Cochrane Rapid Review (RR) Methods: A Look at Interim Recommendations (Part 2)

April 23, 2020
Chantelle Garritty,
Co-Convenor, Cochrane RRMG
Cochrane Rapid Review Methods Group (RRMG) Co-Convenors

Gerald Gartlehner, MD, MPH
Barbara Nussbaumer-Streit, BSc, MSc
*Lisa Affengruber (PhD student)

Valerie King, MD, MPH

Chantelle Garrity, MSc, PhD (c)
Adrienne Stevens, MSc, PhD
*Candyce Hamel (PhD student)

Chris Kamel, MSc
Aims of this section

- Provide some general context for Cochrane Rapid Reviews (RRs)
- Give a brief overview of how Cochrane RR methods were developed
- Present a high-level overview of the interim methods recommendations including use for Cochrane RRs related to COVID-19
Poll

Have you previously been involved in conducting a rapid review (RR)?

If yes, indicate what your main role was

- Yes, as an author/co-author
- Yes, as a methodologist, epidemiologist or biostatistician
- Yes, as an information specialist
- Yes, other
- No, I’ve not conducted a rapid review before
Rapid reviews (RRs) have emerged as an efficient tool to get evidence to decision-makers more quickly and are now considered part of the knowledge syntheses family.¹

Strong signals of increased use among researchers, policymakers, and other stakeholders in daily decision-making.²-⁵

In 2017, 148 organizations identified as producers of RRs; underestimate back then and likely much higher now.

RRs have been undertaken by respected national and international health agencies, for example, the World Health Organization (WHO) in urgent and emergent public health settings to inform guideline recommendations, ⁶-⁷ and the US Preventative Services Task Force (USPSTF).⁸

We know RRs are having an impact – many examples to draw upon.
Cochrane’s Support for RRss

- In 2015, Cochrane officially approved the establishment of a methods group specific to RRss (Cochrane RRMG)
- RRMG has become a valued information-sharing network for people with interest in RRss (with over 300 members, >78 countries)

RRMG Remit:

- Serve as a discussion forum
- Provide consultation to various Cochrane entities
- Deliver training through Cochrane events and elsewhere
- Involved in RR methods research; importantly, leading development of RR methods guidance
- Website: https://methods.cochrane.org/rapidreviews/welcome
Context for Cochrane RRs

- As part of Cochrane’s Content Strategy to 2020, the RRMG started to explore the relevance and appropriateness of RRs as a formal Cochrane product.
- As a first step, we needed to identify and assess which methods, if any, can be abbreviated to expedite the conduct of a RR; and when this might be acceptable to Cochrane.
- Over the past 18-months, we’ve conducted various activities as part of Stage 1 of a strategic workplan to inform the feasibility of Cochrane RRs.
Cochrane RRs and COVID-19

• Completion of our stage 1 activities coincided with the unfolding of the COVID-19 pandemic in late February/early March (2020).

• Cochrane’s comprehensive response to COVID-19 became the catalyst to releasing methods guidance (although provisional) to facilitate the production of RRs to address pressing questions related to the pandemic.
How we developed Cochrane RR methods

We undertook a suite of methodological research to inform the definition of and methods involved in Cochrane Rapid Reviews (RRs)

1) Scoping Review: RR definitions
   Identified common key constructs that resulted in a proposed broad definition (based on the most common themes from 216 RRs & 90 RR methods papers)

2) Scoping Review: Empirical studies evaluating RR methods
   Identified 90 studies that described or evaluated RR methods; 14 formally assessed shortcuts. Results informed Cochrane RR methods

3) Methods Study: Limiting to English only studies
   Informed an important methods gap in that exclusion of non-English studies for clinical interventions reviews may be viable option for most RRs

4) Methods Study: Single reviewer screening RCT (Cochrane Crowd)
   Informed an important methods gap in that single screening (that missed 13% of relevant studies) may be a viable approach for some RRs

- Aim to improve the utility and robustness of Cochrane RR results as a useful evidence synthesis tool for timely decision-making in healthcare.
Cochrane RR Methods Options Survey

- Survey was developed with input from a team of methodologists with experience in conducting both SRs and RRs, including an expert advisory committee.
- Specifically, we asked respondents to rank order certain options and to solicit their preferences for certain abbreviated approaches.
- Covered two main parts: i) a question set to determine what types of RRs are most suitable for Cochrane and for what purposes; and ii) a question set to determine which major streamlined methods are viewed as most acceptable for producing Cochrane RRs.
- Where possible in the survey, we highlighted identified research supporting or cautioning the use of a particular shortcut or approach.
**Survey**

- Sent to a purposive sample of 119 individuals representing 20 specific Cochrane entities
- Duration - 6 weeks (September 14 and November 1, 2019)
- 63 Response (53%); 53 Completed (46%)
- 76% extremely/very/somewhat familiar with RR
- For more information on the survey, contact the RRMG.

<table>
<thead>
<tr>
<th>Entities</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cochrane EMD</td>
<td>11%</td>
</tr>
<tr>
<td>Cochrane ITS</td>
<td>4%</td>
</tr>
<tr>
<td>Cochrane Response</td>
<td>2%</td>
</tr>
<tr>
<td>Coordinating Editor</td>
<td>13%</td>
</tr>
<tr>
<td>Council member</td>
<td>2%</td>
</tr>
<tr>
<td>Editorial Board member</td>
<td>8%</td>
</tr>
<tr>
<td>Field Executive member</td>
<td>6%</td>
</tr>
<tr>
<td>Geographical Centre Executive member</td>
<td>6%</td>
</tr>
<tr>
<td>Handbook Editor</td>
<td>8%</td>
</tr>
<tr>
<td>Information Retrieval Methods Group convenor</td>
<td>4%</td>
</tr>
<tr>
<td>Information Specialist Executive member</td>
<td>0%</td>
</tr>
<tr>
<td>Managing Editors Executive member</td>
<td>4%</td>
</tr>
<tr>
<td>MECIR Author</td>
<td>4%</td>
</tr>
<tr>
<td>Methods Executive member</td>
<td>4%</td>
</tr>
<tr>
<td>Network Senior Editor</td>
<td>6%</td>
</tr>
<tr>
<td>Network Associate Editor</td>
<td>2%</td>
</tr>
<tr>
<td>Network Support Fellow</td>
<td>8%</td>
</tr>
<tr>
<td>Rapid Reviews Advisory Committee member</td>
<td>11%</td>
</tr>
<tr>
<td>Rapid Reviews Methods Group convenor</td>
<td>8%</td>
</tr>
<tr>
<td>Scientific Committee member</td>
<td>15%</td>
</tr>
</tbody>
</table>

*Not mutually exclusive categories*
Deriving Interim Recommendations

• As a preliminary approach, we recommended adopting items for which there was high or moderate level of agreement on the survey.

  **HIGH-LEVEL** (Items endorsed by ≥70% of respondents)
  **MODERATE-LEVEL** (Items endorsed by ≥50-69% of respondents)
  **LOW-LEVEL** (Items endorsed by <50% of respondents)

• Items ranking highest were also put forth for consideration

• In addition to the survey rankings, the proposed guidance is based on discussion and consensus among the RRMG convenors

• Guidance/recommendations intended to promote a flexible, and iterative RR process that if need be, can be adapted and tailored to the review question
Definition of a Cochrane Rapid Review

We’ve recommended Cochrane adopt the following definition: “A rapid review is a form of knowledge synthesis that accelerates the process of conducting a traditional systematic review through streamlining or omitting specific methods to produce evidence for stakeholders in a resource-efficient manner.”

Further, based on endorsed survey items - Cochrane RRIs should be driven primarily by requests for timely evidence for decision-making purposes including to address urgent and emergent health issues and questions deemed to be of high priority.
## Interim Recommendations - Cochrane RR Methods

### Setting the Research Question – Topic Refinement

- Involve key stakeholders (e.g., review users such as consumers, health professionals, policymakers, decision-makers) to set and refine the review question, eligibility criteria, and the outcomes of interest.
  - Consult with stakeholders to ensure the research question is fit for purpose, and regarding any ad-hoc changes that may occur as the review progresses.
- Develop a protocol that includes review questions, PICOS, and inclusion and exclusion criteria.
  - COVID-19 RRs, see the Standard Workflow document and Protocol Template to maximize quality and efficiency.

### Notes

- Evidence suggests knowledge brokering of proposals significantly improved perceived clarity of information provided to policymakers and also improves confidence of reviewers that they can meet the policymakers’ needs.\(^\text{10}\)
Setting the Eligibility Criteria

Together with key stakeholders:
- Clearly define the population, intervention, and comparator
- Limit the number of interventions and comparators
- Limit the number of outcomes, with a focus on those most important for decision-making
- Consider date restrictions with a clinical or methodological justification
- Limit the publication language to English; add other languages only if justified
  - COVID-19 RRs: restricting to English-only is not recommended if it is expected that relevant studies are published in languages other than English (e.g., emerging COVID-19 studies from China and other countries).
- Place emphasis on higher quality study designs (e.g. systematic reviews) to streamline available evidence.

Notes

- Limits are important to ensure Cochrane RRs are manageable and timely.
- Although setting a date restriction is a pragmatic shortcut, this needs to be carefully considered for each topic.\(^\text{13}\)
- Restriction to English-only studies may be a practical when conducting RRs for conventional interventions\(^\text{11}\) but as you can see for COVID-RRs there is justification to search other languages.
Searching

• Involve an Information Specialist.
• Limit main database searches to Cochrane CENTRAL, MEDLINE (e.g., via PubMed) and Embase (if available access).
• Recommend searching specialized databases (e.g., PsycInfo, CINAHL) for certain topics but should be restricted to 1-2 additional sources, or omitted if time and resources are limited.

  • COVID-19 RRs resources to search:
    • Cochrane’s COVID study register: https://covid-19.cochrane.org/;
    • LITCOVID: US National Library of Medicine - central access to >6000 (and growing) relevant articles in PubMed, and;
    • WHO-COVID19 Database – contains results of daily literature searches
• Consider peer review [i.e., Peer Review of Electronic Search Strategies (PRESS)] of at least one search strategy (e.g., MEDLINE).

Notes

• Recommending peer-reviewing a search strategy (PRESS) is encouraged based on recent evidence.¹⁴
• Overall, the selection of databases to search will depend on the topic under review and access to these sources.
<table>
<thead>
<tr>
<th>Searching (continued)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Limit grey literature and supplemental searching to trials registries and bibliographies of other reviews or included studies.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>• We suggest doing the grey literature searching AFTER screening of the abstracts and full texts.</td>
</tr>
<tr>
<td>• Screening reference lists can detect studies that were missed when searching electronic databases or eligible studies that were excluded in error during screening.</td>
</tr>
</tbody>
</table>
### Study Selection (Title/Abstract Screening)

- Using a standardized title and abstract form, conduct a pilot exercise using the same 30-50 abstracts for the entire screening team to calibrate and test the review form.
- Then, use two reviewers for dual screen of at least 20% (ideally more) of abstracts, with conflict resolution.
- Use one reviewer to screen the remaining abstracts; with a second review to screen all excluded abstracts, with conflict resolution.

### Notes

- We do not recommend using only one reviewer to screen all titles/abstracts (least acceptable according to survey ranking).
- Software should be used to make screening more efficient.
- Artificial intelligence/automation may facilitate this step in the very near future.
# Study Selection (Full Text)

- Using a standardized full text form, conduct a pilot exercise using the same 5-10 full-text articles for the entire screening team to calibrate and test the review form.
- Then, use one reviewer to screen all included full text articles, with a second reviewer to screen all excluded full text articles.

# Notes

- A pilot exercise is extremely important for abstract/full text screening to ensure there is no misunderstanding the inclusion/exclusion criteria.
- To reiterate, review teams should also use software to make screening, tracking, and documentation more efficient whenever possible.
### Data Extraction

- Use a single reviewer to extract data using a piloted form.
- Use a second reviewer to verify the data is correct and complete (including study characteristics and outcomes data).
- Limit data extraction to a minimal set of required data items to streamline how much information is extracted about the study (i.e., study characteristics, the interventions, as well as outcomes details).

### Notes

- Using skilled extractors will be key to minimizing errors rates for Cochrane RRs.
Risk of Bias Assessment

- Use a valid risk of bias tool, if available for the included study designs.
- Use a single reviewer to rate risk of bias, with full verification of all judgements (and support statements) by a second reviewer.
- Limit risk of bias ratings to the most important outcomes as determined by stakeholders at the outset.

Synthesis

- Evidence should be synthesized narratively.
- Consider a meta-analysis only if appropriate (i.e., studies are similar enough to pool).
  - Standards for conducting a meta-analysis for a systematic review equally apply to a RR. Meta-analysis will depend on the nature of the data and information provided in the individual studies identified.
- Use a single reviewer to grade the certainty of evidence, with verification of all judgements (and footnoted rationales) by a second reviewer.
Other Considerations for Cochrane RRs

- RRs should be preceded by a protocol submitted to and approved by Cochrane – see available resources for COVID-19 RRs (e.g., Workflow (topic refinement), Protocol template) [https://covidrapidreviews.cochrane.org/resources](https://covidrapidreviews.cochrane.org/resources)

- Protocol should be:
  - Registered (e.g., PROSPERO or Open Science Framework)
    - For Cochrane COVID-19 RRs, authors are being encouraged to register the protocol, and the protocol must be complete before inclusion/exclusion decisions are made, and submitted to the Cochrane editorial team before the full review is submitted.
  - Incorporate to use of online SR software (e.g., Covidence, DistillerSR, EPPI-Reviewer) to streamline the stages of the process.

Importantly, methods selected for each Cochrane RR will need to take into account the RR timeline (1 week up to 6 months, starting once protocol details are approved) and available resources using a tailored approach.
Helpful Hints for Cochrane COVID-19 RRs

- Consider languages other than English (e.g., Chinese, Korean, Italian, Spanish). Otherwise, early studies may be missed.
- Teams need the ability to do translations quickly. Have a plan. You may need to call on Cochrane’s international community for assistance.
- RR author teams should be used to working together and have shared access to and training in the software used – having teams that are ‘ready to go’ is most efficient.
- Teams need to be able to work in parallel across review tasks, and that the project lead is always 1-2 steps ahead of team – online SR software will allow for this.
- Important for the team to be able to focus on the RR and put all other tasks aside when working to tight deadlines on the COVID-19 RRs.
In Summary

- Cochrane RR recommendations are **interim** guidance – still a work in progress.
- Although a formal recommendations process was not followed, a strength of this guidance was that it was informed by a suite of studies, through surveying a wider group of researchers from within Cochrane, and discussions with RR methodology experts.
- Importantly, the recommendations are based on what is currently known about RR methods, and is being ‘test piloted’ in real time for COVID-19 RRs.
- We encourage continued use of this guidance - though we recognize that further enhancements and fine-tuning are needed.
- If you have used our guidance in urgent, real time RR scenarios or will be using it, we welcome feedback.
We welcome your feedback.

Please also reach out to us if you require more information.

Contact us at: rapidreviews@cochrane.at

Interim Guidance:

https://methods.cochrane.org/rapidreviews/cochrane-rr-methods
References


