Appendix A. Formal Evaluation Studies that Informed the Cochrane Rapid Review Survey

*Studies below were identified from: Hamel C, Michaud A, Thuku M, Affengruber L, Skidmore B, Nussbaumer-Streit B, et al. Few evaluative studies exist examining rapid review methodology across stages of conduct: a systematic scoping review. Journal of Clinical Epidemiology. 2020 Jun 26. PMID: 32599023. Available from: DOI: 10.1016/j.jclinepi.2020.06.027.

Stage of Review Conduct	Brief Study Description	Findings at a Glance
Engaging Stakeholders (Moore 2017) [1]	Study assessed the involvement of stakeholders in setting the review question/protocol	Knowledge brokering of proposals significantly improved the perceived clarity of information provided to policymakers including clarity as to why the review was commissioned; clarity of the review questions; clarity of the scope; clarity of the method; and clarity of the report conclusions. Further, it improved the confidence of reviewers that they can meet the policymakers' needs.
Search limits by a set number of years (Marshall 2019) [2]	Meta-epidemiological study simulated the effects of RR methods on 2,512 Cochrane Reviews (with a meta-analysis, and a binary variable primary outcome using a relative effect measure) to assess the impact of restricting search dates	Findings suggest limiting the search to 5 years had greatest impact on meta-analyses (MA's). For example, 82% of results led to a ≥5% change and limiting the search to 5 years lost all studies in 48.2% of the MA's). Limiting search to 20 years led to a ≥5% change in approximately 30% of the MA's examined, and a loss of all studies in 10.5% of MA's. The majority of effect size changes were small, but moderate and large changes were relatively common.
Search limitations by number of databases (Marshall 2019) [2]	Meta-epidemiological study simulated the effects of RR methods on 2,512 Cochrane Reviews (with a meta-analysis, and a binary variable primary outcome using a relative effect measure)	Findings suggests that limiting the search strategy to PubMed-only resulted in 19% of results with a ≥5% change in the meta-analyses (MA's). Further, using PubMed-only lost all studies in 3.7% of MA's and resulted in no important change in 81% of MA's. Authors suggest that PubMed-only searching might be considered in situations where a 10% risk of ≥20% change in odds ratio for the primary outcome is tolerable. The majority of effect size changes were small but moderate and large changes were relatively common.

Stage of Review Conduct	Brief Study Description	Findings at a Glance
Search limitations by number of databases (Nussbaumer-Streit 2018) [3]	Based on a sample of 60 Cochrane reviews (which included 1,335 primary studies), the noninferiority of **abbreviated searches** allowing for a maximum of 10% changed conclusion was assessed.	When the reduction of the certainty of a conclusion was of concern, all abbreviated searches were inferior. Searching MEDLINE-only led to changed conclusions in 20% of the cases. However, Embase-only rendered the greatest proportion of changed conclusions (27%, 95% confidence interval [CI]: 16%–40%); combining MEDLINE, Embase, CENTRAL with searches of references lists the lowest (8%, 95% CI 3%–18%). When falsely reaching an opposite conclusion was of concern, combining one database with another or with searches of reference lists was noninferior to comprehensive searches (2%, 95% CI: 0%–9%). This study concluded that searches should be done in at least two databases or in one database plus reference searching. Searching only a single electronic database is never a reliable method for any evidence synthesis and should be avoided for RRs.
Searching – Peer review of the search strategy (Spry 2018) [4]	This study investigated a sample of search strategies without peer-review compared to peer-review (n=200 RR reports).	Findings suggest that in the absence of peer review, 2,507 potentially relevant records would not have been retrieved by the PubMed search strategy. However, this led to including only 4% (n=99) of these records in the reports. Unless captured in the accompanying grey literature search, these records would not have appeared in the published RRs - thus reducing the integrity of the reports. The authors did not assess impact of these missed studies on conclusions.
Study selection – limiting to English Only studies (Nussbaumer-Streit 2019) [5]	Based on an analysis of 59 randomly selected Cochrane Intervention Reviews with no language restrictions (which included 1281 studies), one study assessed whether limiting inclusion criteria solely to English language publications affected the overall conclusions of the reviews.	Findings suggest that although exclusion of non-English publications led to the exclusion of 31 studies (40 outcomes), exclusion of non-English studies did not markedly alter the size or direction of effect estimates or statistical significance. Overall, the proportion of changed conclusions in this sample was 0.0% (95% CI 0.0 – 0.6) which indicated non-inferiority of the approach. Therefore, exclusion of non-English publications from SRs on clinical interventions had a minimal effect on overall conclusions and could be a viable methodological shortcut, especially for RRs.

Stage of Review Conduct	Brief Study Description	Findings at a Glance
Study selection- PICo-based title only screening to reduce overall screening effort (Rathbone 2017) [6]	One study evaluated the feasibility of PICo-based title only screening by measuring the reduction in screening effort and maintenance of recall of relevant records using a sample of 10 datasets (31,359 records) from across completed SRs related to a variety of clinical topics. Five reviewers independently performed title only screening.	Results indicated PICo-based title only screening reduced screening effort (11-78% with a median reduction of 53%) and expedited citation screening, which is useful for RRs. However, this approach requires a thorough workup of the potential synonyms and alterative terms. PICo-based title-only screening may be able to expedite citation screening, however there is a chance for missed studies.
Study selection – title/abstract screening (Gartlehner 2020) [7]	This study was an online, parallel-group RCT that assessed the accuracy of single-reviewer screening compared with dual-reviewer screening. Using the Cochrane Crowd platform, eligible participants were randomized to a pharmacological or a public health SR and asked to screen 100 abstracts each following a training exercise.	Overall, 280 reviewers started screening abstracts of whom 239 (85%) completed the review of all 100 assigned abstracts. In total, reviewers made 24,942 screening decisions and on average each abstract was screened 12 times. Overall, single-reviewer screening achieved a sensitivity of 88.4% (95% confidence interval [CI], 83.6% to 91.9%). Dual-reviewer screening reached a sensitivity of 97.8% (95% CI, 95.5% to 99.0%). In summary, findings suggest that single-reviewer abstract screening misses about 13% of relevant studies. Based on prior research, 10% is a generally accepted level of risk decision-makers are willing to take for missing evidence; therefore, this could be a viable approach for RRs.

References:

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