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Evaluation of prevention: A challenge for economists

Juergen Wasem

Professor Juergen Wasem is Chair of Medical Management at the University of Duisburg-Essen, Germany

People have high expectations of public programs but want to pay low taxes. Scarcity of resources is an inescapable feature of public programs, therefore. Public agencies must make the best out of these tensions. Technology assessment and economic evaluation have been developed in the past 40 years as tools to support decision makers.

With regard to health care services, there is an ongoing discussion among economists what the final goal of health interventions, to be measured in an economic evaluation, should be: is it overall (social) welfare (the "welfarist" position in that discussion) or is it (only) improvement in health (the "extra-welfarist" position) (Jeremiah 2000). Whereas in principle, most economists would agree that the maximand should be overall welfare, in practice, in most health economics evaluations, researchers apply the extra-welfarist approach – the cost-effectiveness of an intervention in relation to another one is determined by comparing monetary costs and either a clinical outcome (like strokes avoided or life years gained) or the quality-adjusted life year (QALY).

The extra-welfarist approach suits different types of interventions in different ways. It fits better for drugs or surgery than for social interventions. Many social interventions especially in prevention affect not only health, but have an impact on other dimensions of welfare, like social relations in a certain setting. Therefore, often a broader approach would suit better in these cases. This is not only an issue with regard to the outcome chosen, but concerns the type of costs included as well.

There is a consensus amongst health economists that a "societal perspective" on costs would be adequate to ensure efficiency: All costs which occur somewhere in society should be taken into account (Russel et al. 1996). Decision makers of public agencies (like NICE in the UK) are mainly interested, however, in costs of the publicly financed health care system (being it a tax financed national health service or a social health insurance system). This focus may lead to "wrong" decisions from a societal perspective: If a preventive activity leads to costs in the health care system but savings are outside health care (for instance in the educational system), ignoring these savings makes the intervention look less efficient than it actually is.

One of the major challenges in evaluation of preventive programs is the weak link and the often long time lag between interventions and their effects (on health). On the one hand, this creates problems of adequate study designs to measure effectiveness. Often the data will not be available from interventional trials only but from a combination with data from observational studies. Modelling (for instance using Discrete Event Simulations or Markov Models) is necessary to generate incremental cost-effectiveness ratios in these cases. Decision makers often mistrust models – it is therefore essential to be transparent about the assumptions and calculations in a model (Canadian Agency for Drugs and Technologies in Health (CADTH) 2006).

On the other hand, the discrepancy between flow of resources (now) and return on investment (many years later) has to be considered when calculating the cost-effectiveness of preventive interventions according to economists' view. The typical approach with regard to this time lag is to discount future costs and benefits. For reasons of internal consistency and in order to avoid incentives for infinite postponing preventive interventions, most health economists recommend to discount costs and outcomes at the same rate (Lipscomb et al. 1996).

Discounting of future benefits is often not accepted by non-economists. More recently also among economists there is an increasing discussion whether non-monetary future outcomes (like QALYs) should be discounted at a lower rate than costs (Brouwer et al. 2005). NICE until 2004 discounted costs by 6 %, whereas QALYs were discounted only by 1.5 %; since

2004 costs as well as QALYs are discounted with 3.5 % each (National Institute for Clinical Excellence 2004). It is recommended in health economic guidelines to demonstrate the effects of discounting in a sensitivity analysis.

After all: Economic evaluation especially of prevention is a true challenge. However: Decisions on health related interventions without economic evaluation in a world of scare resources would lead to less welfare and less health than possible.

Juergen Wasem

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Address for correspondence

Prof. Dr. Jürgen Wasem
University of Duisburg/Essen
Chair of Medical Management
FB 5 Wirtschaftswissenschaften
Campus Essen
D-45117 Essen
Gemany
juergen.wasem@uni-essen.de