



Moving from episodic/static to rapid/living systematic reviews: case studies demonstrating benefits and applications

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Background

Problems exist in current methods for the the creation of systematic reviews and practice guidelines. Consequently, new methods have been developed:

- **Living systematic reviews** (Elliott, 2014 PMID 24558353)
- **Rapid reviews** (Kelly, 2016 PMID 27724987))
- **Scoping reviews** (Levac, 2010 PMID 20854677)

However, a barrier wer have encountered with living systematikc reviews is how to give credit for scholarly contributions in order to incent authors.

Methods

We present three case studies that illustrate the benefits of combining rapid, living, and scoping reviews. Our case studies are available online at <http://openmetaanalysis.github.io/>. We use meta-narrative to identify expected barriers and proposed solutions. The meta-narrative was seeded with themes identified in Elliot’s original proposal for living reviews (Elliott, 2014 PMID 24558353)

Results

The case studies of rapid/living are:

1) a review of bronchiolitis treatment with hypertonic saline illustrates how a living review can add new studies that are published after acceptance of the review

2) a review of sciatica treatment with gabapentoids was able to support a commentary for ACP Journal Club and add the trial that was the subject of the commentary

3) a review of chronic back pain treatment with tramadol with new studies added in time to support a substantive reassessment of a practice guideline by the American College of Physicians (ACP). The authors of the ACP guideline commented on their own guideline: “Given their findings, we would agree that tramadol would likely not have been recommended as a treatment option for chronic low back pain”.

Table 1. Proposals for ***governance*** of living reviews by linkage with clinical practice guidelines..

Proposal	Comments
The sponsoring society considers edits to a living review <i>after</i> the rationale for the edit is accepted for publication as a research letter, other format in the journal of the society or other journal.	In this approach the sponsoring society uses existing structures for peer review and publication to vet and assess proposed content.
The sponsoring society maintains evidence teams that accept edits on a case-by-case basis.	In this approach the sponsoring society creates a system for ongoing evidence assessment with the rationale that the new system would have less costs or improved execution compared to episodic systematic reviews commission for guideline updates. (J Neurotrauma 2016 PMID 26414062)

Conclusion

Traditional systematic reviews, which are episodically created and static in content, may benefit from conversion to reviews that are living, rapid, and collaborative. Cases studies suggest applications of this type of review are 1) providing current data synthesis for use by editorialists and other commenters who need to place new research studies in context, and 2) improving the updating of practice guidelines.

Table 2. Proposals for ***incenting contributions*** by providing academic credit to authors of microcontributions to living reviews.

Proposal	Comments
Acknowledgement of contribution in next version of guideline	This is the easiest proposal to implement, but may insufficiently incent contributors.
Nanopublication	The journal of the society that sponsors the guideline encourages contributors to submit short research letters to the society's journal when a new study or analysis is accepted for incorporation into the living review by the society. The letter could also be accompanied by a file in the format of a nanopublication to facilitate discovery and aggregation.
Limited authorship type for contribution of data, analysis, or interpretation. (See Bierer NEJM 2017 PMID 28402238; http://docs.casrai.org/CRedit)	This would require changes to structure of citations at the National Library of Medicine. Implementation of this approach may include: <ul style="list-style-type: none">• Trialists add their data to the living review at the time of publication of the trial.• The society updates the forest plots upon receipt of the new data in order to avoid a sea of analysts racing to update the plots to obtain authorship.• The updated plots, due to quick incorporation, would be available to editorialists commenting on new trials when the trials are published.
Full authorship in next update of guideline	This would be based on the approach of the physics community (example at https://pubmed.gov/26550718). A society may choose to list the leadership committee of the guideline as first authors. Authorship for microcontributions could be limited to the next update of the guideline.