Appendix D. Focus Group Questions

AHRQ Network Meta-analysis Methods Project

Insight into Meta-analyses of Networks of Studies

Background: Several methodologies exist to indirectly compare interventions, as do modes to implement such methodologies. These include anchored indirect comparisons as described by Bucher et al., Lumley's Frequentist network meta-analysis (of networks with at least one closed loop) and Bayesian network meta-analysis (commonly referred to as mixed treatment comparison (MTC)). In the simplest form, interventions that are compared in separate trials to a common comparator can be compared indirectly in the anchored indirect treatment comparison. However, as a generalization of indirect comparisons, when more than two treatments are being compared indirectly, and at least one pair of treatments is being compared both directly and indirectly (a closed loop is present), both direct and indirect types of data can be used to estimate effects in a network meta-analysis. Although Lumley's Frequentist network meta-analysis and Bayesian MTC have been used to synthesize networks of studies with at least one closed loop, best practices for their use are unclear.

Invitation to Participate: You have been chosen to participate in this focus group given your involvement as a producer of a Lumley's Frequentist network meta-analysis or a Bayesian MTC in the past few years.

This research is funded by the Agency of Healthcare Research and Quality (AHRQ) and is being undertaken by the University of Connecticut/Hartford Hospital Evidence-based Practice Center (UC/HH EPC). The Lead Investigator of this study is Dr. Craig I. Coleman, Co-Director and Methods-Chief of the UC/HH EPC, based at the University of Connecticut School of Pharmacy (UCSoP).

Instructions: As a participant, we are asking that you thoroughly and conscientiously complete the following questionnaire. We anticipated this should take you about 10-15 minutes. All participants will be acknowledged in the resulting published AHRQ report.

When asked to answer questions regarding your specific network meta-analysis, please note that we are referring to the published work defined in the email message sent to you.

If you have any questions related to this survey, please contact:
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Please review the following before starting.

Please Note: For the purposes of this questionnaire, we will use the following specific definitions:

- **Network meta-analysis** = Simultaneous synthesis of evidence of all pairwise comparisons across >2 interventions.
- **Closed loop network of evidence** = A network of evidence where >2 interventions are being compared indirectly, and at least one pair of interventions is being compared both directly and indirectly.
- **Mixed treatment comparison (MTC)** = The Bayesian approach as described by Lu and Ades whereby both direct and indirect evidence for particular pair-wise comparisons can be combined, and interventions that have not been compared directly are linked through common comparators.
- **Lumley's Frequentist network meta-analysis** = The Frequentist approach originally described by Lumley whereby both direct and indirect evidence are combined when there is at least one closed loop of evidence connecting two interventions of interest (not Bucher's method of anchored/adjusted indirect comparison).

Demographic Information

1. Work setting
    a. Academic
    b. Nonacademic

2. Are you affiliated with an organization involved in conducting evidence synthesis/systematic review/meta-analysis (i.e., AHRQ, Cochrane, NICE)?
    a. Yes
    b. No

    If yes, which_____(list all that apply)

3. Do you consider yourself to personally have the expertise needed to implement a network meta-analysis on your own?
    a. Yes
    b. No

    If yes, which of the following methods (check all that apply)?
        i. Bayesian mixed treatment comparison
        ii. Frequentist network meta-analysis

4. Prior to conducting your network meta-analysis identified at the beginning of this survey, how would you describe your experience with the methodology?
    a. Knew about network meta-analysis and had used it before

b. Knew about network meta-analysis but had not used it before
c. Never heard of it

5. Have you had any formal or informal training in network meta-analysis methods?
    a. Yes
    b. No
    c. If yes, please describe:_____

6. How many network meta-analyses have you been involved in conducting?
    a. Just this one
    b. 2-4
    c. 5 or more

7. What was your role on the network meta-analysis identified at the beginning of this questionnaire (check all that apply)?
    a. Clinical advice/clinical interpretation/policy development
    b. Protocol development
    c. Developed search strategy
    d. Data extraction
    e. Statistical advice/methodologist
    f. Writing or critical revision of manuscript/report
    g. Obtaining of funding
    h. Other (explain):_____

Using the 5-point Likert scale, please respond to the following statements in regard to network meta-analysis in general.

1= strongly disagree; 2=disagree; 3=neutral; 4=agree; 5=strongly agree

8. The terms "network meta-analysis" is used unambiguously and consistently in the medical literature.
    a. Strongly disagree
    b. Disagree
    c. Neutral
    d. Agree
    e. Strongly agree

    If strongly disagree or disagree, please explain:

9. The terms "mixed treatment comparison" is used unambiguously and consistently in the medical literature.
    a. Strongly disagree
    b. Disagree
    c. Neutral
    d. Agree
    e. Strongly agree

If strongly disagree or disagree, please explain:

10. The terms "Frequentist network meta-analysis" is used unambiguously and consistently in the medical literature.
    a. Strongly disagree
    b. Disagree
    c. Neutral
    d. Agree
    e. Strongly agree

    If strongly disagree or disagree, please explain:

11. Synthesizing direct evidence only from sufficient head-to-head or randomized controlled trials takes precedence over analysis containing indirect evidence.
    a. Strongly disagree
    b. Disagree
    c. Neutral
    d. Agree
    e. Strongly agree

12. The combination of indirect and direct evidence adds valuable information that is not available from head-to-head comparisons.
    a. Strongly disagree
    b. Disagree
    c. Neutral
    d. Agree
    e. Strongly agree

13. The combination of indirect and direct evidence yields a more refined and precise estimate of the interventions directly compared.
    a. Strongly disagree
    b. Disagree
    c. Neutral
    d. Agree
    e. Strongly agree

14. The combination of indirect and direct evidence broadens the external validity of the analysis.
    a. Strongly disagree
    b. Disagree
    c. Neutral
    d. Agree
    e. Strongly agree

15. Where analysis of both direct and indirect comparisons is undertaken, each approach should be considered and reported separately.
    a. Strongly disagree
    b. Disagree
    c. Neutral
    d. Agree
    e. Strongly agree

16. When conducting a network meta-analysis, an investigator should consider restricting a search to the minimum number of interventions of interest.
    a. Strongly disagree
    b. Disagree
    c. Neutral
    d. Agree
    e. Strongly agree

17. When conducting a network meta-analysis, an investigator should consider including comparisons not of direct interest (e.g., placebo controls and therapies no longer used in current practice).
    a. Strongly disagree
    b. Disagree
    c. Neutral
    d. Agree
    e. Strongly agree

18. The more interventions that are included in a network meta-analysis, the greater uncertainty is reduced, precision is increased, and the ability to establish whether various sources of evidence agree with each other is enhanced.
    a. Strongly disagree
    b. Disagree
    c. Neutral
    d. Agree
    e. Strongly agree

19. Network meta-analyses should prove a graphical depiction of the evidence network.
    a. Strongly disagree
    b. Disagree
    c. Neutral
    d. Agree
    e. Strongly agree

20. The specific statistical code used should be available either as part of the manuscript, appendix/supplemental material, or available on an external website for the reader to freely access.
    a. Strongly disagree
    b. Disagree

c. Neutral
d. Agree
e. Strongly agree

21. Current guidance on how to conduct and report a network meta-analysis is sufficient.
    a. Strongly disagree
    b. Disagree
    c. Neutral
    d. Agree
    e. Strongly agree

    If strongly disagree or disagree, please explain:

22. How much did the following play into your decision to conduct a Bayesian mixed treatment comparison meta-analysis?

The method allows for the ranking of Interventions according to the probability they are best.	Not at all	A little	Moderately	Quite a bit	Extremely
The method allows investigators to check and compare the fit of a model(s).	Not at all	A little	Moderately	Quite a bit	Extremely
The methods ability to handle multi·arm studies (those with more than 2 treatment groups).	Not at all	A little	Moderately	Quite a bit	Extremely
Frequency of use in previously published network meta·analyses.	Not at all	A little	Moderately	Quite a bit	Extremely
Ease of software implementation.	Not at all	A little	Moderately	Quite a bit	Extremely
The amount of methodological research supporting this method.	Not at all	A little	Moderately	Quite a bit	Extremely
The method's ability to combine trials reporting result in different formats, for example binomial data and summary log odds with variance (multi· or shared parameter models).	Not at all	A little	Moderately	Quite a bit	Extremely
Access to pre·bullt models.	Not at all	A little	Moderately	Quite a bit	Extremely
Requirement to specify priors which are often arbitrary.	Not at all	A little	Moderately	Quite a bit	Extremely
Collaborator(s) or your prior experience and/or expertise.	Not at all	A little	Moderately	Quite a bit	Extremely

23. We involved a researcher/collaborator in your project, solely due to their methodological expertise in Bayesian mixed treatment comparison meta-analysis?
    a. True
    b. False

24. Formal guidance was used to guide the conduction of your Bayesian mixed treatment comparison meta-analysis.

a. True
b. False

If true, please specify the guidance used and provide a complete reference if possible:

25. What are the three most significant barriers to conducting a Bayesian mixed treatment comparison meta-analysis?
    a.
    b.
    c.

26. What are the three most significant strengths of conducting a Bayesian mixed treatment comparison meta-analysis?
    a.
    b.
    c.

27. How was the code used in your analysis derived (e.g., built from scratch; used/adapted previously published/publically available code; used a wrapper such as BugsXLA or other to generate code, other source)?

28. How were your prior distributions chosen and why were these distributions chosen over others?