# OUTCOME VALUATION IN THE ECONOMIC EVALUATION OF HEALTHCARE

by

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# CERTIFICATE OF AUTHORSHIP / ORIGINALITY

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

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# Abstract

Economic evaluation of healthcare interventions (such as pharmaceuticals, medical devices and technologies) considers both the effect of the intervention on patients, and the costs borne by the government and often the individual themselves. This simultaneous consideration of costs and benefits is now standard practice in reimbursement decisions, both in Australia and elsewhere. This thesis focuses on the assessment of benefits, specifically how we place a value on the health changes patients experience as a result of a health care intervention.

There is a well-established framework for how outcomes are valued in health care, but this framework is built on a number of contentious assumptions. For example, health is assumed to be the sole outcome of a healthcare system, and society is assumed to be inequality-neutral. This thesis identifies and explains these assumptions and then focuses on testing two of them in the empirical chapters. The overall aim of the thesis is to explore the extent to which the current framework reflects population preferences, and whether the framework can be adapted to be more reflective of population preferences. The empirical chapters in this thesis consider these issues, using a discrete choice experiment (DCE). For reasons presented in Chapters 3 and 4, this technique offers very attractive properties for answering these types of questions.

The standard approach to valuing health outcomes uses the quality-adjusted life year, in which the value of a health profile is the product of quality of life and length of life. For this to be operationalised, we need to be able to describe health states in a way which captures all relevant dimensions of quality of life that are important to people, and then we need to assign values to health states. This thesis argues that the current methods for assigning values to health states are very onerous for survey respondents, and prone to significant bias. Standard valuation techniques require the respondent to identify preferences around quality of life through the acceptance of a risk of death, or the reduction of life expectancy to alleviate poor quality of life. However, these fail to control for issues such as risk-aversion or time preference. The first empirical analysis uses a DCE to value health states for the SF-6D, a health state valuation instrument that is based on the very widely used quality of life instrument the SF-36. The use of a DCE aims to remove (or control for) these biases. This chapter represents a methodological advance through the use of a DCE, and produces the first Australian algorithm for the SF-6D.

The second empirical analysis considers the assumption that the value of health improvement is independent of who receives it. Therefore, it is conventional for an extra year in full health to be regarded as being of the same value to society independent of who receives it. The chapter results suggest that the average respondent prefers giving additional health to people with low life expectancies, carers, and non-smokers even if it reduces total health for society as a whole. The chapter concludes by identifying how these preferences might be integrated into economic evaluation.

This thesis explores two areas in which the conventional approach to outcome valuation in economic evaluation are subject to concern. It demonstrates how these concerns might be overcome by augmenting the existing framework with relatively easily-collected stated preference data, and offers a template for other analyses exploring other parts of how health outcomes should be valued.