

# TERMINOLOGY MANAGEMENT IN GUIDELINE DEVELOPMENT: EARLY VERSUS LATE BINDING OF SYNONYMS

## BACKGROUND

When synthesizing evidence during guideline development, one common issue is the multitude of terminology in primary research that varies by country, therapeutic area, researcher, time etc.

### The current standard practice for data abstraction involves:

- Application of oftentimes arbitrary decisions to group (or “bind”) terms under a single construct term
- Making decisions during or prior to abstraction (“early binding”) using subjective or poorly defined criteria to decide which single term to use.

Early binding does not allow for transparent review of authors' source language or the context (i.e., definitions or descriptions) and are therefore not easily restorable after abstraction.

## DESCRIPTION OF BEST PRACTICE

A software solution that provides:

- The ability to combine terms under a single construct after abstraction (“late binding”) while preserving study authors' original terminology and context (term definitions)
- **Flexibility in how terms are combined to allow for different ontology profiles as relevant for unique evidence syntheses (meta-analyses, sensitivity/subgroup analyses, data tabulation or visualizations)**
- No loss of this flexibility over time or across datasets
- Single clickability of a study term to view the authors' definition of the term in context to facilitate binding decision-making
- Utilization of existing taxonomies for efficient binding of any specific data set at any given time
- Machine learning based on previous bindings to suggest or (semi)automate bindings based on past bindings or existing taxonomies
- Complete transparency

## CONTEXT

Consider even a relatively modest review of 20 studies with 5 outcomes and 5 population characteristics for abstraction. If synonym management is done prior to or during abstraction, minor differences in terminology and context could amount to dozens of decisions made by those abstracting data with little transparency or traceability. In cases where terms are true synonyms or where context or definitions are similar, this may not represent a problem. However, different terms representing what is thought to be the same construct are often bound together using subjective and poorly defined criteria.

**We believe that the preservation of author-reported terms and context—using a software platform with late binding methodology with flexibility and transparency—is vital to accurate medical terminology management during systematic review and guideline development.**

## LESSONS FOR GUIDELINE DEVELOPERS, ADAPTERS, IMPLEMENTERS AND/OR USERS

Traditional ontology management with early binding reduces transparency in decisions for combining terms.

Late binding ontology management enables:

- Data to be captured, stored, and indexed “as is” in the literature
- **Terms to be bound after abstraction allowing bound terms to be unbound or rebound as appropriate for specific use cases or syntheses (important for living guideline development)**
- A variety of medical ontologies to be used when opinions differ or where terminology differences may have important implications
- Increased transparency, traceability and ultimately trust in the evidence review process.