Developing PRISMA-RR, a reporting guideline for rapid reviews of primary studies
(Protocol)

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INTRODUCTION

Systematic reviews are known to be the best evidence upon which to make healthcare decisions, but can take years to complete (1). Rapid reviews have emerged as accelerated and/or abbreviated versions of systematic reviews with certain concessions made in the systematic review process to accommodate decision-making situations that require an expedited compilation of the evidence (2). Rapid reviews are usually conducted for a specific requestor and are typically understood to take 6 months or less to complete. Rapid reviews may differ from systematic reviews in a number of ways, such as the number of abbreviated methods or shortcuts employed and the breadth or scope of the question(s) posed (2–4). Some rapid reviews involve accelerated data mining processes and targeted screening of studies.

Given methodological modifications that rapid reviews can possess, transparent reporting of their methods and results for end-users is essential to facilitate the translation of findings into healthcare practice or policy. However, some empirical evidence alludes to the poor reporting of rapid review methodologies (3,5), which is consistent with what is known in the broader health research literature (6–12). To address this issue, reporting guidelines have emerged in the literature to help improve the completeness of reporting.

No reporting guideline designed specifically for rapid reviews has been developed yet (13). The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) was published in 2009 for systematic reviews and meta-analyses, and has been used for reporting of rapid reviews (14–16). Similarly, the PRISMA for Abstracts reporting guideline was published in 2013 and can guide the reporting of abstracts for rapid reviews (17). The intent is to use both the PRISMA and PRISMA for Abstracts checklists as the foundational content upon which to apply relevant modifications and additional items to tailor reporting for rapid reviews. Examples for consideration might be the timeframe taken to conduct the rapid review and whether consultation with end-users took place during conduct.

Rapid review use is increasing (2–4,18,19), making it opportune to develop needed reporting guidance. Precedence exists for the modification of reporting guidelines for particular circumstances, such as extensions to the PRISMA reporting guideline for equity-focussed reviews (20), individual patient data systematic reviews (21), and network meta-analyses (22). We feel that developing a reporting guideline for rapid reviews, in the form of an extension to PRISMA and PRISMA for Abstracts, is needed to contribute to developing standards for rapid reviews, an evolving methodology.

We will follow guidance developed by Moher and colleagues for reporting guideline developers (23). This guidance requires that guideline developers (phase 1) identify relevant information on the quality or completeness of reporting of rapid reviews (phase 2), conduct Delphi surveys to develop a preliminary set of checklist items to consider for developing a reporting guideline (phase 3), and then finalize the reporting guideline checklist via a consensus meeting (phase 4). This protocol outlines the methodology for all four phases, but with specific detail on the development and implementation of the Delphi surveys.
This reporting guideline will address rapid reviews that include primary studies as the unit of inclusion, which we have determined is about 60% of rapid reviews completed between 2013 and 2016 (A Stevens, personal communication). Reporting guidance for rapid reviews that include secondary evidence will be developed as a future objective of the collaborator team.

METHODS

This project comprises four phases.

Phase 1 – Establish PRISMA-RR Development Group

The PRISMA-RR group will comprise:

i. Executive Committee (n=4), who will be responsible for the leadership and coordination of all the processes involved in the development and dissemination of the reporting guideline. The executive committee consists of the lead author of the PRISMA reporting guideline (DM) and three researchers with 5-10 years experience of conducting rapid reviews (AS, CG, MH), of which two are Co-Convenors of the Cochrane Rapid Reviews Methods Group (AS, CG).

ii. Other members of PRISMA-RR Development Group (n<30), who will take part in the Delphi surveys and consensus meeting to assist the executive committee in establishing the final checklist. The membership of this group will cross-cut various perspectives: methodologists, journal editors, rapid review producers, rapid review commissioners, and rapid review end-users (clinicians, policy, consumers, guideline producers, knowledge translation experts, language translation experts). Membership for this group will be finalized following phase 2.

We will also solicit participation of globally-situated individuals in the Delphi surveys.

Phase 2 – Pre-Delphi survey preparation: Undertake empirical research on completeness of reporting of rapid reviews and item generation for the potential expansion of PRISMA and PRISMA for Abstracts

Undertaking this phase serves three purposes: (1) to understand the completeness of reporting of recently produced rapid reviews, (2) to identify PRISMA and PRISMA for Abstracts items that may need to be modified for rapid reviews and (3) to identify unique reporting items for consideration for PRISMA-RR. The data collection for this phase is completed.

Empirical research on completeness of reporting of rapid reviews & identifying unique reporting items

This primary methodological study will evaluate the completeness of reporting of rapid reviews and identify additional reporting items to be considered for PRISMA-RR. The details for this project are provided elsewhere (24). Briefly, searches of bibliographic databases (e.g., MEDLINE, EMBASE, ERIC, Cochrane Library) and grey literature sources (e.g., 148 organizations known to produce rapid reviews) were used to locate relevant rapid reviews. Rapid reviews were defined as reports where the intent is to
summarize evidence for use in any form of decision-making or information support, directly or indirectly related to health care, using abbreviated and/or accelerated systematic review methods to meet an expedited timeline.

Information extracted from each rapid review includes general study and descriptive characteristics (e.g., citation, publication type, health topics, journal name [if published]). The completeness of reporting was evaluated using the PRISMA and PRISMA for Abstracts checklists, for which the reporting of each will be analyzed as a comparison between journal-published and non-journal-published rapid reviews; this information will inform the PRISMA-RR guidance instructions. Information collected on additional reporting items will be used to consider potential new items for the PRISMA checklist.

The original intent was to include rapid reviews published or completed in 2013 through 2016 to align with more recently published methodological research in this area. However, initial characterization of the journal-published rapid reviews led to observed variation in the frequency of publication across years (e.g., 13 in 2013, 63 in 2016) and in composition (40% of rapid reviews include secondary evidence, such as systematic reviews), the latter of which would challenge the face validity of an estimated one-third of PRISMA items. With the notion that the production of rapid reviews may be quickly evolving, the focus of this project has been changed to examine two cross-sections in time, 2014 and 2016, and restricting the sample to rapid reviews including only primary studies.

*Identify relevant methodological guidance*

One member of the executive team (AS) consulted the list of additional items gleaned from the empirical study (above) and available rapid review methodological guidance or methodological papers to identify unique reporting items. Since three reviews of rapid review methodology have been published (4,25,26), additional papers encountered in the search results from the empirical study, known recently developed methods resources, and other notable papers were the guidance papers that were consulted (Appendix 1).

*Pre-selection of potentially essential items*

The list of additional items for PRISMA-RR consideration were collated and considered by the executive team. Pre-selection involved dividing items into those to further consider, those that can be provided as optional guidance (to be outlined in an Explanation and Elaboration accompanying document), or those not to consider for potential inclusion. Delphi participants will have the opportunity to view and provide feedback all lists in round 1.

*Phase 3 – Delphi surveys to solicit feedback on checklist items for PRISMA-RR*

A modified Delphi exercise will be conducted, using existing guidance and recommendations (27,28). A maximum of three rounds of questionnaires will be distributed electronically. To avoid survey fatigue and in consideration of the potential need for discussion of remaining items not achieving consensus for inclusion or exclusion, a virtual meeting will be held to finalize the checklist.
Identify and recruit Delphi participants. The executive team will assemble a group of multidisciplinary stakeholders with international representation to participate in the development of PRISMA-RR: systematic review methodologists (including information science and statistical expertise), producers of rapid reviews, commissioners of rapid reviews, end-users of rapid reviews (clinical, policy-making, guideline development expertise, as well as patients), knowledge translation specialists, language translation specialists, and journal editors interested in publishing reviews. A subset of those participants will be invited to join the PRISMA-RR Development Group and participate in the consensus meeting.

A mix of purposive and snowball sampling techniques will be used to derive a list of potential Delphi survey participants. Systematic review methodologists will be contacted from within our professional networks, such as Cochrane, the Campbell Collaboration, Joanna Briggs Institute, Guidelines International Network, the U.S. Agency for Healthcare Research & Quality’s Evidence-based Practice Centre program, the Centre for Reviews and Dissemination, Canadian Agency for Drugs and Technologies in Health, and The Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre). For rapid review producers, commissioners, and end-users, we will draw initially from an internal list of relevant organizations, solicit participation through the Cochrane Rapid Reviews Methods group, and consult corresponding authors of rapid review publications in the literature. To seek the participation of patients/citizens, we will consult the Cochrane Consumer and Canadian Institutes for Health Research (CIHR) Strategy for Patient-Oriented Research (SPOR) Networks. For journals, we will target known journals publishing rapid reviews (identified through the empirical study). Knowledge translation expertise will be sought through the Centre for Implementation Research at the Ottawa Hospital Research Institute.

Determining appropriate expertise. In keeping with suggested guidance (27), the invitation to participate will include specification of characteristics for appropriately knowledgeable participants. At the end of the first survey, participants will be asked to self-identify according to expertise category and extent of experience with systematic and rapid reviews.

Delphi questionnaires, distribution, and timeline. We plan to use online software (e.g., SurveyMonkey®) to house the surveys and responses. Participants will be invited by email. Those responding and providing implied consent will be included in the first round. Each survey round will be open for no longer than three weeks. An email reminder will be sent seven days before the close of the survey round.

Round 1 - Participants will be sent a questionnaire outlining suggested modifications to the existing PRISMA 2009 and PRISMA for Abstracts checklist items, additional items to consider as extension items, a list of items to potentially exclude, and opportunity to nominate additional items. Participants will be asked to rank those items on a 5-point Likert scale (1-2=not essential to report, 3=potentially essential to report, 4-5=essential to report). Participants will be provided with the opportunity to comment on any item, which may include suggested changes to wording or content; for example, a participant may agree to the item but request modified wording in relation to content or scope.
**Consensus criterion.** At least 66% of Delphi respondents scoring within one of the three categories would meet the consensus criterion. This threshold is consistent with that used for other guidelines, such as STARD for abstracts and PRISMA-DTA (29,30). **Table 1** outlines the decision criteria for handling of rating information for rounds 1 and 2. Items not meeting the consensus criterion by the end of round 3 or for which ≥66% of participants score as ‘potentially essential’ (rating of 3) will be put forward for discussion at the consensus meeting.

**Table 1. Decision criteria for inclusion, exclusion, and further consideration of potential items.**

<table>
<thead>
<tr>
<th>Scenario (rounds 1 and 2)</th>
<th>Handling of information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item scored 4-5 (essential) by ≥66% of participants with no suggested changes to wording or content</td>
<td>Consensus achieved for inclusion in PRISMA-RR. Further consideration in a subsequent Delphi round not needed.</td>
</tr>
<tr>
<td>Item scored 4-5 (essential) by ≥66% of participants with minor suggested changes to wording</td>
<td>Consensus achieved for inclusion. Further consideration in a subsequent Delphi round not needed. Minor modifications in wording to be addressed following consensus meeting.</td>
</tr>
<tr>
<td>Item scored 4-5 (essential) by ≥66% of participants with suggested changes to content (major changes in wording)</td>
<td>Include in following Delphi round.</td>
</tr>
<tr>
<td>Item scored 3 (potentially essential) by ≥66% of participants (regardless of wording or content changes)</td>
<td>Include in following Delphi round.</td>
</tr>
<tr>
<td>Item scored 1-2 (not essential) by ≥66% of participants</td>
<td>Do not include in PRISMA-RR.</td>
</tr>
<tr>
<td>Item not achieving consensus criterion.</td>
<td>Include in following Delphi round.</td>
</tr>
<tr>
<td>Participant-nominated items in rounds 1 and 2.</td>
<td>Include in subsequent round. Follow decision criteria scenarios above.</td>
</tr>
</tbody>
</table>

**Rounds 2 and 3** – All PRISMA-RR Development Group members will be included in rounds 2 and 3 and any additional Delphi participants who complete a survey and express interest in a subsequent round. In subsequent rounds, the aggregate quantitative results of the previous round will be shared (including indication of decision for inclusion, exclusion, or further consideration), along with open-ended comments. All information will be presented in aggregate for anonymity, and participants will not receive their own individual response data from the previous round. Participants will rate relevant items (**Table 1**), with opportunity to provide comment.

**Analysis.** Demographic and item scores will be analyzed, as appropriate (e.g., frequency and proportions across the rating categories) accompanied by a narrative summary of findings, comments, and suggestions.

**Ethics.** Ethics approval is being sought through the Ottawa Health Science Network Research Ethics Board.
Phase 4 – PRISMA-RR Consensus Meeting

A series of web-based meetings will be scheduled to host PRISMA-RR Development Group members virtually via meeting conferencing software. No more than 30 people will attend this meeting to ensure spontaneity and sufficient interaction among participants. For participants who are unable to attend, their feedback will be sought in advance of the meetings to present at the meeting. Discussions will be recorded. During the meetings, we will present the results of the empirical evidence study and Delphi exercise, the list of checklist items having reached consensus, structured discussion and voting on items requiring consensus, and avenues for dissemination of the final checklist. If time does not permit to settle on the wording of checklist items during the consensus meetings, remaining refinements will take place by email.

The nominal group technique will be used to structure group interaction and gain consensus among meeting participants (31,32). First, participants will have the opportunity to privately consider ideas in response to questions posed. The meeting facilitator will then conduct a round robin process to concisely record one idea from each participant and then cycle back through participants, as needed, until all ideas are collected. Those contributions will then be discussed for clarification and importance, which may include grouping of ideas with agreement from participants. Finally, individuals privately rank or vote on ideas presented; re-ranking may also occur. For final decision, the option that receives 66% or more of the group vote will meet the consensus criterion for inclusion. Any items not meeting the consensus criterion will be discarded as minimum essential. We will ensure that any remaining uncertainties are given adequate consideration through discussion to complete the consensus exercise; for example, an item may not be included in the checklist as minimum essential but may be included in the explanation and elaboration as optional for reporting.

Dissemination. The reporting guideline will be submitted for publication in an open-access journal, and outreach will be made to relevant journals and organizations who may be interested in implementing the guideline.

DISCUSSION

The objective of this project is to create an evidence-based, consensus-derived minimum guidance for authors writing reports of rapid reviews of primary studies. This reporting guideline will be disseminated by journal publication in an open-access journal and inclusion in the EQUATOR Network’s Library of Reporting Guidelines. We will also contact relevant journals to encourage implementation in their editorial processes. We hope to be able to publish this reporting guideline in languages other than English.
REFERENCES


Appendix 1. Sources consulted for potential checklist items


Young I, Waddell L, Sanchez J, Wilhelm B, McEwen SA, Rajic A. The application of knowledge synthesis methods in agri-food public health: recent advancements, challenges and opportunities.
