Comprehensive Real-Time AI-assisted Living Systematic Literature Review (REAL-SLR) Outperform Custom Reviews for Strategic Health Technology Assessment (HTA) and Market Access (MA) Planning: An Advanced Metastatic Breast Cancer (mBC) Example

HTA8

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OBJECTIVES

→ To demonstrate the strategic limitations of custom SLRs and the advantages of a comprehensive REAL-SLR approach using an antibody–drug conjugate (ADC) development scenario in mBC

BACKGROUND

- SLRs underpin health-technology assessments (HTA) and market access decisions
- Traditional custom SLRs are often designed around narrow, question-specific scopes
- Within dynamic oncology landscapes, evolving evidence dictates the need for scope modifications during HTA negotiations

METHODS

- A comprehensive REAL-SLR was established using a broad, PRISMA-aligned, protocol-driven search strategy capturing the full mBC evidence-base
- All records were retained and updated daily
- Strategic questions were addressed through real-time refinement of Population–Intervention–Comparator–Outcome (PICO) criteria, with automated updates to PRISMA flow diagrams and HTA-compliant SLR outputs (**Figure 1**)
- Timelines and workflow implications were compared with a custom SLR
- The REAL-SLR agentic AI model was trained to deliver individual PICOS decisions using prompt engineering and validated against human review (See ISPOR 2026 Posters MSR18, MSR22)

Table 1. PRISMA diagram for the Breast Cancer REAL-SLR for records included in 2025

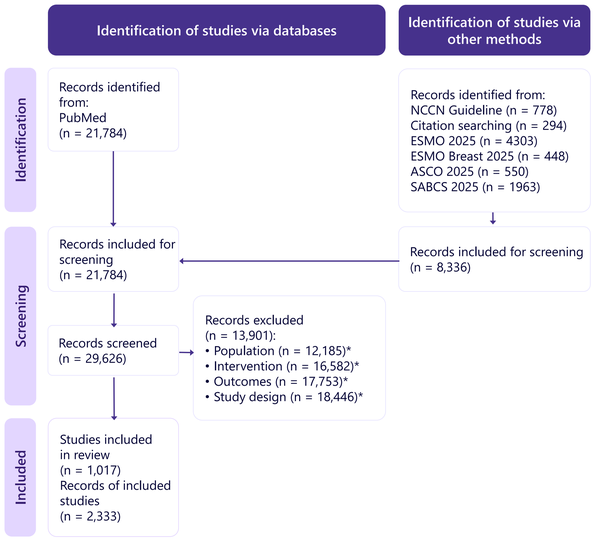


Figure 2. Comparison of REAL-SLR and custom SLR approaches

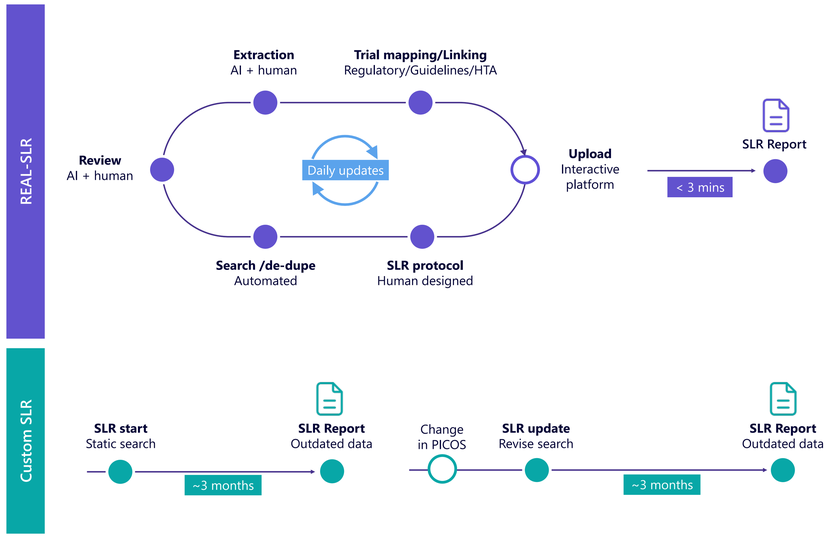
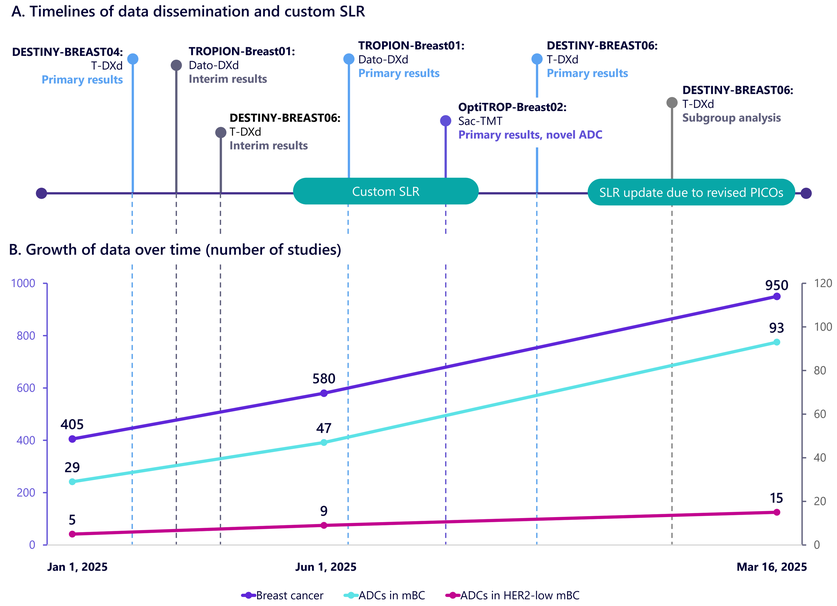


Figure 3. Case study in HER2-low/Ultra-low mBC



RESULTS

Comparison of REAL-SLR system and a custom SLR approaches

- The REAL-SLR system (**Figure 2A**) is a cycle of capturing, reviewing, and uploading oncology data in near-real time as studies are published. This system runs a daily-updated SLR, compliant with PRISMA guidelines using a broad search strategy and Population, Intervention/Comparators, Outcomes, and Study design (PI/COS) framework. The proprietary artificial intelligence model is employed during first title and abstract review and initial extractions. These AI-based decisions are reviewed and validated by a team of research scientists who then organize, cross-check with regulatory and guideline documents before uploading new results to the user-friendly, interactive platform. Second review and conflict resolution were conducted by researchers
  - → Evidence from the REAL-SLR system can be stratified by patient populations, treatment pathways and interventions, outcomes, and other subgroups categories
  - → Generating an HTA-ready report following multiple scope refinements required 3 minutes
- In contrast, a custom SLR (**Figure 2B**) is a static process, with an initial PI/COS framework that requires ≥3 months to complete. Output of results in a SLR report is often outdated due to the emergence of new evidence during this time frame. And requests by HTA bodies for expanded comparators or alternative populations are also likely. Such requests require changes to search strategy and PICOs, increasing time for custom SLR updates and highlighting the risk of evidence obsolescence
- **Case study in metastatic breast cancer: Pivotal evidence for antibody-drug conjugates (ADCs) for treating HER2-low/Ultra-low metastatic breast cancer (mBC)**
- As of March 16, 2026, the REAL-SLR contained 950 studies in BC. Filtering for ADCs identified 118 studies, including 93 in mBC. Further narrowing to HR+/HER2-negative disease yielded 36 studies with 15 studies specifically in a HER2-low/ultra-low population (**Figure 3**)
- The number of overall studies and within these specific subpopulations significantly increased from the start of 2025, with 405 studies in BC, 29 studies of ADCs in mBC and only 5 studies evaluating ADCs in a HER2-low/Ultra-low population. Since June 2025, 46 new studies evaluating ADCs were published including 6 new studies on ADCs in HER2-low/Ultra-low subpopulation (**Figure 3**)
- As of early 2025, interim data for two pivotal phase 3 RCTs evaluating the ADC trastuzumab deruxtecan were published (DESTINY-BREAST01; DESTINY-BREAST06). As of June 1, 2025, primary data from these two trials were published as well as a new trial evaluating a novel ADC not previously captured: Sacituzumab tirumotecan in the OptiTROP-Breast02 trial. By then end of 2025 and into early 2026, subgroup data from DESTINY-BREAST06 was published (**Figure 3**)
- A custom SLR addressing the ADC-comparator landscape in this population would require ≥3 months, thereby delaying incorporation of key data updates and identification of novel treatment comparators. Requests by HTA bodies for expanded comparators or alternative populations are likely. Such requests require changes to search strategy and PICOs, increasing time for custom SLR updates and highlighting the risk of evidence obsolescence
- Generating an HTA-ready report following multiple scope refinements to capture the new ADCs and updated data required 3 minutes using the REAL-SLR

CONCLUSIONS

- → REAL-SLR enables timely, resource-efficient evidence synthesis for oncology HEOR and market access
- → The case-study in breast cancer also highlights the emergence of novel interventions during the development and finalization of an SLR
- → Custom SLRs introduce structural delays and strategic risk
- → A REAL-SLR offers timely updates and adjustable parameters to keep-up with HTA requirements without losing methodological rigor
- → This approach supports faster, more resilient, and negotiation-ready market access and HTA decision making in rapidly changing oncology settings

ABBREVIATIONS

ADC, antibody-drug conjugate; Dato-DXd, datopotamab deruxtecan; HER2, human epidermal growth factor receptor-2; mBC, metastatic breast cancer; Sac-TMT, sacituzumab tirumotecan; T-DXd, trastuzumab deruxtecan

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