### MOOSE Guidelines for Meta-Analyses and Systematic Reviews of Observational Studies*

| Topic                                      | Page number |
|--------------------------------------------|-------------|
| **Title**                                  | 02          |
| Identify the study as a meta-analysis (or systematic review) |            |
| **Abstract**                               | 03          |
| Use the journal’s structured format        |             |
| **Introduction**                           | 04          |
| Present:                                   | 05          |
| The clinical problem                       |             |
| The hypothesis                             |             |
| A statement of objectives that includes the study population, the condition of interest, the exposure or intervention, and the outcome(s) considered | 05          |
| **Sources**                                | 05          |
| Describe:                                  | 05-06       |
| Qualifications of searchers (e.g., librarians and investigators) | 05-06       |
| Search strategy, including time period included in the synthesis and keywords | 05-06       |
| Effort to include all available studies, including contact with authors | 05-06       |
| Databases and registries searched          |             |
| Search software used, name and version, including special features used (e.g., explosion) | 05-06       |
| Use of hand searching (e.g., reference lists of obtained articles) | 05-06       |
| List of citations located and those excluded, including justification | 06-06       |
| Method of addressing articles published in languages other than English | 06          |
| Method of handling abstracts and unpublished studies | 06          |
| Description of any contact with authors    | N/A         |
| **Study Selection**                        | 06          |
| Describe:                                  | 06          |
| Types of study designs considered          |             |
| Relevance or appropriateness of studies gathered for assessing the hypothesis to be tested | 06          |
| Rationale for the selection and coding of data (e.g., sound clinical principles or convenience) | 06          |
| Documentation of how data were classified and coded (e.g., multiple raters, blinding, and inter-rater reliability) | 07-08       |
| Assessment of confounding (e.g., comparability of cases and controls in studies where appropriate) | N/A         |
| Assessment of study quality, including blinding of quality assessors; stratification or regression on possible predictors of study results | 07-08       |
| Assessment of heterogeneity                |             |
| Statistical methods (e.g., complete description of fixed or random effects models, justification of whether the chosen models account for predictors of study results, dose-response models, or cumulative meta-analysis) in sufficient detail to be replicated | 07-08       |
| **Results**                                | 09-14       |
| Present:                                   |             |
| A graph summarizing individual study estimates and the overall estimate | 09-14       |
| A table giving descriptive information for each included study | 09-14       |
| Results of sensitivity testing (e.g., subgroup analysis) | 09-14       |
| Indication of statistical uncertainty of findings | 09-14       |
| **Discussion**                             | 09-14       |
| Discuss:                                   |             |
| Strengths and weaknesses                   | 9-10        |
| Potential biases in the review process (e.g., publication bias) | 13          |

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| Assessment of quality of included studies | 15 |
| Consideration of alternative explanations for observed results | 15 |
| Generalization of the conclusions (ie, appropriate for the data presented and within the domain of the literature review) | 15 |
| Guidelines for future research | 15 |
| Disclosure of funding source | 15 |

*Modified from Stroup DF, Berlin JA, Morton SC, Olkin I, Williamson GD, Rennie D, et al. Meta-analysis of observational studies in epidemiology: a proposal for reporting. Meta-analysis Of Observational Studies in Epidemiology (MOOSE) group. JAMA 2000;283:2008–12. Copyrighted © 2000, American Medical Association. All rights reserved.