TOP TIPS FOR SYSTEMATIC REVIEWS

Dos
1. Focus Your Question
2. Read (re-read) Briefs
3. Try to estimate volume of literature
4. Identify team with required skills and involve them early
5. Assume “neutral” writing stance

Don’ts
6. Don‟t be tempted by Scope Creep!
7. Don‟t use team of exclusively part-timers
8. Don‟t confuse roles
9. Don‟t forget software!
10. Don‟t underestimate time/cost of searches and document delivery

1. Focus Your Question

- Successful search strategies are highly structured. Built around PICOS framework.
- Population Intervention Comparison Outcome Study design (PICOS) framework helps group search terms into topic groups.
- PICOS best where medical model of research typically defined by;
  - specific **P**opulation for example, children;
  - **I**ntervention, for example, exercise regime;
  - type of **C**omparison, for example, a control group
  - **O**utcome, for example, weight control.

Study design e.g. randomised controlled trial

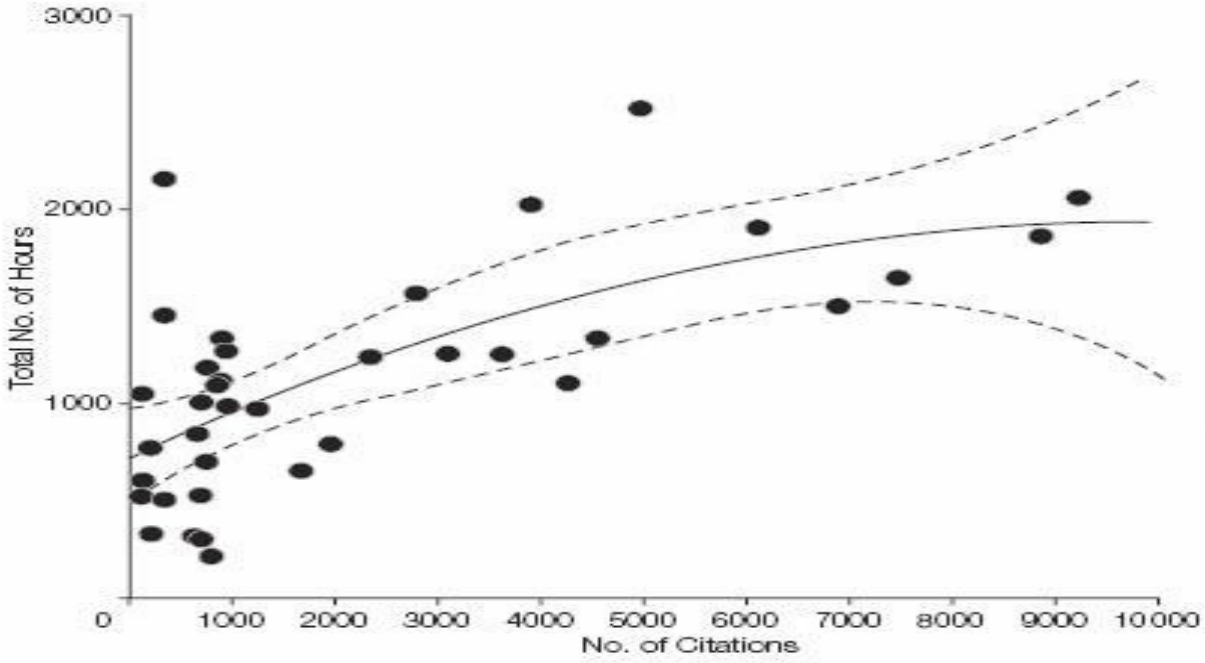
2. Read (and re-read) Briefs

- Read scoping document and associated guidance in *minute detail*
- Check you qualify
- Read it again and again
- What are funders‟ priorities?
- Any pre-requisites required?
- Check recent bid history (via RDS)

3. Estimate volume of literature

- Subject experts tend to underestimate amount of relevant literature
- Rule of Thumb – do preliminary search on MEDLINE then divide hits by four and multiply by ten (e.g. 360 refs on MEDLINE probably means 360*10/4 = 900 refs to look through).
- Cp. Observed association between number of initial citations (before exclusion criteria are applied) and total time it takes to complete meta-analysis (Allen & Olkin, 1999).

Figure. Citations Retrieved for a Meta-analysis and Total Hours Required to Complete the Meta-analysis



Number of citations retrieved before any exclusion criteria are applied. Regression curve and 95% confidence intervals are shown.

Average hours for SR

- = 1139 (~6 months), range 216-2518 hours.
- Component mean times:
  - 588 hours Protocol development, searches, retrieval, abstract management, paper screening and blinding, data extraction and quality scoring, data entry
  - 144 hours Statistical analysis
  - 206 hours Report and manuscript writing
  - 201 hours Other (administrative)

Search Process Only

- EPPI-Centre documented time for experienced researcher to develop/implement Medline search strategy for sexual health promotion primary studies.
- **40 hours** Developing & testing sensitive search strategy for Medline
- **8 hours** Implementing search for most recent Medline period at time (Jan 1996-Sept 1997) and downloading citations
- **7 hours** Scanning through 1048 retrieved records
- If implemented over 30 years of Medline, retrieved records = approx 10,000. 70 hours needed to identify relevant citations. Medline search strategy would take approx **120 hours.**
- Preliminary literature search + contact with experts might help in calculating approximate time to complete review.

4. Identify required skills for team, involve them early

- **Subject Experts**
- **Information Specialist**
- **Health Service Researchers**
- *Statistician (e.g. Meta-analysis)*
- *Economist (e.g. Cost effectiveness)*
- *Qualitative Researcher (e.g. Acceptability)*

Bold = Essential; *Italic = Specific*

5. Assume "neutral" writing stance

- Systematic methods aim to minimise bias and maintain **neutrality** - **Don't prejudge** issue
- **Equipoise** [uncertainty principle] (c.p. RCTs)
- Consider **Declaration of Interest**
- Consider Use of **Reflexivity** in Qualitative Evidence Syntheses

6. Don't be tempted by Scope Creep!

- Often major problem - amount of evidence not precisely known at start.
- Subject experts want to know more, not less, thus expanding initial scope.
- *Suggestion:* Allow **Time** to develop scope and to become familiar with topic
- Clarify **Goals**, **Priorities** and **Boundaries**.
- Use **rational, stringent and efficient** approach for scope/literature review
- Reduce inefficient exploration of "next-best" evidence, **define minimum standards for inclusion criteria**

7. Don't use team of <u>exclusively</u> part-timers

- Need continuity for project
- Vast Knowledge Management undertaking
- Critical Dependencies
- However you can optimise utilisation of other roles e.g. Literature Requesting/ Reviewing / Report Writing

8. Don't confuse roles

- Project Team (Weekly)
- Internal Steering Group (Monthly)
- External Reference Group/ Advisory Group (Beginning/Middle/End)
- Stakeholder Involvement/Public Participation (Beginning? End?)

9. Don't forget software

- Reference Management (£/FREE)
- RevMan (FREE)
- Other Meta-analysis software (£)
- NVivo (£)
- Joanna Briggs Institute Software (FREE)

10. Don't underestimate time/ cost of searches/document delivery

- Conducting Searches
- Sifting
- Generating Requests
- Processing Requests
- Fulfilling Requests
- Verifying Exceptions
- …..expect the unexpected!
- Documenting Searches & References

Red = Dependent on External Resources