Appendix A: Steering committee of experts in NMA and risk of bias tool development

- Lunny C, Cochrane Hypertension Review Group and the Therapeutics Initiative, University of British Columbia, Canada
- Veroniki A, School of Education, University of Ioannina, Ioannina, Greece
- Dias, S, Centre for Reviews and Dissemination, University of York, York, UK
- Hutton, B, Ottawa Hospital Research Institute, Ottawa, Canada. Ottawa University, School of Epidemiology and Public Health, Ottawa, Canada
- Wright J, Cochrane Hypertension Review Group and the Therapeutics Initiative, University of British Columbia, Canada
- White IR, MRC Clinical Trials Unit at UCL, London, UK
- Whiting P, Population Health Sciences, Bristol Medical School, University of Bristol
- Tricco AC, Knowledge Translation Program, Li Ka Shing Knowledge Institute, St. Michael's Hospital, Unity Health Toronto, 209 Victoria Street, East Building, Toronto, ON, M5B 1T8, Canada

Appendix B

Checklist for Reporting Results of Internet E-Surveys (CHERRIES)

Checklist Item	***Explanation***	***Page Number***
Describe survey design	Describe target population, sample frame. Is the sample a convenience sample? (In "open" surveys this is most likely.)	Page 8
IRB approval	Mention whether the study has been approved by an IRB.	Page 7
Informed consent	Describe the informed consent process. Where were the participants told the length of time of the survey, which data were stored and where and for how long, who the investigator was, and the purpose of the study?	Page 7
Data protection	If any personal information was collected or stored, describe what mechanisms were used to protect unauthorized access.	Page 7
Development and testing	State how the survey was developed, including whether the usability and technical functionality of the electronic questionnaire had been tested before fielding the questionnaire.	Page 7
Open survey versus closed survey	An "open survey" is a survey open for each visitor of a site, while a closed survey is only open to a sample which the investigator knows (password-protected survey).	Page 8
Contact mode	Indicate whether or not the initial contact with the potential participants was made on the Internet. (Investigators may also send out questionnaires by mail and allow for Web-based data entry.)	Page 8
Advertising the survey	How/where was the survey announced or advertised? Some examples are offline media (newspapers), or online (mailing lists – If yes, which ones?) or banner ads (Where were these banner ads posted and what did they look like?). It is important to know the wording of the announcement as it will heavily influence who chooses to participate. Ideally the survey announcement should be published as an appendix.	Page 7-8
Web/E-mail	State the type of e-survey (eg, one posted on a Web site, or one sent out through e-mail). If it is an e-mail survey, were the responses entered manually into a database, or was there an automatic method for capturing responses?	Page 7-8
Context	Describe the Web site (for mailing list/newsgroup) in which the survey was posted. What is the Web site about, who is visiting it, what are visitors normally looking for? Discuss to what degree the content of the Web site could pre-select the sample or influence the results. For example, a survey about vaccination on a anti-immunization Web site will have different results from a Web survey conducted on a government Web site	NA as we used Qualtrics
Mandatory/voluntary	Was it a mandatory survey to be filled in by every visitor who wanted to enter the Web site, or was it a voluntary survey?	Page 7

Incentives	Were any incentives offered (eg, monetary, prizes, or non-monetary incentives such as an offer to provide the survey results)?	Page 7
Time/Date	In what timeframe were the data collected?	Page 8
Randomization of items or questionnaires	To prevent biases items can be randomized or alternated.	Page 7
Adaptive questioning	Use adaptive questioning (certain items, or only conditionally displayed based on responses to other items) to reduce number and complexity of the questions.	NA
Number of Items	What was the number of questionnaire items per page? The number of items is an important factor for the completion rate.	Page 7
Number of screens (pages)	Over how many pages was the questionnaire distributed? The number of items is an important factor for the completion rate.	Page 7
Completeness check	It is technically possible to do consistency or completeness checks before the questionnaire is submitted. Was this done, and if "yes", how (usually JAVAScript)? An alternative is to check for completeness after the questionnaire has been submitted (and highlight mandatory items). If this has been done, it should be reported. All items should provide a non-response option such as "not applicable" or "rather not say", and selection of one response option should be enforced.	NA Page 7
Review step	State whether respondents were able to review and change their answers (eg, through a Back button or a Review step which displays a summary of the responses and asks the respondents if they are correct).	Page 7
Unique site visitor	If you provide view rates or participation rates, you need to define how you determined a unique visitor. There are different techniques available, based on IP addresses or cookies or both.	NA
View rate (Ratio of unique survey visitors/unique site visitors)	Requires counting unique visitors to the first page of the survey, divided by the number of unique site visitors (not page views!). It is not unusual to have view rates of less than 0.1 % if the survey is voluntary.	NA
Participation rate (Ratio of unique visitors who agreed to participate/unique first survey page visitors)	Count the unique number of people who filled in the first survey page (or agreed to participate, for example by checking a checkbox), divided by visitors who visit the first page of the survey (or the informed consents page, if present). This can also be called "recruitment" rate.	NA
Completion rate (Ratio of users who	The number of people submitting the last questionnaire page, divided by the number of people who agreed to participate (or submitted the first survey page). This is only relevant if there is a separate "informed	NA

finished the survey/users who agreed to participate)	consent" page or if the survey goes over several pages. This is a measure for attrition. Note that "completion" can involve leaving questionnaire items blank. This is not a measure for how completely questionnaires were filled in. (If you need a measure for this, use the word "completeness rate".)	
Cookies used	Indicate whether cookies were used to assign a unique user identifier to each client computer. If so, mention the page on which the cookie was set and read, and how long the cookie was valid. Were duplicate entries avoided by preventing users access to the survey twice; or were duplicate database entries having the same user ID eliminated before analysis? In the latter case, which entries were kept for analysis (eg, the first entry or the most recent)?	NA
IP check	Indicate whether the IP address of the client computer was used to identify potential duplicate entries from the same user. If so, mention the period of time for which no two entries from the same IP address were allowed (eg, 24 hours). Were duplicate entries avoided by preventing users with the same IP address access to the survey twice; or were duplicate database entries having the same IP address within a given period of time eliminated before analysis? If the latter, which entries were kept for analysis (eg, the first entry or the most recent)?	Page 7
Log file analysis	Indicate whether other techniques to analyze the log file for identification of multiple entries were used. If so, please describe.	NA – IP addresses were used
Registration	In "closed" (non-open) surveys, users need to login first and it is easier to prevent duplicate entries from the same user. Describe how this was done. For example, was the survey never displayed a second time once the user had filled it in, or was the username stored together with the survey results and later eliminated? If the latter, which entries were kept for analysis (eg, the first entry or the most recent)?	NA
Handling of incomplete questionnaires	Were only completed questionnaires analyzed? Were questionnaires which terminated early (where, for example, users did not go through all questionnaire pages) also analyzed?	Page 8
Questionnaires submitted with an atypical timestamp	Some investigators may measure the time people needed to fill in a questionnaire and exclude questionnaires that were submitted too soon. Specify the timeframe that was used as a cut-off point, and describe how this point was determined.	Page 8
Statistical correction	Indicate whether any methods such as weighting of items or propensity scores have been used to adjust for the non-representative sample; if so, please describe the methods.	NA

This checklist has been modified from Eysenbach G. Improving the quality of Web surveys: the Checklist for Reporting Results of Internet E-Surveys (CHERRIES). J Med Internet Res. 2004 Sep 29;6(3):e34 [erratum in J Med Internet Res. 2012; 14(1): e8.]. Article available at

Appendix C_Survey Questionnaire

Introduction

Welcome to the Knowledge User Survey for the Risk of Bias in Network Meta-analysis (RoB NMA) tool project. This study is led by a steering group of international experts in tool development, bias and NMAs including: Drs Julian Higgins, Ian White, Sofia Dias, Argie Veroniki, Andrea Tricco, Penny Whiting, Jim Wright, Brian Hutton, and Carole Lunny.

This survey is part of a larger project to develop a risk of bias assessment tool for network meta-analyses (NMAs). The tool aims to assess bias with a focus on internal validity only: “a systematic error or deviation from the truth, in the summary estimates and/or conclusions”. This project is funded by a CIHR project grant (2021-2024).

The purpose of this survey is to ask users of NMAs and knowledge users about what type of tool for assessing an NMA would be most useful. We are also, optionally, giving you the opportunity to look at an initial list of risk of bias items for NMAs in case you think there are any items we may have missed.

Our study protocol and objectives can be found here.

If you have any questions or comments, please contact the principal investigator, Dr Carole Lunny at carole.lunny@ubc.ca

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Carole Lunny, MPH, PhD
Postdoctoral Fellow, Methodology and Research Synthesis
carole.lunny@ubc.ca
@carole_lunny

Instructions

Your answers to this survey will be used to inform the development of the tool. This survey is voluntary and you may

exit the survey at any time.

Survey Instructions

The survey has 15 questions in total. It should take you 10 minutes to complete sections 1 to 4. Section three is optional and asks you to read the list of items related to bias in NMAs and make suggestions of items not covered, and this may take considerable time depending on how much reflection and work you would like to do. You can skip through any question or section and submit your survey answers on the last page. You can send any comments to the primary investigator, Dr Carole Lunny at carole.lunny@ubc.ca

Data Protection Statement

All data collected in this survey will be stored anonymously and securely. We do not retain any personal data except with your permission. Cookies (i.e. personal data stored by your Web browser) are not used in this survey. We may quote your responses but they will not be attributed to you.

Block 2

Section One: Demographic Information

We would like to start by asking you a few questions about yourself and your work.

1. Indicate your current role (check all that apply)

- ☐ Health Technology Assessment (HTA) producer or specialist
- ☐ Funding agency representative
- ☐ Guideline developer
- ☐ Decision/policy maker
- ☐ Epidemiologist
- ☐ Independent researcher
- ☐ Academic
- ☐ Information scientist/medical librarian
- ☐ Systematic reviewer
- ☐ Clinician or allied health professional
- ☐ Statistician
- ☐ Research support
- ☐ Graduate student/postdoctoral researcher
- ☐ Journal editor
- ☐ Other, please specify:

2. What is your primary affiliation?

- ○ University
- ○ Non-profit organization (e.g., NGO, charity)
- ○ Research institute
- ○ University hospital
- ○ Government
- ○ Hospital
- ○ For-profit private organization (e.g. industry)
- ○ Other, please specify:

3. In which geographic location do you reside?

- ○ North America/Central America
- ○ South America
- ○ Europe
- ○ Africa
- ○ Asia
- ○ Australia
- ○ Caribbean Islands
- ○ Pacific Islands
- ○ Prefer not to say
- ○ Other, please specify:

4. What organization or institution do you work for? Please leave this blank if you would like to remain anonymous.

5. Does your organization or institution (or work colleagues) produce systematic reviews with network meta-analysis?

- ○ Yes
- ○ No
- ○ Unsure

6. Have you used systematic reviews with network meta-analyses as a source of evidence in decision making?

- ○ Yes
- ○ No
- ○ Unsure

7. Have you, or your organization/institution, used a systematic reviews with network meta-analysis in your work?

- ○ No
- ○ Unsure
- ○ Yes; if yes, please describe how you used the review:

8. If you have used one or more systematic reviews with NMA in your work, did you use:

- ○ Individual analysis results from the NMA to draw your own conclusions (e.g. pooled effect estimate from one outcome, rank order of a treatment)
- ○ The NMA authors' conclusions
- ○ Used both individual results and conclusions

Block 3

Section Two: Design of the RoB NMA tool

If a review is affected by bias, the results and/or conclusions may be misleading, and not doing a good job of telling the 'truth' about the real difference between an intervention and a control or comparator. In this section we would like to know what sort of tool might be useful to you or your organization.

What type of bias?:

Option A) Bias in results of an individual NMA

Network meta-analysis of effect estimates from primary studies can result in over-estimation or under-estimation of the effects of specific interventions against specific comparators. One option for the tool is to focus on the numeric results of the NMA (including results around intervention rankings). This is the approach taken in tools such as the RoB 2 tool for assessing risk of bias randomized trials and can be accessed here.

Option B) Bias in the conclusions of an NMA

An alternative is to consider bias in the interpretation of the NMA within the wider context. Bias may be introduced when interpreting the NMA results to draw conclusions (for example, conclusions may not be supported by the evidence presented, the relevance of the included primary studies may not have been considered by NMA authors, and reviewers may inappropriately emphasize results on the basis of their statistical significance). Alternatively, potential biases identified in the results of the NMA might be addressed appropriately when drawing conclusions. A well-conducted systematic review draws conclusions that are appropriate to the included evidence and can therefore be free of bias even when the primary studies included in the review have high risk of bias. This is the approach taken in tools such as the ROBIS tool for assessing risk of bias in systematic reviews and can be accessed here.

9. Which option do you prefer?

- ○ Option A
- ○ Option B
- ○ Both option A and B
- ○ Other, please comment:

10. The RoB NMA tool will be used to assess the methodological features known to increase the risk of bias in the results and/ or the NMA's conclusions. Would you prefer a tool to assess the bias in the individual analysis results of an NMA, or the NMA authors conclusions?

- ○ Assess risk of bias in the individual analysis results
- ○ Assess risk bias in the NMA authors conclusions
- ○ Both individual results and authors conclusions
- ○ Other (please specify)

11. Would you use a risk of bias tool to assess an NMA (if you had received adequate training on how to use it)?

- ○ Yes
- ○ No
- ○ Unsure

12. If you were to use our new RoB NMA tool, how would you use the results of your risk of bias assessment? (Open ended question)

Block 4

Section Three: Additional NMA bias items (Optional)

This section is optional and asks you to read the list of items related to bias in NMAs and make suggestions of items not covered.

The RoB NMA tool is intended to be used as an extension to the ROBIS tool to assess the risk of bias in systematic reviews. ROBIS (Risk Of Bias In Systematic reviews) is designed to assess the risk of bias in reviews with or without pairwise meta-analysis. The ROBIS tool involves the assessment of methodological features in reviews known to increase the risk of bias categorised into four domains (study eligibility criteria; identification and selection of studies;

data collection and study appraisal; and synthesis and findings). Hence, the items in the RoB NMA tool do not focus on general systematic review methods. For example, an item about the process of selecting studies is not needed as it is about general systematic review methods. Some item concepts might be similar to a ROBIS item but may need additional guidance for NMAs. In this case, we will include the concept.

13. A list of concepts (i.e. items) potentially related to bias in NMAs can be accessed here. Do not be concerned about the wording of the item. We are only concerned about the concept the item conveys.

If you would like to read through the list and make any suggestions for concepts related to biases in NMAs that are important to you but are not covered, please add them in the box here:

Block 5

Section Four: Interest and engagement in development, piloting, dissemination and training

14. How much in interest do you have in a tool for appraising the risk of bias in NMAs?

- ○ High interest
- ○ Low interest
- ○ No interest

15. Please indicate your interest in being further engaged in this project (select all that applies):

- ☐ Being on an email list to receive project updates
- ☐ Being involved in piloting a new tool to assess the risk of bias in NMAs
- ☐ Receiving training in using the new tool
- ☐ Reading the final study reports
- ☐ Disseminating the research
- ☐ No interest in being further involved
- ☐ Other (please specify)

If you are interested in being further involved, please sign up for email updates here.

Appendix D: List of organizations and institutions producing NMAs

Organisation	website
Cochrane Multiple Treatments Methods Group	https://methods.cochrane.org/methods-groups
Campbell Collaboration	https://campbellcollaboration.org
Joanna Briggs Intitute	https://joannabriggs.org
Guidelines International Network	https://g-i-n.net/home
U.S. Agency for Healthcare Research & Quality's Evidence-based Practice Centre program	
Centre for Reviews and Dissemination	https://www.york.ac.uk/crd/
Canadian Agency for Drugs and Technologies in Health	https://www.cadth.ca
Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre)	https://eppi.ioe.ac.uk/cms/
Centre for Implementation Research at the Ottawa Hospital Research Institute	http://www.ohri.ca/cir/
CINeMA – Confidence in network meta-analysis	https://cinema.ispm.unibe.ch/

Appendix E: Email invitation describing the purpose of the knowledge user survey

Dear everyone,

We are launching a knowledge user survey today to ask users of network meta-analyses (NMAs) and knowledge users about what type of tool for assessing the risk of bias in NMAs (RoB NMA tool) would be the most useful. The survey will take approximately *10 minutes* of your time. Everyone is welcome to participate in the survey -- this includes those who know little to none about NMAs as well as experts in the field. We are just trying to get a feel for the interest in our tool.

This survey is part of a larger project to develop a risk of bias assessment tool for reviews with network meta-analysis (RoB NMA tool). The tool aims to assess bias with a focus on internal validity only: "a systematic error or deviation from the truth, in the summary estimates and/or review conclusions".

Follow this link to the Survey:
Take the Survey
Or copy and paste the URL below into your internet browser:
https://ubc.ca1.qualtrics.com/jfe/form/SV_892nehjUTOmXTh4?Q_CHL=email
The survey will be running from today, June 28th, to August 1st, 2021.

Here are a few things you can do to help promote our survey:

- Forward this email with the survey link to any colleagues you think might be interested
- Re-tweet/share our survey on your Twitter feed, Facebook page, LinkedIn, and other social media outlets
- Share the knowledge user survey in your newsletter or internal email list

Thank you for your interest, and any questions or comments can be directed to the principal investigator, Dr. Carole Lunny, at carole.lunny@ubc.ca

Kind regards,
Dr. Carole Lunny and Team

Carole Lunny, MPH, PhD
Postdoctoral Fellow, Methodology and Research Synthesis
carole.lunny@ubc.ca
Twitter: @carole_lunny

Appendix F: Knowledge translation plan for dissemination of the knowledge user survey

Project title	NMA Risk of Bias Tool and surveys
Project description	The risk of bias in NMAs tool is designed to provide knowledge users (i.e., methodologists, statisticians, peer reviewers, professors, guideline developers, policy-makers, researchers more broadly) a framework for assessing risk of bias in network meta-analyses. A proposed supplementary training materials/resource package is intended to build the knowledge needed to use the tool.
What is your overall timeline for dissemination?	2-3 weeks total for the surveys and final tool: • Build anticipation for upcoming tool launch 1 week before the launch; • launch tool; • 1 week post launch of tool
Describe dissemination goal (consult with PI or manager as required)	To make knowledge users aware of the tool and support use of the tool. To support uptake of the tool, training on Risk of Bias in Network Meta-Analysis is needed.
What are your GENERAL key messages?	"We have developed a tool and supporting resources to help users assess risk of bias in network meta-analyses.
What product would you like to share?	Tool & article (article explains the tool) Training resources on: Risk of Bias in NMAs
What would you like your target audience to do with the tool? (e.g., use the tool, read the article, etc.)	Understand how to use the tool Use the tool in their work/projects Disseminate the tool Pilot the tool
Dissemination strategies (e.g., post on website, send through a newsletter, email knowledge users)	- Individual Email informing about the surveys and final tool - Twitter - Newsletters (e.g., KT Canada. Identify relevant newsletters for target audiences) – ADD Organizations Websites announcements (KTP, …) - *Publish tool as a pre-print* - *Seek editorials in journals that publish NMAs* - *Get the tool included in the Cochrane handbook (i.e., chapter on NMAs)* - *Discuss with agencies conducting NMAs to use/cite tool in their guidance*
What materials need to be developed to help with dissemination (e.g., email, newsletter blurb)?	- Individual and organizational emails (mail merge) - Multiple scheduled tweets; twitter cards; targeted hashtags; - Newsletter blurb with possible image - Website announcements (can be tailored from newsletter blurb)

Appendix G: Twitter Campaign for knowledge user survey

General Hashtags:

#riskofbias
#NetworkMetaAnalysis
#kmethodologist
#statistician
#healthresearch
#epitwitter (phase 2 dissemination)
#medtwitter (phase 2 dissemination)

Hashtag for Tool: #NMARoBTool
*Add hashtags where they fit in naturally within the text, then add additional relevant hashtags at the end of tweet if character count permits (e.g. at end of tweet, append "#cdnhealth #knowledgetranslation")

Twitter Thread (both tweets meet the character count)
First tweet in thread:
knowledge user survey for the RoB NMA tool
@carole_lunny and team are leading the development of a new Risk of Bias for Network Meta-analysis tool (called the RoB NMA tool)! Take part in our knowledge user survey and have your say in how the #NMA tool should be developed! Funded by #CIHR
Link: https://tinyurl.com/tsbr2zcy
1/2"

Second tweet in thread:
"This study is led by Drs. Julian Higgins, Ian White, Sofia Dias, Argie Veroniki, Andrea Tricco, Penny Whiting, Jim Wright, Brian Hutton, and Carole Lunny. This project is funded by a CIHR project grant (2021-2024).
2/2"

Twitter handles:
@kt_program @JennAnnWatt @DrMroz @BCSUPPORTUnit @gba_de @thoefer73 @VMinogue2 @meggomango @bjampoh @ubc @ubcnews @ubc @UofT @CADTH_ACMTS @NICE_DSU @naci @ATricco @sdias_stats @AVeroniki @jmwright4 @Geointheworld @BH_epistat @tweetastevens @bobnakagawa @lorenzomoja @cochranecollab @LucyHenryOtt @WHO @HTAiOrg @Drug_Evidence @SPORAlliance

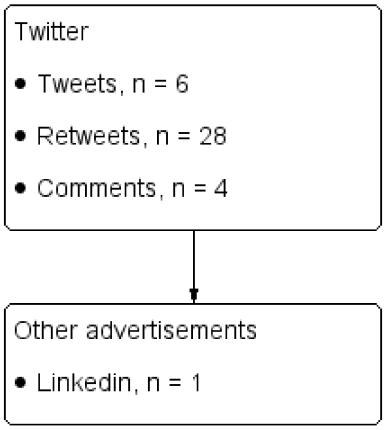
@cochrane_US @mjpages @METRICStanford @MetaEvidence @CampbellUKIRE @JBI_EI @HEI_mcmaster @GRADE_McMaster @OttMethodsCentr @metaEvidenceOrg @methodsctr @METRIC_Berlin @KSR_SysRev @SysReviews @EPPIReviewer @rapidreviews_i @campbellreviews @CochraneHTN

@cochranemthds @James_M_Thomas @OttMethodsCentr @CochraneCanada @cochranecollab @CochraneRRMG @CochraneSGMG

Appendix H: Flowchart of social media ads sent

Six tweets were sent out which resulted in 28 retweets and 4 comments. One LinkedIn advertisement was sent out.

Flowchart: Social media advertisements to advertise the survey



Appendix I: Summary of results of the open-ended questions from the knowledge user survey

Appendix Table 1: How NMAs are used in a knowledge users work

How NMAs are used in a knowledge users' work	Frequency	Quotes
Produced NMAs	31	"My centre regularly conducts SRs, including NMA, IPD."
Inform clinical decision making	35	"Have read few NMAs related to my clinical practice and implemented evidence-based on that" "Majorly for finding the effective and tolerable treatments for diseases, when there are no head to head data available"
Inform guideline development, HTAs, or policy decisions	52	"In some of the systematic reviews my organisation does to inform clinical practice guidelines, we have used existing systematic reviews with network meta-analyses to report the quantitative benefits of interventions as well as to determine GRADE ratings for the certainty of the evidence. " "For drug approval and reimbursement and to inform benefit-risk, medical strategy, and the scientific narrative." "NMA have been used for decision-making, to incorporate health technologies in the XXX public health system" "We evaluate medicines candidate to the WHO Model List of Essential Medicines. Some medicine dossiers are largely based on results of NMA."
Inform academic research	35	"Developing background for grant applications and manuscripts; support when writing SR and NMA protocols; conducting SR with NMA" "Discussion and presentation in a journal club for clinicians" "Exploration of evidence-base to inform further studies"
Teaching	5	"Class discussions, for class presentation, in Critical Appraisal exercises and Tutorials. I teach the EBM component of the MMED 1 Curriculum"
Included and used in an 'overviews of reviews'	4	"Consideration in reviews of reviews on tobacco cessation," "If conducting a review of reviews, existing SRs and NMAs would be included by our protocol and incorporated into the synthesis."
Update the registries, databases or websites	2	"XXX is a registry of quality-appraised systematic reviews on the effectiveness and cost-effectiveness of public health interventions/policies. We regularly update our database with new reviews and have been including more and more NMAs."
Economic modelling	5	"NMAs are part of sponsor submissions to the Common Drug Review or Oncology Drug Review process. They are used in economic modelling." "We conducted NMAs to identify likely most effective technologies and to input into cost-utility analyses. We used data from published NMAs to inform economic model parameters."

*Numbers do not add up because participants could provide more than one response.

Comments on whether bias in the individual results of NMA, or authors conclusions were preferred

When asked to comment on whether they preferred a tool to (i) assess bias in the individual results of NMA, or (ii) authors conclusions, 19 out of 249 people commented. Comments in **Appendix Table 2** show that most participants believe both are important.

Appendix Table 2: Knowledge user ' belief in the importance of a tool to assess bias in the individual results of NMA (option A), or authors conclusions (option B) (n = 249)

Themes	Frequency	Quotes
Bias in the individual results of NMA is more important	7	"Option B is superior to option A- as the context of the information is important. However, if seeking the least biased evidence to a clinical question, we also over promote individual studies (within the larger context of the body of evidence) that are from primary care (our home) represent our patients and have meaningful outcomes" "we would tend only to make use of the results and not the interpretation (and combine that with our own assessment of the bias/applicability of the studies) and therefore option B is less directly relevant to the work we do."
Applicability (external validity) should be assessed	2	"Bias should be evaluated with respect to both internal validity and applicability (external validity) to the review question."
Both important	11	"It would depend on the research question I was dealing with. There may be situations when I want to consider the components of an NMA, and other situations when I want to consider NMA as a whole " "Personally I would probably err towards A, i.e. assessing the risk of bias in the statistical results produced by the NMA. However an assessment of bias in the conclusion is also important a) for its own sake and b) as an indicator of the reliability of the NMA as a whole. So I would probably go for for maybe 60% of the questions focusing on A, and 40% on B." "Both option A and B depending on the objective (relating to previous question): Option A if specific results are of interest, Option B if conclusions are relevant or in meta-research. Maybe the tool could consist of both elements and require the researcher to make the aim of the use of the NMA RoB tool transparent (evaluate results, conclusions, or both)." "There are circumstances were option B would have value (for example, when a paper is being peer-reviewed these sorts of considerations would be important)."
Authors conclusions not useful for clinical practice	1	"I think both have merits but option B is not super useful in practice." "I strongly oppose relying on the conclusions of the NMA itself in anyway. There are so many inexperienced individuals conducting NMA and such a horrendous peer review process (assuming that this is due to limited qualified individuals to perform peer review) that I would strongly urge you not to pursue option B which is likely to be of limited value."

*Numbers do not add up because participants could provide more than one response.

Appendix Table 3: Knowledge user' use of a completed NMA risk of bias assessment (n = 145)

Themes	Frequency	Quotes
Inform a policy brief, HTA, clinical practice guideline, or other policy related documents.	22	"This can help methodologist supporting decision-makers to document the risk of bias of selected literature informing a policy brief, or other policy related documents."

To distinguish between NMAs at high or low risk of bias	24	"When using multiple systematic reviews including both pairwise or NMA, the ones using NMA will also be evaluated for risk of bias, and perhaps, determine the most appropriate NMA to inform a particular decision." "Using the RoB NMA tool would reinforce my confidence in NMA results, being these at high or low risk of bias. This would increase the independence of my conclusions from authors' conclusions - basically I will have more chance to form my opinion as a second opinion."
Help producers of NMAs identify issues that may introduce bias (e.g. written in the limitations section of an NMA or a protocol)	16	"It can serve researchers conducting systematic reviews with NMA to be explicit about issues that can introduce bias and avoid them or address them accordingly." "I would discuss them within/after limitations of a NMA." "I would use it to guide the design, implementation and interpretation of my own NMAs"
Help in clinical decision making	1	It can help clinicians who are interested in reading systematic reviews including NMA, by giving them orientation as to what are the factors to consider.
Conduct sensitivity, subgroup or meta-regression analysis	12	"I would use the results of RoB assessments to perform sensitivity analyses (e.g., excluding studies with high RoB), and to determine the certainty of evidence." "We can use this to run some sensitivity analyses or meta-regression to check robustness. Furthermore, in case of high biasness, it could be added as one of the limitations for the review"
Used in the production of 'overviews of reviews'	12	"We often conduct overviews of reviews, therefore a critical appraisal of the included systematic reviews is necessary. Unfortunately, the actual tools for assessing the quality or risk of bias of the NMAs are not satisfying. We would use the RoB NMA tool similarly to NMA as we use the tools ROBIS or AMSTAR2 for the critical appraisal of systematic reviews."
When assessing the certainty in the body of evidence (e.g. using CINeMA, GRADE, or threshold approach)	32	"In assessment of the certainty of the evidence. I would hope that explanations on how to use this together with (or if possible/applicable, in replacement of) individual study ROB results would be available." "We would use it to inform the RoB assessments in the NMAs to judge the certainty in the evidence" "We would use the resalts of the ROB assessment in judging ROB in GRADEpro"
Integrated into the results, interpretation, and conclusions of an NMA, overview of reviews, HTA, or guideline	26	"Draw my own conclusions based on potential for RoB in individual analyses." "I would use it as is recommended in the Cochrane systematic review guidance. Specifically, I would include the result when reporting the results and translate it to 'quality of evidence'."
Peer reviewing or editorial decisions	4	"Peer review"; "Perhaps as co-author or reviewer of a paper that uses NMA"
To inform future research	8	"For future reviews, to know how to consider the results"
In academic research	7	"For methodological research, to compare NMAs" "In conducting our own research, including the development of future research questions, and in writing discussions in our own papers." "Perhaps considering the results of meta-epidemiologic analyses to establish priors that minimize the effect of bias in the ranking"

When teaching research methods	1	"To inform editorial decisions; when teaching research methods and interpretation; when designing SR+NMA protocols"

*Numbers do not add up to the respondent's comments because participants could provide more than one response.

Appendix Table 4: Interest and engagement activities (n= 231)

Activities	Frequency
Being involved in piloting a new tool to assess the risk of bias in NMAs	115
Disseminating the research	70
Reading the final study reports	153
Receiving training in using the new tool	140
Being on an email list to receive project updates	147
No interest in being further involved	19
Other	11

*Numbers do not add up to the respondent's comments because participants could provide more than one response.

Appendix J: Flowchart from recruitment of the Delphi rounds