| **Section and Topic** | **Item #** | **Checklist item** | **Location where item is reported** |
| --- | --- | --- | --- |
| **TITLE** | | |  |
| Title | 1 | Identify the report as a systematic review. | 1 |
| **ABSTRACT** | | |  |
| Abstract | 2 | Provide a structured summary including, as applicable:  Background: main objectives  Methods: data sources; study eligibility criteria, participants, and interventions; study appraisal; and synthesis methods, such as network meta-analysis.  Results: number of studies and participants identified; summary estimates with corresponding confidence/credible intervals; treatment rankings may also be discussed. Authors may choose to summarize pairwise comparisons against a chosen treatment included in their analyses for brevity.  Discussion/Conclusions: limitations; conclusions and implications of findings.  Other: primary source of funding; systematic review registration number with registry name. | 2 |
| **INTRODUCTION** | | |  |
| Rationale | 3 | Describe the rationale for the review in the context of what is already known, including mention of why a network meta-analysis  has been conducted. | 2-4 |
| Objectives | 4 | Provide an explicit statement of questions being addressed, with  reference to participants, interventions, comparisons, outcomes, and study design (PICOS). | 2-4 |
| **METHODS** | | |  |
| Eligibility criteria | 5 | Indicate whether a review protocol exists and if and where it can be accessed (e.g., Web address); and, if available, provide registration  information, including registration number. | 5 |
| Information sources | 6 | Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale. Clearly describe eligible treatments included in the treatment network, and  note whether any have been clustered or merged into the same node (with justification). | 5 |
| Search strategy | 7 | Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched. | 5 |
| Selection process | 8 | Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated. | 5，Appendix 1 |
| Data collection process | 9 | State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis). | 5-6 |
| Data items | 10a | Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and  confirming data from investigators. | 5-6 |
| 10b | List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information. | 5-6 |
| Study risk of bias assessment | 11 | Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in  any data synthesis. | 6 |
| Effect measures | 12 | State the principal summary measures (e.g., risk ratio, difference in means). Also describe the use of additional summary measures assessed, such as treatment rankings and surface under the  cumulative ranking curve (SUCRA) values, as well as modified approaches used to present summary findings from meta-analyses. | 7 |
| Synthesis methods | 13a | Describe the methods of handling data and combining results of studies for each network meta-analysis. This should include, but not be limited to:   * Handling of multi-arm trials; * Selection of variance structure; * Selection of prior distributions in Bayesian analyses; and   Assessment of model fit. | 6-7 |
| 13b | * Describe the statistical methods used to evaluate the agreement of direct and indirect evidence in the treatment network(s) studied. * Describe efforts taken to address its presence when found. | 6-7 |
| 13c | * Specify any assessment of risk of bias that may affect the * cumulative evidence (e.g., publication bias, selective reporting within studies). | 6-7 |
| 13d | * Describe methods of additional analyses if done, indicating which were pre-specified. This may include, but not be limited to, the following: * Sensitivity or subgroup analyses; * Meta-regression analyses; * Alternative formulations of the treatment network; and * Use of alternative prior distributions for Bayesian analyses (if applicable). | 6-7 |
| 13e | Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression). | 7 |
| 13f | Describe any sensitivity analyses conducted to assess robustness of the synthesized results. | 7 |
| Reporting bias assessment | 14 | Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases). | 7 |
| Certainty assessment | 15 | Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome. | 7 |
| **RESULTS** | | |  |
| Study selection | 16a | Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage,  ideally with a flow diagram. | 8 |
| 16b | Provide a network graph of the included studies to enable visualization of the geometry of the treatment network. | 8-9 |
| Study characteristics | 17 | For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations. | 8-9，Appendix 3 |
| Risk of bias in studies | 18 | Present assessments of risk of bias for each included study. | 8-9 |
| Results of individual studies | 19 | For all outcomes considered (benefits or harms), present, for each  study: 1) simple summary data for each intervention group, and 2) effect estimates and confidence intervals. Modified approaches may | 8-10 |
| Results of syntheses | 20a | Present results of each meta-analysis done, including confidence/credible intervals. In larger networks, authors may focus on comparisons versus a particular comparator (e.g., placebo or standard care), with full findings presented in an appendix. League tables and forest plots may be considered to summarize pairwise comparisons. If additional summary measures were explored (such  as treatment rankings), these should also be presented. | 8-10,  Table 2 |
| 20b | Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect. | 8-10 |
| 20c | Present results of all investigations of possible causes of heterogeneity among study results. | 6-7 |
| 20d | Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results. | 6-7 |
| Reporting biases | 21 | Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed. | 9 |
| Certainty of evidence | 22 | Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed. | 6-7 |
| **DISCUSSION** | | |  |
| Discussion | 23a | Summarize the main findings, including the strength of evidence for  each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy-makers). | 10 |
| 23b | Discuss limitations at study and outcome level (e.g., risk of bias), and at review level (e.g., incomplete retrieval of identified research, reporting bias). Comment on the validity of the assumptions, such as  transitivity and consistency. Comment on any concerns regarding network geometry (e.g., avoidance of certain comparisons). | 10-11 |
| 23c | Discuss any limitations of the review processes used. | 10-11 |
| 23d | Discuss implications of the results for practice, policy, and future research. | 10-11 |
| **OTHER INFORMATION** | | |  |
| Registration and protocol | 24a | Provide registration information for the review, including register name and registration number, or state that the review was not registered. | 4 |
| 24b | Indicate where the review protocol can be accessed, or state that a protocol was not prepared. | 4 |
| 24c | Describe and explain any amendments to information provided at registration or in the protocol. | 4 |
| Support | 25 | Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review. | 12 |
| Competing interests | 26 | Declare any competing interests of review authors. | 12 |
| Availability of data, code and other materials | 27 | Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review. | 12 |

*From:*  Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

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