



Review article

Attributes and weights in health care priority setting: A systematic review of what counts and to what extent



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ABSTRACT

In most societies resources are insufficient to provide everyone with all the health care they want. In practice, this means that some people are given priority over others. On what basis should priority be given? In this paper we are interested in the general public's views on this question. We set out to synthesis what the literature has found as a whole regarding which attributes or factors the general public think should count in priority setting and what weight they should receive. A systematic review was undertaken (in August 2014) to address these questions based on empirical studies that elicited stated preferences from the general public. Sixty four studies, applying eight methods, spanning five continents met the inclusion criteria. Discrete Choice Experiment (DCE) and Person Trade-off (PTO) were the most popular standard methods for preference elicitation, but only 34% of all studies calculated distributional weights, mainly using PTO. While there is heterogeneity, results suggest the young are favoured over the old, the more severely ill are favoured over the less severely ill, and people with self-induced illness or high socioeconomic status tend to receive lower priority. In those studies that considered health gain, larger gain is universally preferred, but at a diminishing rate. Evidence from the small number of studies that explored preferences over different components of health gain suggests life extension is favoured over quality of life enhancement; however this may be reversed at the end of life. The majority of studies that investigated end of life care found weak/no support for providing a premium for such care. The review highlights considerable heterogeneity in both methods and results. Further methodological work is needed to achieve the goal of deriving robust distributional weights for use in health care priority setting.

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1. Introduction

Countries around the world face the question of how best to set priorities in the allocation of scarce health resources. Traditionally, economic evaluation has been adopted as the preferred approach to guide policy making in such decisions, with the quality-adjusted life year (QALY), a metric of health gain that combines both quality of life and length of life, being the most commonly adopted measure of the value of a health care treatment (Drummond, 2013; Hjelmgren et al., 2001). However, evidence from studies involving members of the public in various countries (Stafinski et al., 2011;

Whitty et al., 2014a), from studies of past health technology assessment (HTA) decisions (Clement et al., 2009; Devlin and Parkin, 2004; Harris et al., 2008) and from HTA guidelines (Canadian Agency for Drugs Technologies in Health, 2006; National Institute for Health and Clinical Excellence, 2008; Pharmaceutical Benefits Advisory Committee, 2013) suggests that QALY gain may not be the sole determinant of value.

A key question is therefore what additional factors the general public (whose taxes contribute to funding health care) find important in resource allocation decisions? A second question is what distributional (or relative) weights these factors should receive in priority setting. Such weights attach different (numerical) importance to QALYs based on the characteristics of the beneficiaries.

These two questions have been explored extensively in the health economics research literature (the first more so than the

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second). However, little is known about what the literature, as a whole, has found regarding which factors or attributes the general public think should count, and to what extent, in health resource allocation decisions.

This systematic review focuses on studies that have elicited stated preferences from the public as to what factors should count in allocating publicly-funded health care; and the weights to be attached to such factors. We address four questions: (1) which methods have been used to elicit stated preferences for attributes considered important in priority setting?; (2) which attributes arise out of the application of such methods?; (3) which methods have been used to elicit distributional weights?; and (4) what are the estimated distributional weights?

A small number of literature reviews on preferences in relation to priority setting have been conducted (Dolan et al., 2005; Schwappach, 2002a; Shah, 2009; Stafinski et al., 2011; Whitty et al., 2014a; Youngkong et al., 2009). In general they addressed our second question (an exception is Whitty et al. (2014a) which also addressed our first question). However, to understand the differences between results about preferences it is necessary to understand how they were generated. Of importance too, after a large number of research studies, is whether a dominant approach has emerged for elicitation of preferences and weights, and whether a set of weights is ready for use in priority setting.

Thus, this paper contributes to the literature by, first, addressing new and important questions and, second, more completely addressing questions previously considered. In contrast to previous reviews, we consider a broader range of attributes and summarise them under three categories: (a) the characteristics of beneficiaries of the health gain/health care; (b) the characteristics of health gain; and (c) other important contextual factors. We highlight the degree of consensus amongst the literature and, wherever possible, identify possible reasons for differences. We focus on studies using samples representing the general public based on age and gender. Our review covers a broader range of methods and, importantly, compares results from different methods. It is also the first to classify the perspectives used in each study based on the six categories proposed by Dolan et al. (2003).

2. Methods

2.1. Overview

PRISMA guidelines were used for the design of the review. The quality of studies included in the review was not evaluated because there is no single approach to assess the quality of the studies across the variety of methods used.

2.2. Literature search

Four databases were searched to ensure coverage across medicine and economics: Ovid Medline (1946 to present with daily update), Embase, Econlit and Web of Science (SCI-expanded and SSCI) from conception to 13 August 2014. Search terms were developed for two categories: health care priority setting (defined as setting priorities in the context of the allocation of publicly-funded health care) and preferences and were initially developed for the Ovid Medline database then modified for each database. Studies not reported in English were excluded from the review during screening and eligibility assessment. The complete search strategy, including search terms, for all four databases is in Supplementary Appendix 1. Additional studies were identified via a hand search of the references and citations from the included articles.

2.3. Eligibility criteria

Inclusion/exclusion criteria are in Table 1. Further to above, included studies were peer reviewed and must have involved elicitation of stated preferences between competing criteria, interventions, or patient groups applicable to priority setting for publicly-funded health care. Studies should not be disease or treatment specific in order to identify generic attributes, although some included studies provided clinical information merely as part of the question framing. Studies were excluded if their sample came from subgroups of the general public due to the focus on studies using samples representative of the general public, particularly in terms of age and gender. Studies using students do not provide such representativeness while those using small samples may do. The inclusion/exclusion criteria were sequentially applied, starting with the language requirement and ending with the sample criterion.

Two authors (YG and PG) independently screened the titles and abstracts of all studies identified from the search strategies. Full-texts of the studies included after the initial screening were also independently reviewed by these two authors. Discrepancies were resolved by discussion until a consensus was reached.

2.4. Information extraction

Data were extracted based on the four questions outlined in the introduction and also according to: (a) characteristics of beneficiaries of the health gain/health care; (b) characteristics of health gain; and (c) other important contextual factors. We note that classification into these three groups is subjective and other classifications are possible.

3. Results

3.1. Overview

The process of study selection is summarised in Fig. 1. The database and hand searches initially identified 4504 studies, with 64 papers included in the review. Table 2 documents the complete list of studies (and attributes explored in each). Their detailed summary are in Supplementary Appendix 2.

The 64 studies spanned over two decades from 1989 to 2014, Fig. 2 revealing an increasing trend during this period. This may also reflect that earlier studies were excluded because they used non-representative samples of the general public. Studies were mostly carried out in the UK ($n = 20$), the US ($n = 11$), and Australia ($n = 9$). Sample sizes varied from 23 to 17,657 with a median of 556. Around 70% of studies used a sample size larger than 200, and 55% greater than 500 (See Supplementary Appendix 2).

3.2. Methods for stated preference elicitation

Eight preference elicitation methods have been used, which we categorise as choice based techniques or ranking based techniques (see Fig. 3). Choice based approaches have dominated the literature (used 62 times in 60 of the 64 studies) with ranking tasks used in 4 studies. Within choice based approaches, DCE (including one best worst scaling study) has been used 17 times, PTO 15 times, choice tasks with bespoke design 15 times, simple choice tasks varying a single attribute 9 times, contingent valuation method (CVM) (or Willingness to Pay (WTP)) 5 times and a choice experiment with allocation of points once. The popularity of DCE has been increasing over time – 50% of studies using DCE have been conducted in the past five years while only a third of the total PTO studies were undertaken during that time.

Following Dolan et al. (2003), the perspective framing used in

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