

CURRENT EVIDENCE



By Nurfaizah Saibul

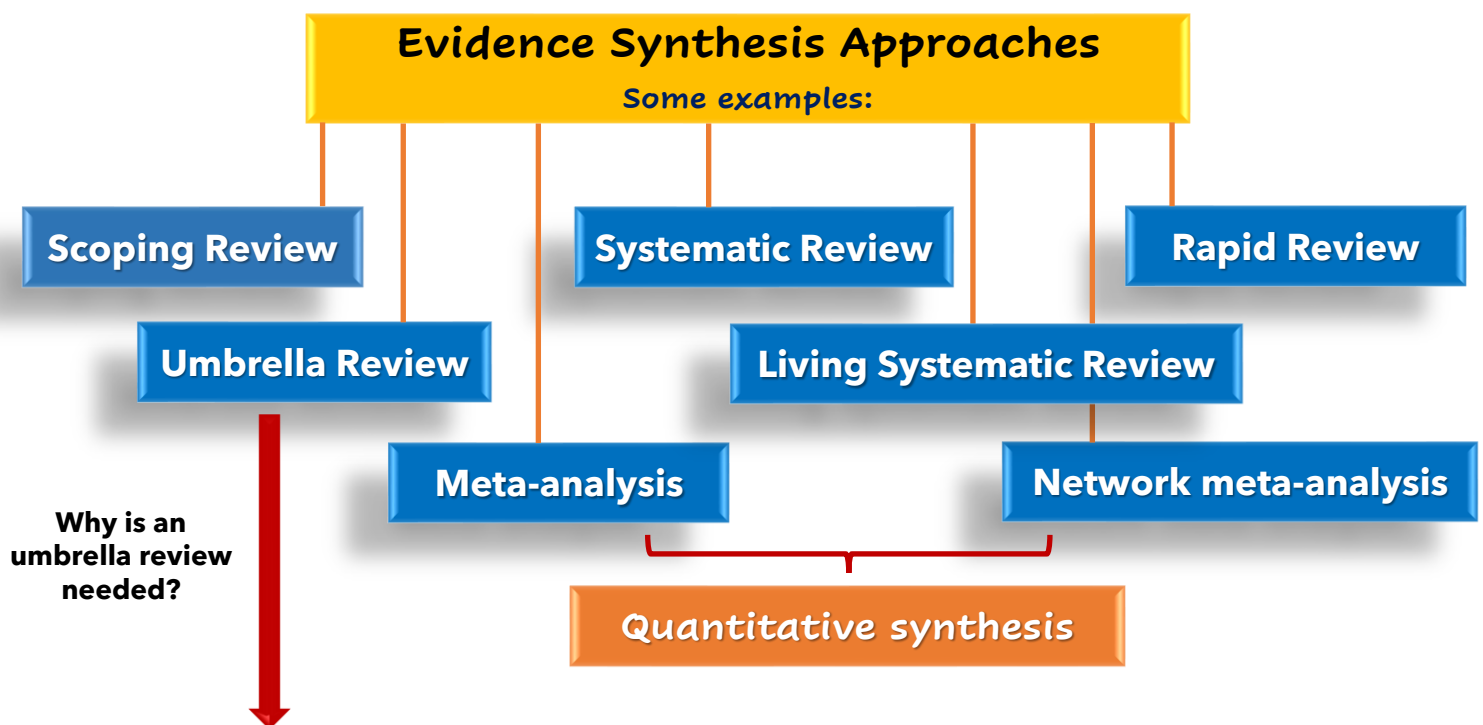
Key Points of Webinar on

EXPLORING RESEARCH COLLABORATIONS AND NETWORKING IN THE CONTEXT OF EVIDENCE SYNTHESIS AND ECONOMIC EVALUATIONS

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Evidence Synthesis



Systematic review and meta-analysis are key for evidence-based medicine. As the number of such studies increases, clinicians/decision-makers may feel overwhelmed with too many of them.

Meta-analysis on the same topic might produce inconclusive/ contradictory results

Leaving decision-makers uncertain to make a conclusion

Assess the methodological quality of the meta-analysis

**First step in
Umbrella Review**

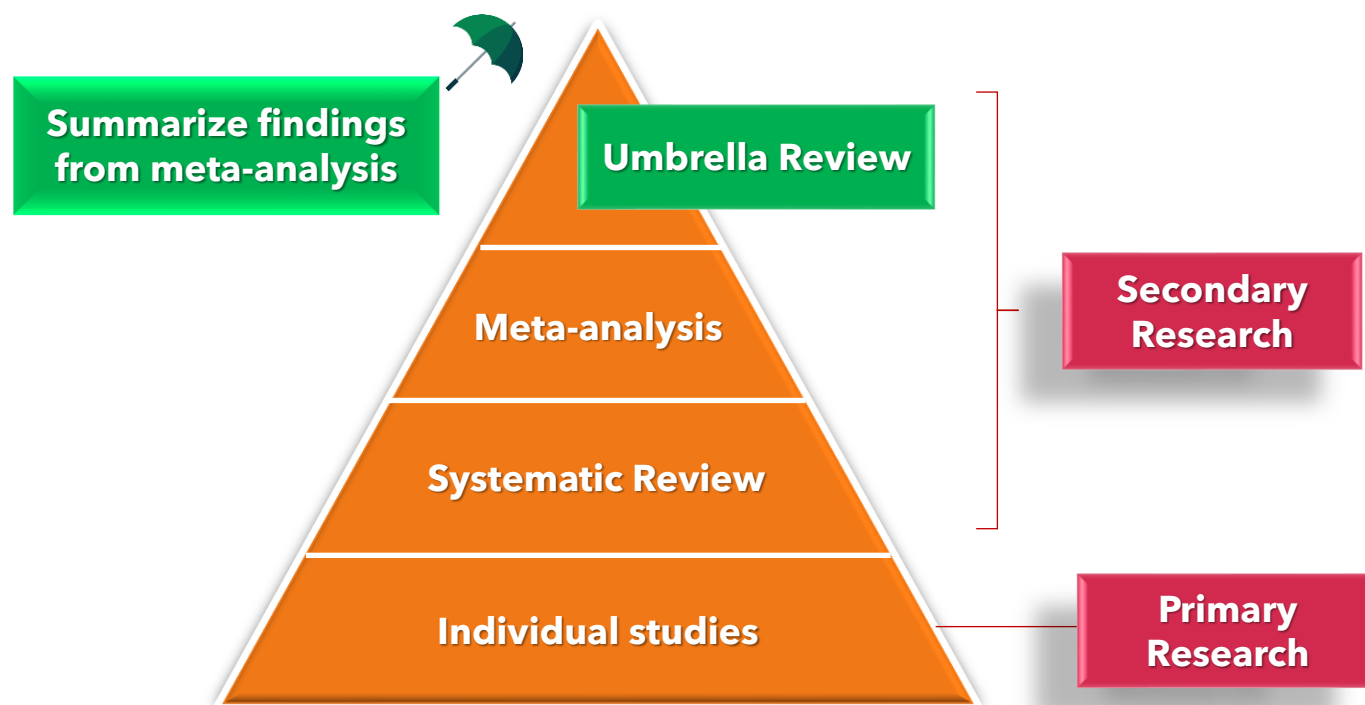


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Umbrella Review



Determine whether an umbrella review is necessary to be conducted

- A free AI research assistant.
- Analyze research papers at superhuman speed.
- Automate time-consuming research tasks like summarizing papers, extracting data, and synthesizing findings.

Research Question: PICO

P: Patient/ Problem **I:** Intervention **C:** Comparison **O:** Outcome

Types of Umbrella Review

Type 1: Same condition/ same outcome, different interventions/ exposures

Type 2: Same condition/ different outcomes, different interventions/ exposures

Type 3: Different conditions/ different outcomes, same intervention/ exposure

Type 4: Different condition/ same outcome, different interventions/ exposures

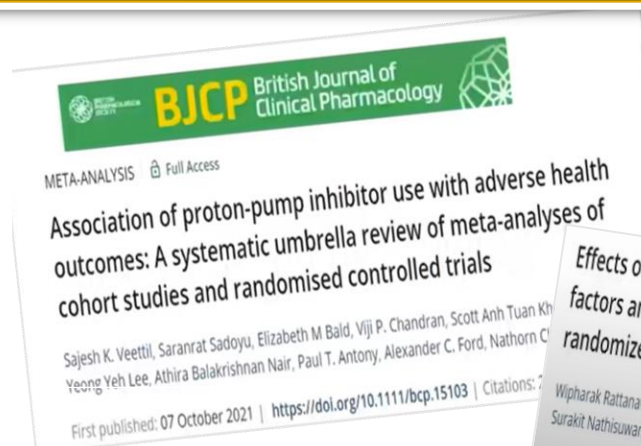
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Tips:

The easiest umbrella review is looking for a meta-analysis of RCT



Search strategy for Umbrella Review

Should be comprehensive to find all relevant systematic reviews and meta-analyses

3 databases are enough for an umbrella review

Databases:

- Medline/ PubMed
- Embase
- Epistemonikos
- Cochrane Database of Systematic Review (CDSR)

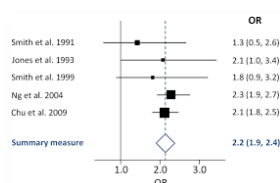


Steps of performing an umbrella review = systematic review

Protocol Registration in Prospero or Open Science Framework (OSF)

Study selection follows the PRISMA 2020 Statement

Systematic Review Manager: Covidence, Rayyan, or ASReview (AI)



Sample of forest plot of meta-analysis

When more than 1 meta-analysis on the same research question is available (overlapping of meta-analyses), you can select **only one** meta-analysis with the following criteria:

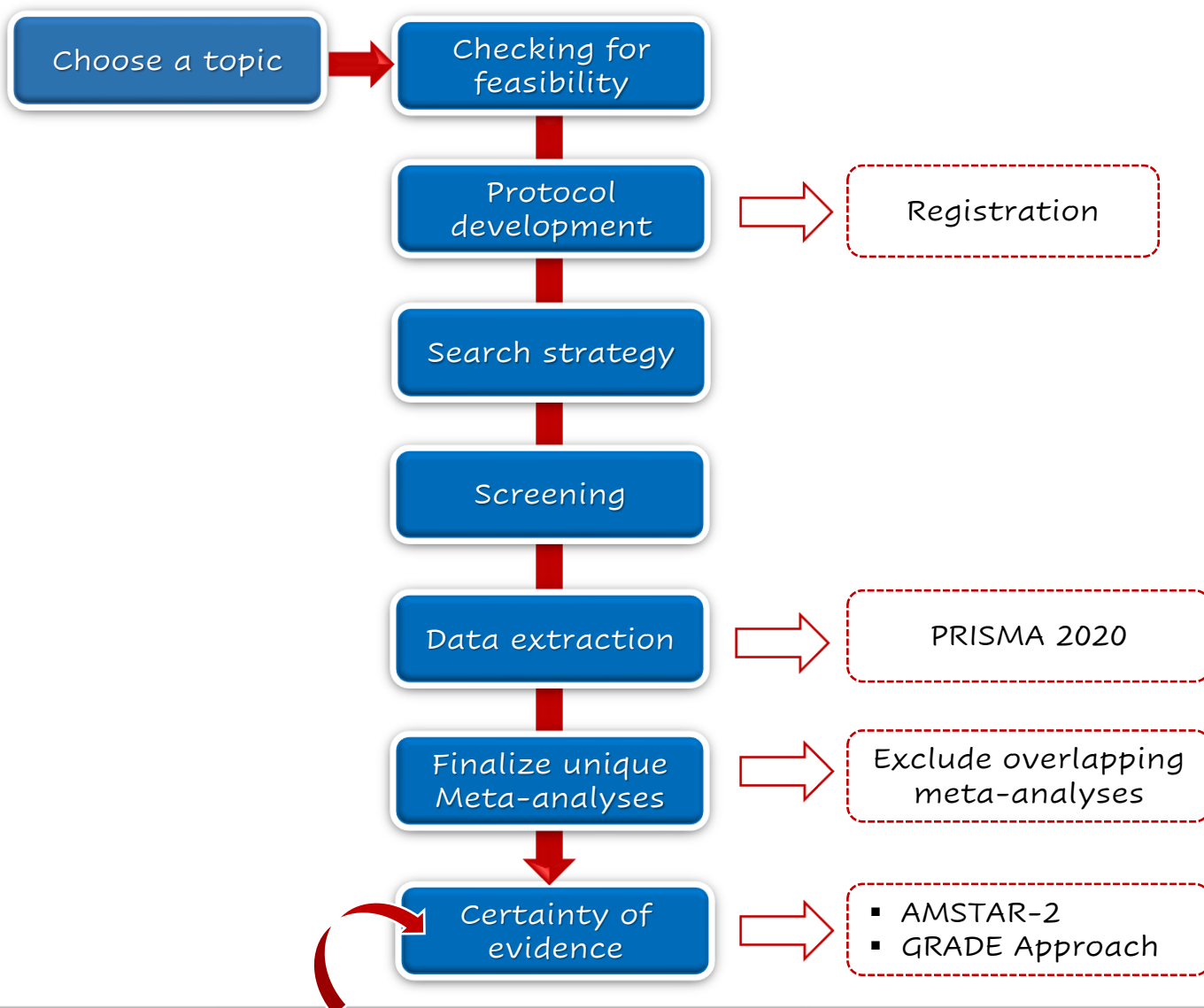
- ✓ The largest number of data set
- ✓ The largest number of cases/ sample size
- ✓ More available information on primary studies

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Umbrella Review Methods



Certainty of evidence: rating down

Body of evidence from RCT

4: High
3: Moderate
2: Low
1: Very low

- Rating down 1 level for serious concerns
- Rating down 2 levels for very serious concerns

1. Risk of bias

2. Inconsistency

3. Indirectness

4. Imprecision

5. Publication bias

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ECONOMIC EVALUATIONS

Economic evaluation (EE) studies including cost-effectiveness analysis (CEA) are important in providing evidence for policymakers to make healthcare decisions.

Meta-analysis of Economic Evaluation (MAEE):



Quantitatively summarize cost-effectiveness findings based on all existing studies answering the same question and stratify the findings based on income country level.

Statistical Approach: MAEE



Comparative Efficiency Research (COMER)

- To create a new meta-analysis method for cost-effectiveness studies to help in health decision-making.
- Propose pooling incremental net benefit (INB).
- In terms of the cost-effectiveness decision rule, the intervention is considered cost-effective when its INB is greater than 0 and not cost-effective when it is not.

INB is expressed as the value of the incremental effect multiplied by a predetermined threshold less the incremental costs.

APPROVED

The quantitative evidence generated from MAEEs is useful in supporting clear policy recommendations and can facilitate decision-making in resource-strained settings where context-specific EEs are not available (IVIR-AC WHO, March 2021).

Output COMER methods of MAEE

- Applied in several therapeutic areas:

▪ Vaccine

▪ Metabolic and cardiovascular

Funding from WHO

Economic evaluation of seasonal influenza vaccination in elderly and health workers: A systematic review and meta-analysis

Interpretation Influenza vaccination might be cost-effective for HWs and elderly in HIEs under a societal perspective with relatively small variations among included studies, while there remains limited evidence for healthcare provider/payer perspective or other level of incomes. Further evidence is warranted.

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