

How is information on adverse effects identified for systematic reviews?

A survey of methods used from 1994 to 2005

Golder S¹, Loke Y², McIntosh HM³

¹Centre for Reviews and Dissemination (CRD), University of York ²University of East Anglia ³Cochrane Infectious Diseases Group

Background

In order to provide a balanced overview, systematic reviews should consider both the beneficial and harmful effects of an intervention. The methods used in systematic reviews should be both transparent and reproducible and the searches used to identify research evidence should be both thorough and systematic^{1,2}. However, reviewers are hampered by a lack of information about how to identify studies that contain data on adverse effects in a thorough but manageable way^{2,4}.

Objective

We aimed to determine what methods are used to retrieve included studies in published systematic reviews of adverse effects.

Methods

Systematic reviews in which adverse effects were the primary outcome were identified by screening all records in:

- The Cochrane Database of Systematic Reviews (CDSR), via The Cochrane Library, Issue 2:2005
- The Database of Abstracts of Reviews of Effects (DARE), via the Centre for Reviews and Dissemination (CRD) website, April 2005.

Two information specialists independently extracted data on the search methods reported in these reviews. Data were extracted regarding databases searched and other methods used to identify information, categories of search terms used (from the PICO groupings – Patient, Intervention, Comparison, Outcome), fields searched (such as title, abstract, indexing), synonyms and truncation used and any limits applied.

Results

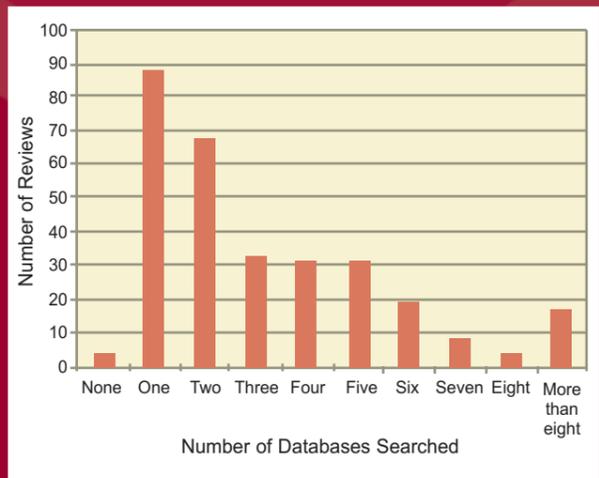
We identified 277 systematic reviews that met our inclusion criteria.

Which databases were searched?

The median number of databases searched was 2 (range 0 to 25) (figure 1).

Figure 1:

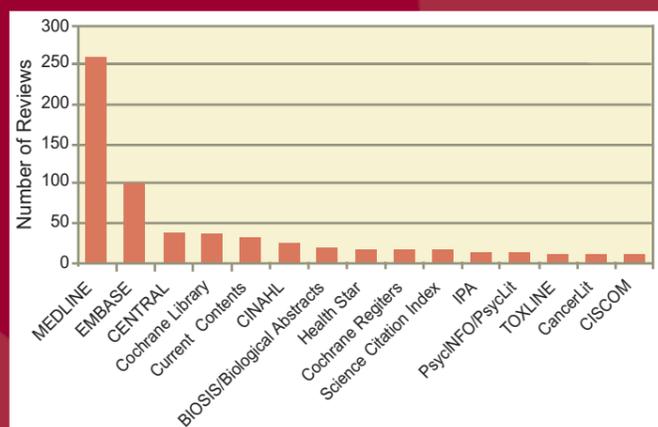
Number of Databases Searched



The most frequently searched database was MEDLINE, followed by EMBASE (figure 2).

Figure 2:

Databases Searched

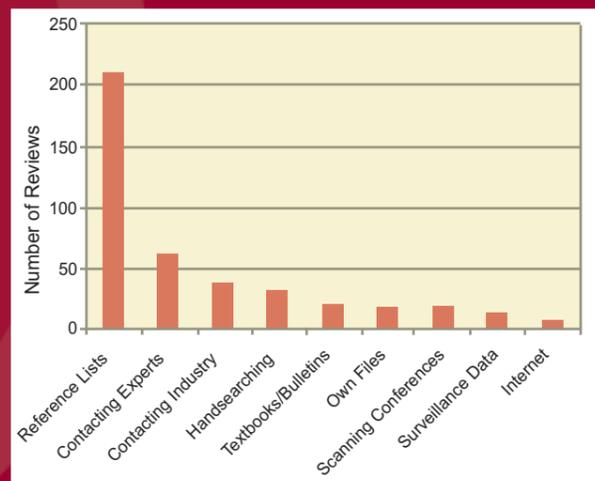


What other methods were used?

Checking reference lists was the most popular additional approach used to identify research evidence for the reviews (figure 3).

Figure 3:

Additional Approaches to Identifying Research Evidence

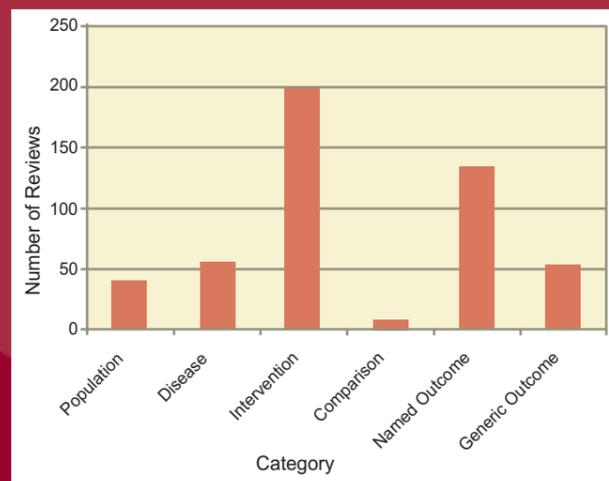


Which categories of search terms were used?

The majority of the reviews (214/277) gave some indication of the types of search terms used. The PICO categories 'interventions' and 'outcomes' were the most commonly used (figure 4).

Figure 4:

Categories of Terms Used in Database Search Strategies



How were the search strategies reported?

Although the majority of the reviews gave an indication of the types of search terms used, few specified to which fields (for example, title, abstract, indexing) the terms were limited or how the terms were combined. Few reviews gave details of any restrictions used such as language, date or search filter. Less than 5% (13/277) of the reviews gave enough information for their searches to be reproduced or to allow detailed critical appraisal.

Conclusions

Most systematic reviews of adverse effects report insufficient information to reproduce the search strategy. Few reviews appear to go much beyond searching MEDLINE and reference checking to gather information. This absence of information makes it difficult to judge the quality of the searches and may reduce readers' confidence in the reliability of the findings.

References

1. NHS Centre for Reviews and Dissemination. Undertaking systematic reviews of research on effectiveness: CRD Report 4. 2nd ed. York: University of York, NHS Centre for Reviews and Dissemination; 2001.
2. Higgins JPT, Green S, (editors). Cochrane Handbook for Systematic Reviews of Interventions 4.2.5 [updated May 2005]. In: The Cochrane Library, Issue 3, 2005 Chichester, UK: John Wiley & Sons, Ltd; 2005.
3. Derry S, Loke YK, Aronson K. Incomplete evidence: the inadequacy of databases in tracing published adverse drug reactions in clinical trials. BMC Medical Research Methodology 2001;1(7).
4. Golder S, McIntosh H, Duffy S, Glanville J. Developing efficient search strategies to identify reports of adverse effects in MEDLINE and EMBASE. Health Information and Libraries Journal 2006;23(1):3-12.

Acknowledgements

We would like to thank Jo Akers, Steve Duffy, Kate Light and Lisa Stirk from the Centre for Reviews and Dissemination (CRD) for second data extraction and Lindsey Myers for creating the Access database.