Poster #MSR28

Examining Guidance and Key Principles for Conducting Living Systematic Reviews: A Methods Review

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Living systematic reviews are a valuable way to keep high-priority decisions up-to-date. Following a recommended process improves the success of managing constant literature updates. Though it can be a challenging process, there are an increasing number of automation tools that assist with conducting a living systematic review to ensure transparent and efficient decision-making.

Background

- Systematic literature reviews (SLR) are essential in informing healthcare decision making and are pivotal for reimbursement submissions to health technology assessment (HTA) bodies.[1]
- A limitation of SLRs is that they can become quickly outdated. Living systematic reviews (LSR) can overcome these challenges by continuously incorporating relevant new evidence as it becomes available.[2-4]
- Living approaches to evidence curation have gained increasing interest, with key organizations recommending a living HTA model that advocates for the use of continuous review of existing decisions in the light of new evidence.[5]
- Despite the increased use of LSRs, with over 35 published since 2015 (not including those published on COVID-19),[6] there is limited information on best practice guidelines on how to conduct LSRs and on challenges associated with them.

Objective

- Using SLR methodology to identify best practice guidance and any associated challenges in conducting LSRs.

Methods

- A comprehensive literature review was conducted in January 2023 in Embase and MEDLINE (via Ovid) to identify methods and recommendations on LSRs, living HTAs, and/or guidelines. The websites of key organisations were also searched. No time restrictions were applied.
- Studies were selected by a single reviewer. Data on recommendations on the LSR process, any (perceived) challenges of the process, and tools used to improve efficiency were extracted and common themes synthesised.

Figure 1. PRISMA diagram

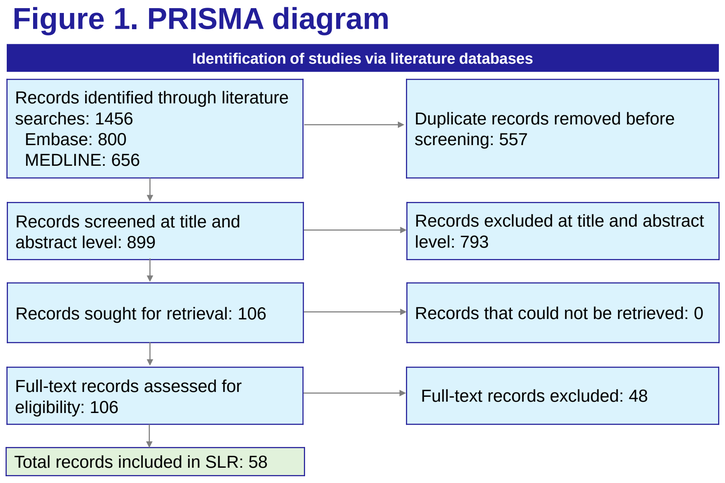
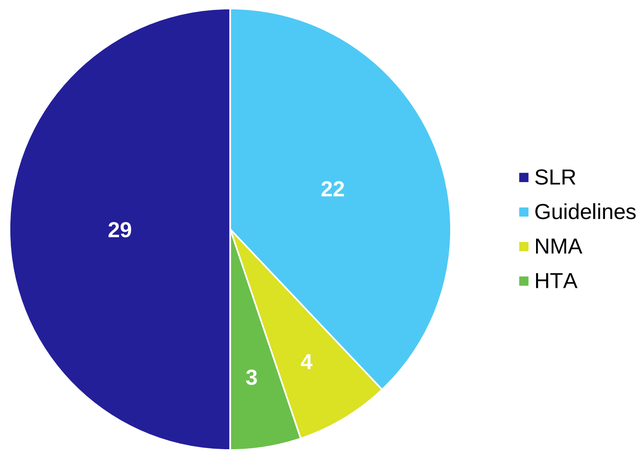


Figure 2. Types of living evidence synthesis discussed

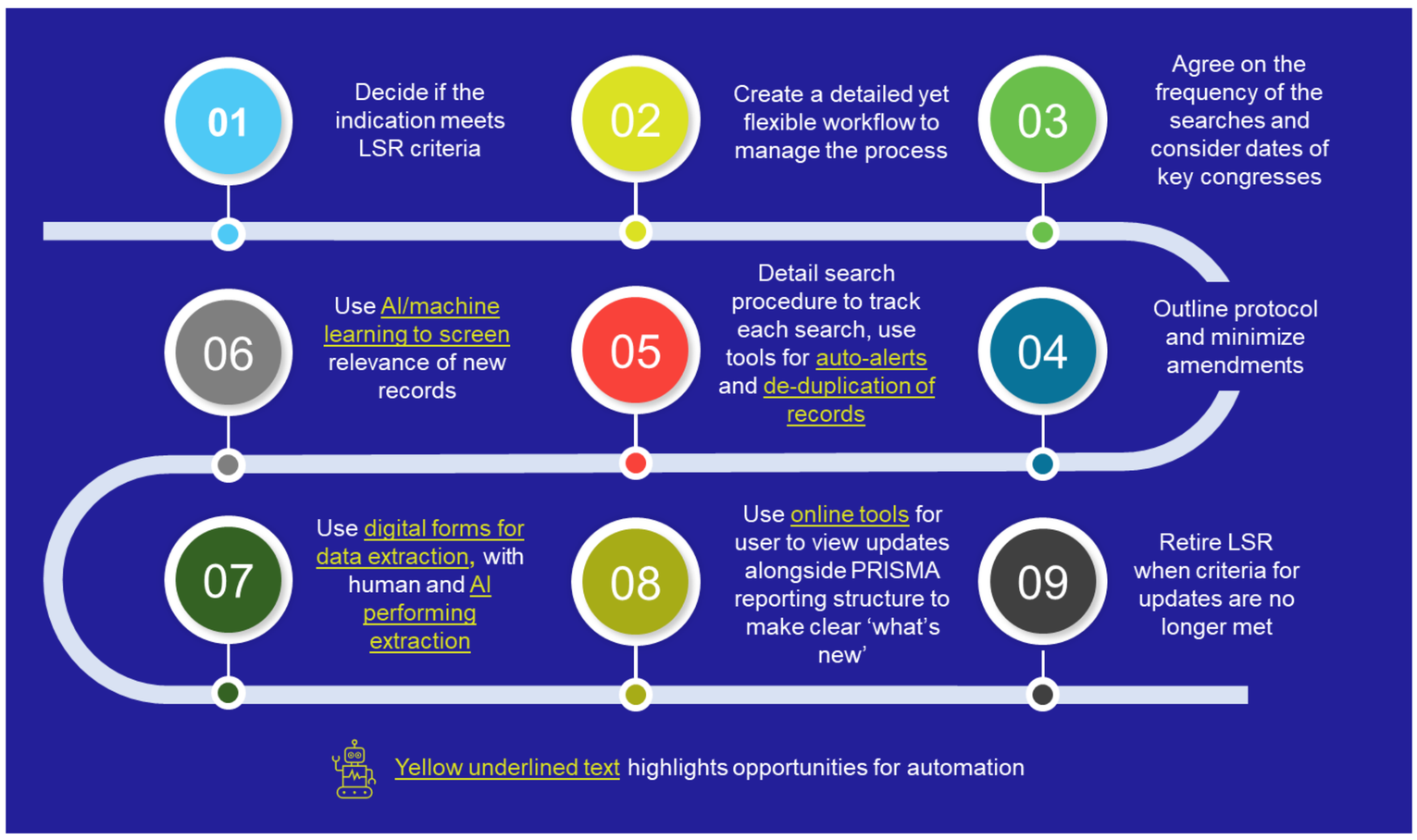


Abbreviations: HTA, health technology assessment; NMA, network meta-analysis; SLR, systematic literature review

Results

- The literature searches identified 899 unique records, of which 58 met the study selection criteria (Figure 1).
- Most publications (50%) discussed LSRs, followed by living forms of clinical guidelines (38%), network meta-analyses (NMAs) (7%), and HTAs (5%) (Figure 2).
- An LSR was considered suitable when the following criteria are met:
  1) the recommendations are a high priority for decision-making (i.e., in the case of COVID-19),
  2) new evidence is likely to change the recommendations, and
  3) new evidence is expected to emerge.
- The management and planning of the conduct of a LSR was identified as an important step to consider, given that they require significant investment of time and resources, although automation technology was considered an opportunity to lessen this burden. The LSR process and opportunities for automation are presented in Figure 3.
- In the quantitative synthesis of new evidence with each update, the suitability and frequency of updates requires consideration in cases where conclusions are unlikely to change, but the statistical heterogeneity may change.
- The main challenges associated with the conduct of LSRs included an increased workload, difficulty in setting up automation technology, and a lack of clear guidelines and standards for reporting (Figure 4).
- Further innovation opportunities were identified which, if addressed, could make the LSR process easier (Figure 4).

Figure 3. Recommended LSR process



Abbreviations: AI, artificial intelligence; LSR, living systematic review; PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-Analyses

Figure 4. LSR challenges and opportunities

Challenges	• LSRs require investment of time and money • Automation technology presents initial learning/set up hurdles • Lack of clear guidelines and standards for LSR reporting and PRISMA presentation • Traditional publications not well adapted to presenting LSR updates and tracking past versions
Opportunities	• Tools to run searches from multiple databases and export results into one file • Standardised, detailed record metadata to increase screening efficiency • Standardised format for presenting updates and archiving past versions • Online tools to allow interaction with updates

Conclusions

- There are a lack of consistent guidelines to guide the conduct of an LSR, with decision points needed on when to execute an LSR, the frequency of updates, and the decision to stop an LSR.
- There is an opportunity for innovation to overcome some of these challenges, including automated tools to run searches, and the standardisation of record annotation and data reporting formats.

References

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Disclosures

- All authors are employees of Cytel Inc. which owns proprietary software in the conduct of literature reviews.

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