How to: Undertake a Literature Review

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In the fourth installment of our "How-to" series, Lumanity's Andrea Garcia and Khushboo Gurjar discuss the importance of conducting a literature review. They highlight two key approaches, unpacking their unique methodologies, practical applications, and how each can be leveraged to effectively achieve your research goals.

What is a literature review?

The pharmaceutical and healthcare industries increasingly depend on robust evidence to guide decisions across the drug development and commercialization lifecycle. At the heart of this evidence generation lies the literature review. A literature review is a structured evaluation of existing evidence, designed to identify, evaluate, and synthesize peer-reviewed evidence relevant to specific research objectives. These objectives may range from understanding the burden of disease to evaluating therapeutic interventions or analyzing clinical and economic outcomes.

Among these, Systematic Literature Reviews (SLRs) and Targeted Literature Reviews (TLRs) stand out as complementary approaches, each offering distinct advantages depending on the scope, depth, and rigor required.

SLR: The Gold Standard for Evidence

SLRs involve systematic identification, evaluation, and synthesis of all relevant evidence to address a specific research question. This is achieved by using a pre-defined search strategy that is followed by two independent reviewers and agreed upon in a pre-defined protocol. This method ensures transparency, reproducibility, and reduces bias, thus meeting the highest standards for evidence generation.

TLR: A Focused Approach

TLRs offer a streamlined method to address specific research questions. With targeted searches and single-reviewer screening, they prioritize efficiency while providing valuable insights. TLRs are suited for exploring treatment landscapes, epidemiology, or generating early research inputs.

The table overleaf provides guidance on selecting the most suitable literature review methodology by comparing the key steps involved in TLRs and SLRs while aligning with regulatory, market access, or clinical development objectives. To effectively conduct a literature review, selecting the appropriate methodology is critical to achieving research objectives. Whether addressing focused research questions or generating comprehensive evidence for regulatory or market access purposes, the choice between a TLR and an SLR depends on the scope, rigor, and resources required. The table also compares the key steps, strengths, and applications of TLRs and SLRs to help select the right approach.

Why is it important to undertake a literature review?

A structured literature review is essential - and sometimes required - for generating reliable, actionable insights that adhere to scientific rigor and support informed decision-making. By evaluating and synthesizing evidence, literature reviews play a critical role in:

Informing Research Development: support key decisions across all stages of clinical development, from identifying unmet medical needs to guiding clinical trial design, selecting endpoints, and defining the patient and target product profile

Gaining a Competitive Edge: provide critical insights to support value proposition development, health economic models, and market access strategies, ensuring competitive advantage in an evidence-driven environment

Establishing the Knowledge Landscape: Identify gaps in treatment landscapes or epidemiological data for further exploration.

Supporting Health Technology Assessment (HTA) and Regulatory Submissions: essential components of HTA and regulatory submissions.

Enabling Health Economics and Outcomes Research (HEOR) Workstreams: supply critical inputs for indirect treatment comparisons (ITCs), economic evaluations, and global value dossiers
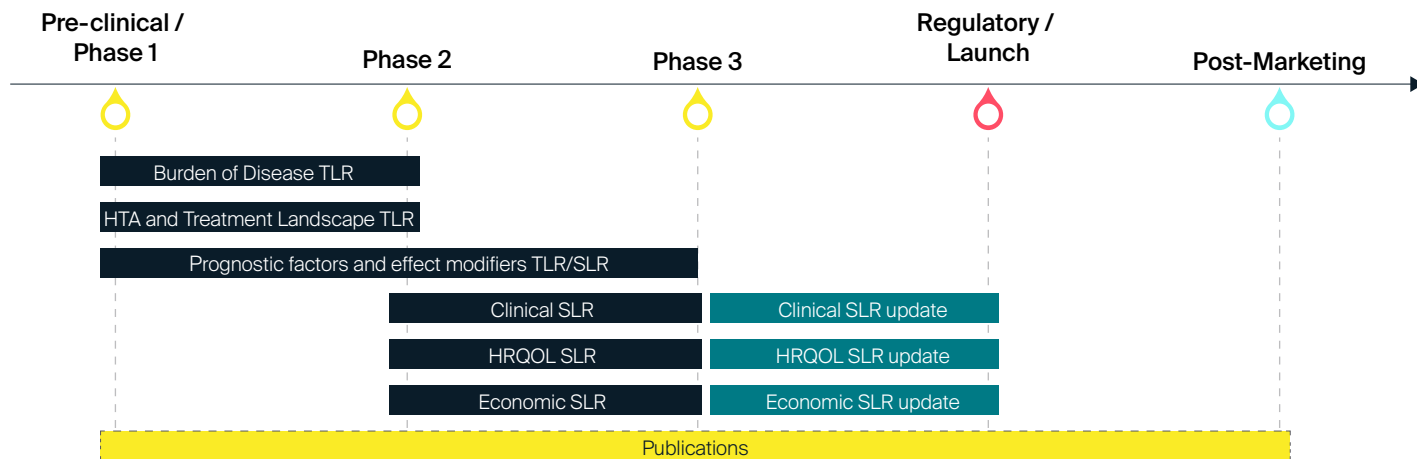
Enhancing Credibility and Publication Opportunities: Literature reviews provide credible evidence to inform peer-reviewed publications, conference abstracts, and scientific communications

Review	Targeted Literature Review (TLR)	Systematic Literature Review (SLR)
Defining Scope and Objectives	Focuses on specific, high-priority topics (e.g. therapeutic areas, unmet needs, or specific interventions); scope may adapt to evolving project needs.	Clearly defined scope aligned with regulatory or reimbursement goals; specific research questions are established at the outset (e.g. efficacy, safety, or cost-effectiveness).
Methodology	Less structured and does not necessarily adhere to formal systematic review guidelines. Typically involves single-reviewer screening and selection, guided by project-specific relevance	Adheres to formal guidelines such as PRISMA and Cochrane guidelines. Screening and selection follow strict inclusion/exclusion criteria to minimize bias, with a double-reviewer process ensuring consistency and reducing errors.
Time and Resources	Efficient and resource-sensitive; best suited for focused questions, early-phase evaluation, or tight timelines.	Time-intensive, requiring significant resources to ensure thoroughness; suitable for late-phase evaluations or regulatory/reimbursement submissions.
Search Strategy	Targeted, pragmatic, and flexible; uses fewer databases and search terms specific to review's objectives (e.g. burden of illness, competitive landscape).	Comprehensive, systematic, and reproducible search across multiple databases, registries and gray literature including conference proceedings.
Search Time Frame	Generally <10 years.	≥10 years.
Study Selection	Guided by expert discretion and project-specific priorities; may or may not use formal inclusion/exclusion criteria.	Follows predefined inclusion/exclusion criteria (e.g. PICOS framework) to minimize bias and align with guidelines and regulatory standards.
Data Extraction	Selective data extraction focused on specific metrics or endpoints relevant to the project.	Comprehensive and standardized data extraction using predefined forms; captures detailed information on study design, population, interventions, and outcomes.
Quality Assessment	May lack formal quality checks.	Uses rigorous critical appraisal tools to ensure methodological quality and credibility for regulatory submissions.
Reporting	Flexible, customized to stakeholder needs (e.g. slide decks for internal teams or payer dossiers); less detail-oriented.	Detailed, transparent, and standardized, adhering to PRISMA guidelines. Includes evidence tables, flow diagrams, and comprehensive appendices.

Key: PICOS, Population, Intervention, Comparator, and Outcomes Study; PRISMA, Preferred Reporting Items for Systematic reviews and Meta-Analyses.

When would we recommend undertaking a literature review?

A well-timed literature review is a powerful tool for driving success throughout the drug development and commercialization journey. While the examples below highlight common types of reviews aligned with specific phases of this process, it's important to emphasize that literature reviews can be initiated at any stage, particularly when specific research questions emerge that require focused evidence to guide strategic decisions.

Pre-clinical / Phase 1 — Phase 2 — Phase 3 — Regulatory / Launch — Post-Marketing

- Burden of Disease TLR
- HTA and Treatment Landscape TLR
- Prognostic factors and effect modifiers TLR/SLR
- Clinical SLR | Clinical SLR update
- HRQOL SLR | HRQOL SLR update
- Economic SLR | Economic SLR update
- Publications

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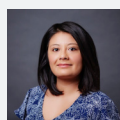
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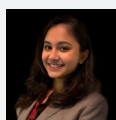
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