

The Quality of Search Methodology and Search Reporting in Published Systematic Reviews of Economic Evaluations: Search Sources



Hannah Wood, Mick Arber, Julie Glanville

York Health Economics Consortium, Level 2 Market Square, University of York, Heslington, York, YO10 5NH, UK

Background and Objectives

The economic evaluation of healthcare interventions is now an accepted element of healthcare decision-making and priority-setting in many countries. As the number of published economic evaluations has grown, so has the number of systematic reviews of economic evaluations. However, the quality of search methodology used in recent reviews has not been investigated in detail. This study sought to identify which resources were used to identify studies in recent, published systematic reviews of economic evaluations, and to investigate whether the choice of resources reflects current recommendations for the conduct of such reviews.

Methods

A pragmatic search to identify a sample of recent systematic reviews of economic evaluations (published since January 2013) was undertaken in January 2014 using MEDLINE and MEDLINE In-Process via Ovid SP. Reviews were included if they met the following inclusion criteria:

- The review methods were explicitly described as systematic by the review authors in the title or abstract, or the review was published in the Cochrane Database of Systematic Reviews (approaches used by researchers who described their review methods as systematic were of interest, whether or not they followed standard systematic review methodology in practice);
- The title and / or abstract of the systematic review was judged to clearly and explicitly indicate that its objectives were to review economic evaluations of healthcare interventions (reviews of both clinical and cost effectiveness were excluded);
- Full text could be accessed either free of charge or via local subscriptions;
- Reviews were published in English language.

For each review, data were collected on: the general medical literature databases searched, specialist economic databases searched, health technology assessment sources searched, additional sources and supplementary search techniques used. Results were compared against the search resources required as a minimum by NICE when searching for published economic evidence for single technology appraisals¹, and the resource types recommended in the *Costs and economic evaluation* chapter of the web resource *Summarized Research in Information Retrieval for HTA (SuRe Info)*². NICE standards were chosen as an example of reimbursement agency recommendations for specific resources. The SuRe Info recommendations were chosen as an example of a summary of the research evidence on which resources should be searched for health technology assessment.

Results

1,743 records were screened. Based on an assessment of title and abstract, 65 reviews met the inclusion criteria; 23 reviews were not available through subscriptions or free of charge, leaving a sample of 42 reviews for analysis. Five reviews (12%) met or exceeded the search resources recommended by NICE (MEDLINE, Embase, EconLit, NHS EED) (see Table 1). Nine reviews (21%) searched at least four of the six types of resource recommended by *SuRe Info* (specialist economic databases, general databases, HTA databases, webpages of HTA agencies, grey literature, collections of utility studies). None of the reviews searched all six (see Table 2).

Table 1: Search resources required for NICE submissions

Search resource	Percentage of reviews searching the resource
MEDLINE	95%
Embase	60%
EconLit	17%
NHS EED	79%*
All 4 required sources	12%

Competing Interests

Julie Glanville is co-author of the *SuReInfo* chapter on Costs and economic evaluation.

Contact Us

mick.arber@york.ac.uk

Telephone: +44 1904 323620

Website: www.yhec.co.uk

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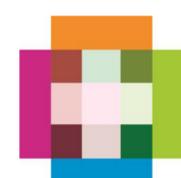
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Table 2: Types of search resources recommended by SuRe Info

Search resource type	Percentage of reviews searching resource type
Specialist economic databases (e.g. NHS EED, HEED, CEA Registry)	79%*
Technology assessment databases (e.g. HTA Database)	57%*
General medical literature databases (e.g. MEDLINE, Embase)	100%
Websites of HTA agencies	12%
Grey literature (e.g. conferences such as ISPOR and HTAi, RePEC)	26%
Collections of utility studies (e.g. SchARRHUD)	0%
All 6 types of recommended resources	0%
At least 5 of the 6 types of recommended resources	12%
At least 4 out of 6 types of recommended resources	21%

* The figures for NHS EED, specialist economic databases and technology assessment databases assume that where authors indicate a search of The Cochrane Library, this has included a search of NHS EED and the HTA database.

Discussion and Conclusions

Our study is potentially limited by the pragmatic approach taken to identify the sample of systematic reviews for analysis. The study may therefore not have included all relevant systematic reviews. Despite this, we feel that the 42 reviews included are a reasonably representative sample of relevant systematic reviews of economic evaluations, covering a broad range of healthcare topics (including cancer, infectious disease, cardiovascular disease, mental health, musculoskeletal disease, lifestyle, respiratory disorders and others). This sample enables conclusions to be made regarding whether the choice of search resources reflect current recommendations for the conduct of such reviews.

Determining which resources were searched by the included reviews was difficult due to lack of clarity in the reporting of search methods. Reviews frequently contained errors or lack of clarity in the names of databases and interfaces. This forced us to make assumptions; most frequently that a review reporting a search of "The Cochrane Library" searched all of the databases contained within this resource. This assumption might have led us to over-estimate the number of reviewers who included NHS EED and the HTA Database (individual databases of The Cochrane Library) in their search for evidence.

These results suggest that the information resources used to identify evidence for the majority of recently published systematic reviews of economic evaluations in healthcare do not conform to current recommendations for those reviews. Reviewers should consult current recommendations before carrying out searches – conducting limited searches risks missing relevant economic evaluations. It is also important however, that these recommendations are based upon robust evidence. The research literature indicates that a search of MEDLINE, Embase and NHS EED will be sufficient to identify the majority of relevant economic evaluations published in the journal literature^{3,4,5}; the utility of searching a resource such as EconLit, therefore, (as included in NICE requirements), is less clear. It is important that reviewers consider how to identify economic evaluations which are unpublished or published outside journal literature (as recommended by *SuRe Info*), but there is little research evidence on how best to identify unpublished economic studies. Further research into the unique yield of sources to identify unpublished economic evidence is planned which will assist reviewers to make evidence-based decisions on the most appropriate resources to search.

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