

# Guidance on the conduct of narrative synthesis in systematic reviews: a comparison of guidance-led narrative synthesis versus meta-analysis

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## Objectives

- To evaluate the impact of applying guidance on the conduct of narrative synthesis to a systematic review of effects.
- To compare the results and conclusions of this guidance-led narrative synthesis with those of a published Cochrane meta-analysis of the same group of studies.

## Methods

- Initially, we undertook a review of the methodological literature to develop draft guidance on the conduct of narrative synthesis in systematic reviews (see box).
- After developing a draft of the guidance, we applied it to a synthesis of 11 RCTs that had previously been included in a meta-analysis as part of a previous Cochrane review which investigated the effects of interventions for promoting smoke alarm ownership and function.<sup>1</sup>
- The reviewers carrying out the new narrative synthesis were blinded to the findings of the original Cochrane review.
- We then compared the results and conclusions of the two different approaches.

## Results

- The framework laid out in the guidance (see Box 1) provided a clear and easy to follow structure for the narrative synthesis.

### Box 1: Developing guidance on the conduct of narrative synthesis

We aimed to develop guidance on the conduct of narrative synthesis in systematic reviews, with a particular focus on increasing the transparency and reproducibility of the process.

#### Identifying relevant methodological literature

We conducted a systematic search of the methodological literature, covering electronic databases, internet sources, material known to the research team and handsearching of retrieved publications. Two researchers independently applied a set of inclusion criteria to the 1,309 retrieved articles. Ultimately, 69 articles, books and reports were included in the methodological review.

Retrieved articles were used to (a) identify common generic elements of the synthesis process and/or (b) identify discrete tools and techniques for the management, manipulation, and presentation of data in narrative synthesis.

#### Creating the guidance document

A generic framework consisting of four main elements was developed to characterise the narrative synthesis approach:

- Developing a theory of how the intervention works, why and for whom.
- Developing a preliminary synthesis
- Exploring relationships within and between studies, and
- Assessing the robustness of the synthesis product

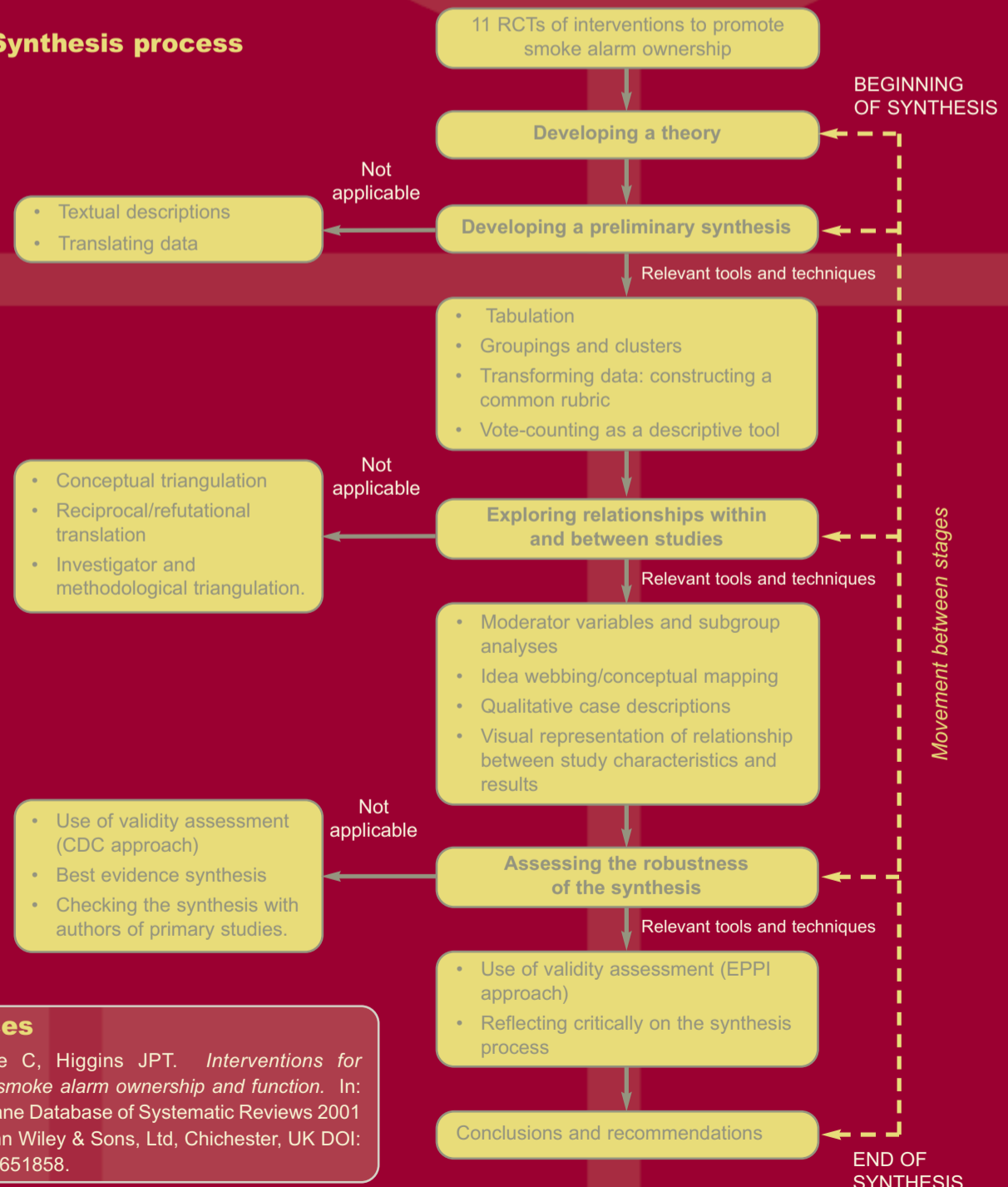
Though each of these elements are essential to the narrative synthesis, they do not necessarily occur sequentially or independently. Nineteen distinct 'tools and techniques' were identified from the methodological literature and placed within the appropriate elements of the framework. Precisely which tools and techniques are used in any given synthesis is likely to vary, depending upon the data being synthesised. When applying the guidance, reviewers can choose any tools or techniques they consider appropriate, so long as these decisions are clearly justified and documented.

- Ten of the 19 "tools and techniques" described in the guidance were considered relevant and were used in the synthesis (see Figure 1).
- Both the narrative synthesis and the meta-analysis led to the conclusion that educational interventions resulted in only modest increases in smoke alarm ownership and function and that there was insufficient data on injury/burn prevention.
- Both syntheses suggested that including previously-injured children in a trial might moderate the effectiveness of a safety education intervention.
- The narrative synthesis led to recommendations for future research relating to improvements in outcome measurement, description of interventions, use of theory in designing interventions, and adjusting for potential confounding from concurrent fire safety initiatives/policies. This contrasted with the meta-analysis, which had incorporated subgroup/sensitivity analyses to further evaluate the effects of interventions delivered as part of child health surveillance, discounted alarms and the impact of individual quality factors.

## Conclusions

- For this example, the results and conclusions of meta-analysis and guidance-led narrative synthesis of the same effectiveness studies were broadly similar.
- The availability of point estimates in subgroup and sensitivity analyses may allow the meta-analyst greater confidence to draw 'firm' conclusions about moderators of effects.
- The detailed scrutiny of studies allowed by narrative synthesis may provide additional insights into implications for further research.
- The guidance provides a useful framework for the conduct of narrative synthesis, particularly for increasing transparency.
- Application of the guidance in the production of other reviews (especially those incorporating different types of primary research evidence) will further contribute to the development of transparent and reproducible approaches to narrative synthesis in systematic review.

Figure 1: Synthesis process



## References

1. DiGiuseppe C, Higgins JPT. *Interventions for promoting smoke alarm ownership and function*. In: The Cochrane Database of Systematic Reviews 2001 Issue 2 John Wiley & Sons, Ltd, Chichester, UK DOI: 10.1002/14651858.