Selecting rapid review methods for HTA

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Outline of workshop

- Background to rapid reviews
- Three case studies
- Checklist for selecting methods
- Plans for the future
What do we mean by rapid reviews?
A step back: systematic reviews

- Systematic reviews: standard methods
- **SALSA** (Grant and Booth, 2009):
  - Search
  - Appraisal of quality
  - Synthesis of evidence
  - Analysis
- Rapid reviews are increasingly important due to time and resource constraints
Rapid reviews—what exactly are they? (Tricco et al, 2015)

• a form of knowledge synthesis in which components of the systematic review process are simplified or omitted to produce information in a timely manner

• Over 50 unique rapid review methods have been identified
Methods used in rapid reviews (Tsertsvadze et al 2015):

**Accelerated methods**

Process parallelisation: more people involved

Innovative techniques: automated or semi-automated study selection, data extraction, translation

**Abbreviated methods**

Modification of systematic review methodologies: restricting, curtailing or bypassing systematic review steps
Choosing approaches to rapid review

- Range of options available
- How to choose?
- When to choose?
- Little guidance on selection of methods
- Little information on potential bias introduced by “cutting corners”
Three case studies
Three rapid reviews

- Produced in ScHARR for NIHR
- Premature ejaculation
- Cannabis cessation
- Sexual health for people with severe mental illness
<table>
<thead>
<tr>
<th>Rapid review</th>
<th>Challenges</th>
<th>Approach</th>
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<tbody>
<tr>
<td>Premature ejaculation</td>
<td>Over 100 RCTs and reviews, wide range of interventions</td>
<td>Meta-analysis for primary outcome using data extracted from existing reviews</td>
</tr>
<tr>
<td>Cannabis cessation</td>
<td>Wide variation in study populations, interventions and comparators; little consistency with outcome measures</td>
<td>For each pair of interventions, narrative summary of outcomes reported and statistical significance</td>
</tr>
<tr>
<td>Sexual health interventions</td>
<td>Wide range of interventions, comparators, settings and outcomes; no clear definition of severe mental illness</td>
<td>Definition agreed with clinicians. Brief summary of results presented, narrative synthesis, grouping of study outcomes: biological, behavioural, proxy</td>
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Our rapid review work

Kaltenthaler et al. BMC Medical Research Methodology (2016) 16:108

The use of rapid review methods in health technology assessments: 3 case studies

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Abstract

Background: Rapid reviews are of increasing importance within health technology assessment due to time and resource constraints. There are many rapid review methods available although there is little guidance as to the most suitable methods. We present three case studies employing differing methods to suit the evidence base for each review and outline some issues to consider when selecting an appropriate method.

Methods: Three recently completed systematic review short reports produced for the UK National Institute for Health Research were examined. Different approaches to rapid review methods were used in the three reports which were undertaken to inform the commissioning of services within the NHS and to inform future trial design. We describe the methods used, the reasoning behind the choice of methods and explore the strengths and weaknesses of each method.

Results: Rapid review methods were chosen to meet the needs of the review and each review had distinctly different challenges such as heterogeneity in terms of populations, interventions, comparators and outcome measures (PICO) and/or large numbers of relevant trials. All reviews included at least 10 randomised controlled trials (RCTs), each with numerous included outcomes. For the first case study (sexual health interventions), very diverse studies in terms of PICO
Checklist for selecting rapid review methods
### Checklist for selecting rapid review methods

1. **Scope of review and interaction with commissioners/policy makers**
   - Ensure clear communication with commissioners/policy makers, it’s important that there is a common understanding of the purpose of the review, the questions to be answered, and the trade-off between time and scope. Points to consider:

2. **In-depth analysis**
   - Is it preferable to the commissioner/policy maker to present an in-depth analysis of a smaller selection of studies?

3. **Brief overview**
   - Is it preferable to the commissioner/policy maker to present less information from a wider range of studies?

4. **Scoping and searching the evidence base**
   - Assess the volume and type of evidence available. This will help inform discussions with commissioners/policy makers about the review scope and which rapid review methods are most appropriate. Points to consider:

5. **Scoping searches**
   - Scoping searches: Assessing the initial database search strategies is useful to estimate the number of citations to be screened. Targeted informal scoping (e.g., via internet searches, existing reviews and expert advice) may help estimate the volume and type of includable studies.

6. **Existing systematic reviews**
   - These are useful for the following:
     - To estimate the number of includable studies.
     - To inform your search strategy.
     - To inform your synthesis method, e.g., review of reviews, update of existing reviews.
     - Need to consider: What is the question answered by existing review(s)?, what are their search dates and methods, what is their methodological quality?

7. **Final review searches**
   - Consider the appropriateness of the applying limits and alternative search approaches against the breadth of search strategies; there is likely to be a trade-off between the volume of citations retrieved and the impact on comprehensiveness.

8. **Data extraction and synthesis methods**
   - Consider presentation of evidence. The complexity of the evidence base should be taken into account and an assessment made as to how much data should be presented and in what format. Options to consider:

9. **Use of existing reviews**
   - Options include:...
The checklist

1. Scope of review and interaction with commissioners
2. Scoping and searching the evidence base
3. Data extraction and synthesis methods
4. Reporting of rapid review methods
1: Scope of review and interaction with commissioners

- Clear communication
- Restricting the scope
- In depth analysis
- Brief overview
Issues to consider

- Review decisions may not align with what the commissioner is expecting.
- Why is the review being conducted?
- What level of detail is required?
- Are publications expected?
- Review to underpin future research?
When to interact with commissioners

- Early on in the project
- Protocol
- During review
- At the end of the review
Understanding limitations

- Searching
- Study selection
- Data extraction and synthesis
- Application
- Choices and trade offs
2: Scoping and searching the evidence base

- Assessing the volume and type of evidence
- Scoping searches
- Existing systematic reviews
- Final review searches
Issues to consider

- With limited time and resources, it is not feasible to carry out full systematic searches
- What are the options to searching?
- Which approach to take?
- How to check if the search is adequate?
Key messages for searching

1. Know what evidence is available before choosing your rapid review methods

2. Scoping searches are key to estimating the number of relevant studies
3: Data extraction and synthesis methods

- Presentation of evidence
- Use of existing reviews
- Limiting outcomes to extract
- Meta-analysis
PICOSS

- **Population**: is the population/condition of interest defined in a standard way, or a variety?

- **Intervention(s)**: is the intervention defined in a common, standard way? Are there a range of interventions? – Same for the Comparator

- **Outcome(s)**: is the outcome defined and measured in the same way? How many outcomes? Is the key outcome commonly reported?

- **Setting**: what is the setting of interest? Are there lots of/no studies in that setting?

- **Studies**: what is the volume? Are there lots of studies? Are there any existing reviews?
Considerations when using systematic reviews (SRs)

• Is there more than one SR per treatment for cross-checking?
• How old are the SRs – undertake summary of SRs and additional summary of newer studies
• Have SRs included a quality assessment – is this any good?
• Consider quality assessing SRs – e.g., AMSTAR2, ROBIS
SRs continued

• Is the majority of the evidence base captured by existing reviews?
• Even existing SRs will have some sort of short-cut, e.g., limited searching
Key messages for data extraction and synthesis

1. Carefully consider the heterogeneity/homogeneity across the evidence base for the key elements of your PICOSS.

2. If thinking about using existing SRs, how many are there, are they within your scope, how old are they, do they include a robust quality assessment of included studies?
4. Reporting of rapid review methods

- Clear description of methods
- Discussion of limitations
Importance of reporting

• **Methods:** clear description of what was done

• **Difference from standard systematic review methods**

• **Potential limitations:** biases and shortcomings of methods chosen and impact on results
Key messages for reporting

- Readers (and commissioners) need to have enough information to understand what was done and the key results
- Potential limitations need to be highlighted
Future plans
The way forward.....

- Agreed checklist for selecting methods
- Planned strategy for each review
- Understanding of bias
Checklist validation study

- Delphi study to look at each checklist component
- 60 participants internationally: users and methodologists
- 3 Delphi rounds for consensus
- Publication expected June 2018
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- The views and opinions expressed therein are those of the authors and do not necessarily reflect those of the HTA Programme, NICE, NIHR, NHS or the Department of Health.
References


Thank you!

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