



EVIDENCE SYNTHESIS
IRELAND



Cochrane
Ireland

Evidence Synthesis Ireland Fellowship Scheme

Review Identification Form

Review Centre/Group Mentors

Dr. Andrea Tricco – lead mentor (SPOR Evidence Alliance, Unity Health Toronto)
Dr. Jennifer Watt
Dr. Areti Angeliki Veroniki

Review title

Methods for deriving prediction intervals in meta-analysis and network meta-analysis and enhancing their clinical readability and uptake: A scoping review

Review type

Scoping review

Review information

This research uses an integrated knowledge translation approach, whereby the review question was developed collaboratively with knowledge users (that is, clinicians) who will be involved throughout the review process (protocol development, review steps, and results dissemination). We will also engage patient-partners in all aspects of the research process, tailored to their interests, preferences, and availability. Our integrated knowledge translation approach (including patient-partners and clinicians) and established networks of content experts, methodologists, and statisticians (e.g., through the Strategy for Patient Oriented Research [SPOR] Evidence Alliance) will help us to disseminate review results, which will help clinicians, patients, and policymakers make better informed decisions.

Review details

Question (Population, concept, context [PCC]): What methods have been developed to derive prediction intervals from pairwise and network meta-analysis models and enhance the clinical readability and uptake of prediction intervals in any population or context?

Objectives: To identify published and unpublished studies describing methods for (1) deriving prediction intervals from pairwise and network meta-analysis models and (2) enhancing the clinical readability and uptake of prediction intervals.

A prediction interval is the interval within which the true intervention effect of a new study is expected to fall. The Cochrane Handbook recommends that a prediction interval should be reported alongside a confidence interval and between-study heterogeneity to allow more informative inferences in meta-analyses. However, different methods (e.g., study-specific and summary level derivations) to calculate a prediction interval have different properties (e.g., statistical coverage [i.e., the proportion of times the new treatment effect is found to lie in the derived prediction interval]), which can lead to inaccurate results and hence impact decision-making. This review is being undertaken at the request of clinicians who want to better understand how prediction intervals are derived and how prediction intervals can improve clinical decision-making. Review results will identify methods for deriving prediction intervals that can be implemented by multidisciplinary teams (including content experts, methodologists, and statisticians) to help clinicians (and other knowledge users) better predict whether an intervention will improve outcomes for patients in their practice. Properties in terms of coverage probability, width and heterogeneity estimator used, of the different methods will be explored. This scoping review is in the protocol development stage, and we have not begun any review steps; a fellow will have the opportunity to lead and/or participate in all review steps, work alongside leading international experts in Knowledge Synthesis and Knowledge Translation, and obtain experience in a multidisciplinary team. We will conduct our scoping review as per the JBI reviewers' manual and report findings as per PRISMA for scoping reviews.

Review current status

Protocol development (not yet registered on PROSPERO)

Specific/desirable requirements for Fellow:

Experience in completing systematic or scoping reviews (required)

Experience in conducting meta-analysis (required)

Clinical experience in any healthcare discipline (an asset)

Knowledge of R software (an asset)

Experience in conducting network meta-analysis (an asset)

Estimated start and completion dates

Estimated start date: July 2022

Estimated completion date: June 2024