Economic Evaluation of Drug Therapy
A Review of the Contingent Valuation Method

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Summary

The aim of this paper is to review the use of the contingent valuation (CV) method in economic evaluation of drug therapy. With the CV method, willingness to pay for a project 'treatment' is measured with survey methods, which makes it possible to carry out traditional cost-benefit analysis. The CV method has been developed in environmental economics and is now the most commonly used method of measuring environmental benefits. Due to the limitations of existing methods, empirical applications are starting to appear in the health field as well. From the empirical applications with respect to drug treatment it is evident that it is possible to achieve acceptable response rates. The methodological problems encountered when measuring willingness to pay with survey methods are similar to the problems encountered when measuring utility and quality of life in cost-utility analysis. It is concluded that further studies with the CV method are necessary to further explore questions concerning the reliability and validity of the method in this field.
It has become increasingly important to carry out economic evaluations of drug therapy. In an environment of scarce resources it is necessary to consider both costs and benefits in order to improve decision-making and to use resources efficiently. There are several different methods to carry out economic evaluation. During the 1960s and 1970s, studies of the economic costs of illness dominated (Cooper & Rice 1976; Weisbrod 1961). The benefits of new medical technologies were calculated as reduced treatment costs and reduced loss of production. This method, known as the human capital approach, has several limitations. There is a lack of theoretical foundation and the intrinsic value and quality of life (QOL) are ignored (Jons­son 1976). These weaknesses of the human capital approach led to the development of cost-effective­ness analysis (Klarman et al. 1968). In cost-effectiveness analysis, benefits are measured in physical units. The most common effectiveness measure is life-years gained. The method was further refined to take into account QOL (Boyle et al. 1983; Klar­man et al. 1968; Weinstein & Stason 1976; Wil­liams 1985).

Although cost-effectiveness analysis is an im­portant step forward, the method is not without drawbacks. Important problem areas are the question of which costs to include in the analysis, the discounting of effects, how to obtain utility values and the construction of valid utility indexes (Johannesson & Jônsson 1991a). A severe limitation is that it is impossible to determine whether a treatment is worthwhile, i.e. whether benefits exceed costs. Furthermore, risk is not explicitly taken into account in the analysis. The theoretical basis of cost-effectiveness analysis is also unclear. The objectives of the decision-maker are explicitly or implicitly taken for granted.

There are 2 different perspectives for cost-bene­fit analysis. According to the traditional approach, based on the Pareto criterion, the aim of cost-bene­fit analysis is to maximise individual preferences (Mishan 1971). In the alternative approach the analysis is based on the preferences of the decision maker and the aim of the analysis is to maximise the goals of the decision maker (Sugden & Wil­liams 1978). Cost-effectiveness analysis is an ex­ample of the decision-maker approach to cost­benefit analysis.

The deficiencies of cost-effectiveness analysis has led to increased interest in the contingent valuation (CV) method (Johannesson & Jônsson 1991a). With the CV method, willingness to pay is measured using survey methodology, which makes it possible to carry out traditional cost-benefit analy­sis founded in economic welfare theory. The CV method has been developed in environmental eco­nomics and is now the most common method of valuing environmental benefits (Cummings et al. 1986; Mitchell & Carson 1989). It has been exten­sively used to ascertain the value of public goods and the value of risk reductions (Acton 1973; Ber­ger et al. 1987; Brookshire et al. 1982; Gegax et al. 1985; Jones-Lee 1976; Jones-Lee et al. 1985; Mitchell & Carson 1981; Randall et al. 1978; Rowe et al. 1980; Smith & Desvousges 1986, 1987).

The aim of this paper is to review the use of the CV method in economic evaluation of drug therapy. We discuss the basis of cost-benefit analy­sis, the CV method and the empirical results with respect to drug treatment.

1. Cost-Benefit Analysis

In a cost-benefit analysis both costs and benefits are measured in monetary terms. Since costs and benefits are measured in the same units it is possible to judge whether a project is desirable (benefits greater than costs) from a societal viewpoint. The costs are measured as opportunity costs, which means the best alternative benefit, and benefits are measured as the maximum willingness to pay for the project. The decision rule in cost-benefit analy­sis is that the project should be undertaken if benefits exceed opportunity costs.

A common interpretation of a positive difference between the social benefits and the social costs is that gainers are hypothetically able to more than compensate losers. However, according to the so-called ‘Boadway paradox’ (Boadway 1974), gainers may be unable to compensate losers even if the sum of individual compensating variations or