Living Systematic Reviews

Methods Symposium
Seoul Colloquium 2016

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Trusted evidence.
Informed decisions.
Better health.
Declaration of interests

• HIV clinician and clinical researcher
  – Institution receives research and educational funding from public and commercial sources
  – No travel support, speakers fees or advisory boards
• Chair, Australian HIV Guideline Committee
• Founder and CEO, Covidence
• Cochrane
  – Lead, Evidence Systems, Cochrane
  – Co-lead, Project Transform
  – Senior Research Fellow, Cochrane Australia
something to offer. Next year the *Oxford Database of Perinatal Trials*\(^3\) will be published by Oxford University Press in electronic form. Besides registers of published\(^4\) and unpublished trials and trials in progress or planned, the data base will include a library of trial overviews which will be updated when new data become available.

**Oxford Database of Perinatal Trials,\nNational Perinatal Epidemiology Unit,\nRadcliffe Infirmary,\nOxford OX2 6HE**

\(\text{Iain Chalmers}\)
Seventy-Five Trials and Eleven Systematic Reviews a Day: How Will We Ever Keep Up?

Hilda Bastian¹, Paul Glasziou², Iain Chalmers³

75 Trials per day

55 Trials per day

Artefactual plateau due to processing

MEDLARS established

FDA regulations
Time from study to systematic review

Time from protocol to SR publication
Survival of systematic review accuracy

Break the trade-off
The Bridge from Evidence to Practice

Health research promises societal benefit by making better health possible. However, there has always been a gap between research findings (what is known) and health care practice (what is done), described as the “evidence-practice” or “know-do” gap [1]. The reasons for this gap are complex [2], but it is clear that synthesising the complex, incomplete, and at times conflicting findings of biomedical research into forms that can readily inform health decision making is an essential component of the bridge from “knowing” to “doing.”

Systematic reviews (SRs) and meta-analyses have provided incalculable benefit for human health by contributing to the evidence base. However, the evidence base is not a static body of knowledge. Evidence is generated continuously, and the challenge is to ensure systematic reviews keep their evidence base up to date and accessible at all times. This is especially true for SRs with high publication efficiency, such as those produced by the Cochrane Collaboration [3].

Summary

- The current difficulties in keeping systematic reviews up to date leads to considerable inaccuracy, hampering the translation of knowledge into action.
- Incremental advances in conventional review updating are unlikely to lead to substantial improvements in review currency. A new approach is needed.
- We propose living systematic review as a contribution to evidence synthesis that combines currency with rigour to enhance the accuracy and utility of health evidence.
- Living systematic reviews are high quality, up-to-date online summaries of health research, updated as new research becomes available, and enabled by improved production efficiency and adherence to the norms of scholarly communication.
- Together with innovations in primary research reporting and the creation and use of evidence in health systems, living systematic review contributes to an emerging evidence ecosystem.
KNOWLEDGE COMMUNITY

Existing TBI evidence

- Community contributors

Living Systematic Review

- Guideline experts

Clinical practice guidelines

- Decision support experts

Clinical decision support systems

Concordance monitoring systems

Clinical practice

New TBI evidence
Why should Cochrane do LSRs?

- Consistent with the original vision
- Cochrane has a strong commitment, infrastructure and practice of updating
- Cochrane has the methodological capacity to pilot, evaluate and refine new SR methods
- Cochrane is investing in the ‘enablers’ that make LSRs more feasible
What is a Living Systematic Review?

“Systematic reviews which are continuously updated, incorporating relevant new information as it becomes available”
What are LSR methods?

- Continuously updated
- Active, ongoing evidence surveillance
- Updates provided whenever new evidence, data or information is identified
- Explicit, transparent, predefined decisions about:
  - How frequently new evidence is sought and screened;
  - When and how new evidence is incorporated into the review;
  - What thresholds cause the review to cease being ‘living’
- No difference in core methods
- Can be applied to any review type
How do LSRs differ from other reviews?

<table>
<thead>
<tr>
<th>Feature</th>
<th>LSR</th>
<th>Frequently updated SR</th>
<th>Rapid Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explicit methods for ‘when’ and ‘how’ of updating</td>
<td>✔</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Continuous evidence surveillance</td>
<td>✔</td>
<td>?</td>
<td>X</td>
</tr>
<tr>
<td>New evidence rapidly incorporated</td>
<td>✔</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Standard SR methods</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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</tbody>
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When should I do an update?

Start with:

Does published review still address a current question? Has review had good access or use? Review used valid methods and was well conducted?

- Yes
  - Are there any new relevant methods? Are there any new studies, or new information?
    - No
      - No update planned
    - Yes
      - Will adoption of new methods change findings or credibility? Will new studies/information/data change findings or credibility?
        - No
          - Up to date
        - Yes or maybe
          - Update pending

- No
  - No update planned

Rationale for update status:

- Intervention(s) not in (general) use or been superseded
- Research superseded
- Research area no longer active
- Low impact of published version (eg, via article level metrics)
- Other (provide reason)

- No new studies identified with search
- All studies incorporated from most recent search
- Potentially relevant studies ongoing but not complete
- Other (provide reason)

- Certainty (quality) of evidence high in published review
- New information identified but unlikely to change review findings
- Other (provide reason)

- Authors currently updating
- Studies awaiting assessment
- New contributors needed
- Other (provide reason)
When should I do an LSR?

• The review question is a priority for decision making

• There is likely to be a high volume of emerging research

• There is capacity to maintain ongoing workflows
How do I do an LSR?

1. Search
2. Production
3. Technology enablers
4. Statistics
5. Publication
6. Guidelines and knowledge translation
Living Systematic Review Network

1. Search
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5. Publication
6. Guidelines and knowledge translation
Cochrane Living Systematic Reviews

Interim guidance for pilots (Draft version 0.2)
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