arisen in the course of designing and carrying out evaluations. Furthermore, the series will try to clarify economic terminologies.

References

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