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**HAS THE QUALITY OF ECONOMIC EVALUATIONS**  
**CHANGED IN THE LAST DECADE?**

**PROTOCOL FOR A SYSTEMATIC REVIEW OF THE**  
**EVIDENCE**

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**NOTICE TO READERS**

This paper represents a protocol for a systematic review designed following Cochrane format. The text is written for comprehension by those who are unfamiliar with health economics, systematic reviews or both.

The authors would be grateful for constructive comments on any part of the protocol and especially on the list of “studies identified so far prior to the application of inclusion criteria”.

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## Cover sheet

### Title

The Quality of Economic Evaluations in Health Care

### Reviewers

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None

## Background

Economic evaluation is increasingly accepted as an important tool for decision-making in healthcare. One aspect of this phenomenon is the rise in published evaluations in the last two decades (Elixhauser 1993, Elixhauser 1998). Economic evaluations are analytical studies comparing costs and outcomes of investing resources in one or more alternatives. Although it is unclear to what extent decisions on resource allocation are made on the basis of evidence from economic evaluations (Drummond 1996, Tolley 1997), the potential costs of making decisions based on methodologically weak evidence are universally accepted (Jefferson, Demicheli and Mugford 2000).

A number of reviews carried out and published in the period 1990-94 illustrated to research community and decision-makers the variability of quality of methods employed by authors of economic evaluations and their poor reporting (Drummond and Jefferson 1996). The quality of methods employed in preparing these reviews appeared variable.

In addition a survey of editorial practices on general and specialist medical journals found no editorial policies in place to assess economic evaluations prior to publication (Jefferson and Demicheli 1995, Demicheli and Hutton 1999).

A series of initiatives aimed at increasing the homogeneity and quality of economic evaluation and their reporting have taken place. These are summarised as follows:

- The production of guidelines for carrying out and submitting economic evaluations to regulatory and reimbursement bodies.
- The production of guidelines and checklists for submission and editorial management of economic evaluation to medical journals.
- Further research into the general topic of the quality of economic evaluation methods.

There is a requirement for the preparation and maintenance of a systematic review summarising the evidence of quality of methods employed in economic evaluations in healthcare in the light of the quality of methods employed by the reviews of such studies.

A review would enable identification of areas of weakness and the formulation of recommendations to address these, leading to a possible methodological improvement. It would additionally provide indirect evidence of the effectiveness of the measures taken to address the problems of poor methods in economic evaluations of healthcare interventions.

## Objectives

We intend examining reviews (“research synthesis studies”) of economic evaluations in health care (“primary studies”) to identify and assess:

Changes in the quality of economic methods.

Changes in the quality of reporting methods.

Quality of methods of research synthesis studies of economic evaluations

We intend assessing the validity of the conclusions of the research synthesis studies included in our review in the light of the quality of the methods employed to identify, retrieve, assess and summarise evidence from primary studies (see Methods section).

## Criteria for considering studies for this review

**Types of studies** Systematic or semi-systematic research synthesis studies carried out during the period 1990-2000 (see Methods section for definitions).

**Types of participants** Reports of original research synthesis, regardless of publication status.

**Types of interventions** Included studies should assess methodological quality of economic evaluations in healthcare either by intervention (e.g. cholesterol-lowering drugs) or by economic study design (e.g. Cost-Utility Analysis) or by specific methods used in economic evaluations (e.g. contingent valuation).

### Types of outcome measures

Quality of methods of conducting and reporting of economic evaluations within research synthesis studies included in our review will be assessed against single and grouped variables listed in the *BMJ* checklist for editors and authors of economic evaluations (Drummond and Jefferson 1996, Gerard 2000):

Quality of research synthesis studies will be assessed using criteria adapted from Oxman 1991, Oxman 1994 and Mulrow and Cook 1998.

## Search strategy for identification of studies

The following sources will be searched for reviews (research synthesis studies) on the quality of economic evaluations:

The Cochrane Library, which includes the NHS Economic Evaluation Database (NHS EED and the Health Technology Assessment Database (HTA).

MEDLINE (from 1990-) using the following subject strategy which is derived from that designed by Julie Glanville, Information Services Manager, NHS Centre for Reviews and Dissemination/Centre for Health Economics, University of York, UK (<http://www.york.ac.uk/inst/crd/>):

economics(fs) or explode Costs-and-Cost-Analysis (mh) or Economic-value-of-life (mh) or explode Economics-Dental (mh) or explode Economics-Hospital (mh) or explode Economics-Medical (mh) or Economics-Nursing (mh) or Economics-Pharmaceutical (mh) or explode Fees-and-Charges (mh) or explode Budgets (mh) or explode Models-Economic (mh)

or

(cost or costs or costed or costly or costing or cost?utili\* or cost?benefit or cost?effectiv\* or cost?minimi\* or cost?consequence or economic\* or pharmaco-economic\* or price\* or pricing or contingent valuation or willingness to pay or conjoint analysis) (tw,mh)

The following search filter with high sensitivity for identifying reviews, derived from the strategies developed by Boynton and colleagues (Boynton 1999) will be added to the above subject search strategy to identify research synthesis studies of economic evaluations:

systematic\* near4 (review\* or overview\*) (tw) or  
 (meta?analy\* or meta analy\*) (tw,mh,pt) or  
 Randomized-Controlled-Trials (mh) or  
 synthesis (tw) or  
 (data near2 extraction) (ab) or  
 published (ab) or  
 medline (ab) or  
 (review\* or overview\*) (tw,mh,pt) or  
 literature (ab) or  
 articles (ab)

All languages will be considered.

The above strategies will be adapted for searching the other databases listed below:

EMBASE (1990-present); HealthStar (1990-present); Economics Literature Index (EconLit) (1990-present); Health Economic Evaluations Database (HEED) (1990-present); System for Information on Grey Literature in Europe (SIGLE) (1990-present); Dissertation Abstracts Online (1990-present).

Databases of conference proceedings will be checked (e.g. ISTAHC Database <http://www.istahc.org/en/database.html>, British Library Inside) and we shall correspond with members of the Health Economists Study Group (HESG), the Cochrane Health Economics Methods Group and the

International Health Economist Association (iHEA) to seek to identify unpublished studies.

We will handsearch issue of *Health Economics* from 1992 to the end of 2000.

## Methods of the review

We define systematic research synthesis studies as those applying explicit methods to systematically identify, locate, retrieve and analyse published and unpublished data on the quality of economic evaluation methods in order to diminish bias and generalise conclusions.

We define semi-systematic research synthesis studies as those studies fulfilling at least four of the nine quality criteria for systematic reviews (see below).

One or more reviewer will examine each retrieved citation for relevance and those thought to be relevant will be retrieved in full.

Two reviewers will compare each study against the selection criteria independently, resolving disagreements by discussion.

Two reviewers will then extract data on:

- Study Design
- Data Collection
- Analysis and interpretation of results

in the economic evaluations within research synthesis studies included in our review.

Quality of research synthesis studies will be assessed using the following criteria adapted from Oxman 1991, Oxman 1994 and Mulrow and Cook 1998:

1. Were the search methods used to find evidence (original research) on the primary questions stated?
2. Was the search for evidence reasonably comprehensive?
3. Were the inclusion criteria used to select articles reported and appropriate?
4. Was bias in the selection of studies avoided?
5. Were the criteria used for assessing the validity of the included studies reported?

6. Was the validity of all studies referred to in the text assessed using appropriate criteria (either in selecting studies for inclusion or analysing the studies that are cited)?
7. Were the design and/or methods and/or topic of included studies broadly comparable?
8. Were the conclusion made by the author(s) supported by data and/or analysis reported in the review?
9. Will the results help resource allocation in healthcare?
10. How would you rate the scientific quality of the review (on a 1 to 7 scale)?

We will perform a descriptive sensitivity analysis based on the quality of research synthesis studies.

We expect to carry out a descriptive review and to summarise and report results in a table similar to the following:

<b>Reference</b> (first author and year of publication or of study)	<b>Topic and study question</b>	<b>Number of criteria for systematic reviews satisfied</b>	<b>Study conclusions</b>	<b>Generalisability</b>	<b>Remarks</b>



## **Description of studies**

## **Methodological quality of included studies**

## **Results**

## **Discussion**

## **Reviewers' conclusions**

## **Implications for practice**

## **Implications for research**

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## **Potential conflict of interest**

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## **Studies awaiting assessment**

## **Ongoing studies**

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## Notes

### Unpublished CRG notes

### Published notes

### Amended sections