

# Cochrane update: identifying health-related research resources relevant to low- and middle-income countries

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## Introduction

Over recent years, we have observed increasing interest in systematic reviews for informing evidence-based decision making in low- and middle-income countries (LMICs). The global focus on the eight Millennium Development Goals<sup>1</sup> may have galvanized research activity, as the world's countries and leading development agencies seek to address the needs of the world's poorest. We are aware of around 150 systematic reviews that examine the effectiveness of social and economic interventions in LMICs.<sup>2</sup> They largely focus on health topics or topics that improve health outcomes. Reviews from The Cochrane Collaboration in this area encompass a range of topics such as interventions to improve access to health services, disease management, infant mortality and health promotion.

In this 21st anniversary year for The Cochrane Collaboration, one of the recent highlights of the Collaboration's Information Retrieval Methods Group (IRMG) has been information sharing and developing methods for identifying research for systematic reviews focused on health issues for LMICs. Equity is a particular theme of the Cochrane Public Health Group, whose members have also been involved in developing a guide on information sources for systematic reviews, and recommendations on their use. Here, we describe progress made by the IRMG and its collaborators in developing and sharing resources for identifying research literature relevant to LMICs. We hope this will be of use to researchers, information specialists, and others interested in global health and international development.

## Challenge of identifying and accessing information sources

Identifying research literature for systematic reviews generally poses a number of challenges and identifying relevant research literature for LMICs adds to these. The literature search often involves surveying both the international literature and research

across specific regions with the use of regional resources. One challenge is identifying which resources to use and how to use them. Other challenges include capturing the regional literature within the global bibliographic databases, and barriers to access in terms of availability and language.

## Creating the LMIC resources list

Members of the IRMG identified the need for developing tools and guidance in this area as a result of discussions at the XV Cochrane Colloquium in Brazil 2007. The Cochrane Opportunities Fund subsequently funded a collaborative project to (1) identify a key set of databases and other sources containing intervention studies from LMICs and (2) evaluate and describe these in relation to a number of factors including topic coverage, ease of searching and language coverage. The collaboration, led by the Effective Practice and Organization of Care (EPOC) group, involved several Cochrane Groups, the World Health Organization (WHO) Library and other volunteers who identified a set of databases, research registers, web sites and journals relevant to developing countries.

## What the LMIC resource list provides

Currently, more than 60 resources with access to primary and secondary studies are listed and described. These include global databases like MEDLINE and Embase, regional databases like LILACS and IndMed, and collections of journals like African Journals Online. Most, but not all, resources focus on health-

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specific topics. The list, which is periodically updated, is available at <http://epocoslo.cochrane.org/lmic-databases>.

As a key purpose of the resource list is to enable researchers find studies, practical information on how to use each resource is provided, ranging from useful tips for searching through to extracting the citations into reference management software. Where possible, information is provided on the language used, the number of journals that are indexed, database size, an indication of the content overlap with MEDLINE, cost to access, update frequency and an example search strategy. For some of the general databases (e.g. MEDLINE, Embase), example LMIC search filters are included (see *identifying developing country research within global databases*).

### Degree of overlap between databases covered and MEDLINE

Overall, there is relatively little overlap with MEDLINE, and sources are largely complementary to the MEDLINE literature and to one another. There are particular strengths in grey literature coverage, including the specialist documents from global organizations of particular relevance to developing countries such as the WHO, the Pan-American Health Organization and the World Bank.

There are also a range of specialist databases for individual countries and regions, the majority of which have some English language as well as local language search capacity. The various Index Medicus regional databases extend considerably the journals covered in MEDLINE. These can be accessed from WHO's Global Health Library via a federated search or via individual search interfaces. Information on the amount of overlap between each database and MEDLINE was estimated in January 2013 from information provided with the individual databases and a brief literature search for relevant studies via databases (MEDLINE, Embase) and search engines (Google, Google Scholar). Where definitive information was available from a research paper, this is referenced with the text associated with each resource.

### Access to resources

The majority of records within the resource list are freely accessible, and inevitably the list has a bias towards open-access resources. Less than 25% ( $n = 12$ ) are subscription-based or access is unclear, or may vary depending on the user. For example, Popline and the Cochrane Library offer enhanced access to full text for users who are based within LMICs. There are also initiatives to enhance access to subscription-based resources for users based in certain developing countries; for example, HINARI,<sup>3</sup> set up by the WHO and initiatives from INASP<sup>4</sup>

### Region and language coverage

The 62 resources comprises 22 global databases, 27 regional or country-specific databases and 13 regional or country-specific journal collections. Within the 49 databases, the majority are searchable in English, with just six of these only searchable in other languages (including Russian, Spanish, Turkish). Eighteen databases have the facility to search in both English and in other languages.

### Reference management

Managing research citations from databases where items are not exportable poses challenges for systematic reviewing. Of the 49 databases, at least 25 have options for exporting via email or downloading. For 16 of these, exporting into reference management software is possible via an RIS file or direct upload. With the remaining databases, the options are either unclear or one needs to copy and paste the results into an appropriate format.

### Users of the resource list

Google Analytics was used to monitor access to the resource list from its launch in January 2010 to June 2013. The distribution of the 2010 visits from different countries is shown in Fig. 1. Of the 99 visiting countries, the most frequent visits were from: the UK (23%), Switzerland (21.8%), USA (12.6%) and Norway (8.8%). Visitors from India and Bangladesh made up 3% (64 visits) and 1% (22 visits), respectively. A large number of other LMIC countries have assessed the resource list, including Afghanistan and Argentina, Peru and Papua New Guinea, Zambia and Zimbabwe. Although overall use is at a relatively low level of circa 50 visits per month, it is encouraging to note that the average time per user is almost 5 min, indicating its function as a reference point. Use is

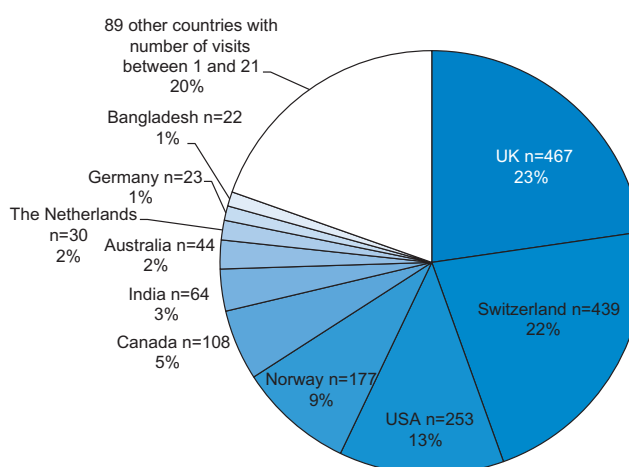


Fig. 1 Geographical distribution of visitors to the LMIC resource list ( $n = 2010$  visits).

particularly high in some countries such as Uruguay and Turkey with average durations of 40 and 50 min, respectively. Visitors from South Africa, Switzerland and Kenya spent an average time of around 7, 8 and 11 min respectively.

The recent update of the resource list includes several improvements to help usability. It has improved navigation and now provides an indication of the content overlap with MEDLINE. Feedback on the LMIC resources list and further suggestions for inclusion should be sent to Marit Johansen (email: maj@nokc.no)

## Identifying developing country research within global databases

In response to the challenge of identifying regional literature within large international health research databases, the Norwegian Satellite of the Cochrane EPOC Group developed a search filter for LMICs.<sup>5</sup> There are different versions for CENTRAL (*The Cochrane Library*), MEDLINE (Ovid), Embase (Ovid) and PubMed. The filters are available for adaptation with the caveat that they have not been tested for sensitivity and precision. In addition to this work, other groups have published relevant filters for African research<sup>6</sup> and emerging economies.<sup>7</sup>

## Limitations

The LMIC resource list is intended to be a guide rather than a definitive list, and for users interested in topics focused upon broad determinants of health, we recommend also consulting other types of resources and considering other research disciplines. For example, Stewart *et al.*<sup>9</sup> found in their review on the impact of microfinance on poor populations in sub-Saharan Africa only 7 out of 15 studies were identified from databases, and these were across several fields: health (*The Cochrane Library*, PsycINFO), social sciences (International Bibliography of Social Sciences, Sociological Abstracts) and economics (Econlit, IDEAS). Furthermore, relevant research on developing countries is likely to be found via websites, reference checking and key contacts.<sup>8</sup> These issues are challenges for individual review teams and go beyond the boundaries of the resource list.

## Conclusions

The LMIC resource list helps facilitate the selection of databases to identify research on health topics for inclusion in systematic reviews. It provides hints on utilizing individual resources, and raises awareness of open-access databases in this area. Potential developments include utilising 'crowd sourcing' software, which would enable users to comment on

and annotate the resource list. We look forward to being at the forefront of further initiatives in this area.

## Acknowledgements

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**New Cochrane protocols and reviews of interest to health promotion and public health stakeholders in June-July, 2013 of The Cochrane Library (\*denotes CPHG review/protocol).**

### REVIEWS

Interventions to encourage uptake of cancer screening for people with severe mental illness  
Vaccines for preventing enterotoxigenic *Escherichia coli* (ETEC) diarrhoea  
Increased consumption of fruit and vegetables for the primary prevention of cardiovascular diseases  
Media campaigns for the prevention of illicit drug use in young people  
Mass media interventions for reducing mental health-related stigma

### UPDATED REVIEWS

Internet-based interventions for smoking cessation  
Mass media interventions for smoking cessation in adults  
Screening for breast cancer with mammography  
Screening for lung cancer

### PROTOCOLS

\*Livestock development programmes for communities in low- and middle-income countries  
Supplementation with multimicronutrients (excluding vitamin A) for breastfeeding women for improving outcomes for the mother and baby  
Community-based rehabilitation for people with physical and mental disabilities in low- and middle-income countries  
Peer support interventions for parents and carers of children with complex needs  
Vaccines for preventing influenza in multiple sclerosis patients  
Community-based versus health facility-based management of acute malnutrition for reducing the prevalence of severe acute malnutrition in children 6 to 59 months of age in low- and middle-income countries  
Male versus female condoms for contraception  
Supplementary feeding for food insecure, vulnerable and malnourished populations – an overview of systematic reviews

## References

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- 8 Stansfield C, Dickson K. Locating evidence for developing countries: a case study of three health promotion reviews. *Poster presented at the 19th Cochrane Colloquium, Madrid*, 2011. 19–22 Oct.
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