Strategic Market Access Planning in Breast and Lung Cancer Enabled by Real-Time AI-Assisted Living Systematic Literature Review (REAL-SLR) system

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BACKGROUND

- In cancers characterized by rapid evidence generation, such as breast or lung cancer, market access strategies require continuous monitoring of evolving comparator landscapes, endpoints, and subpopulations to meet the needs of heterogeneous payer and health technology assessment (HTA) requirements

OBJECTIVE

→ To evaluate the use of a REAL-SLR system to support strategic market access planning in breast and non–small cell lung cancer (NSCLC), comparing to traditional static SLR approaches

METHODS

- REAL-SLRs were implemented using protocol-driven, PRISMA-aligned searches for breast and NSCLC with updates performed daily. Inclusion of studies was based on the Population, Intervention/Comparators, Outcomes, and Study design (PI/COS) framework (**Figure 1**)
- Evidence from interventional clinical trials, regulatory approvals, clinical guidelines, and HTA reviews were systematically identified and structured in near real-time. Clinical trials published in English since 2019 were identified in PubMed and relevant conference proceedings from the 2025 were included
- A proprietary artificial intelligence model was employed during first title and abstract review. Second review and conflict resolution were conducted by researchers. The REAL-SLR agentic AI model was trained to deliver individual PICOS decisions using prompt engineering and validated against human review (See MSR18, MSR22)
- Outputs from were aligned to market access needs including evolving comparator standards, biomarker-defined subpopulations, payer-relevant endpoints, and quality-of-life (QoL) measures. Evidence was continuously mapped to regulatory and HTA milestones to support early pipeline planning, value story development, pricing and reimbursement strategy, and parallel regulatory–HTA preparation

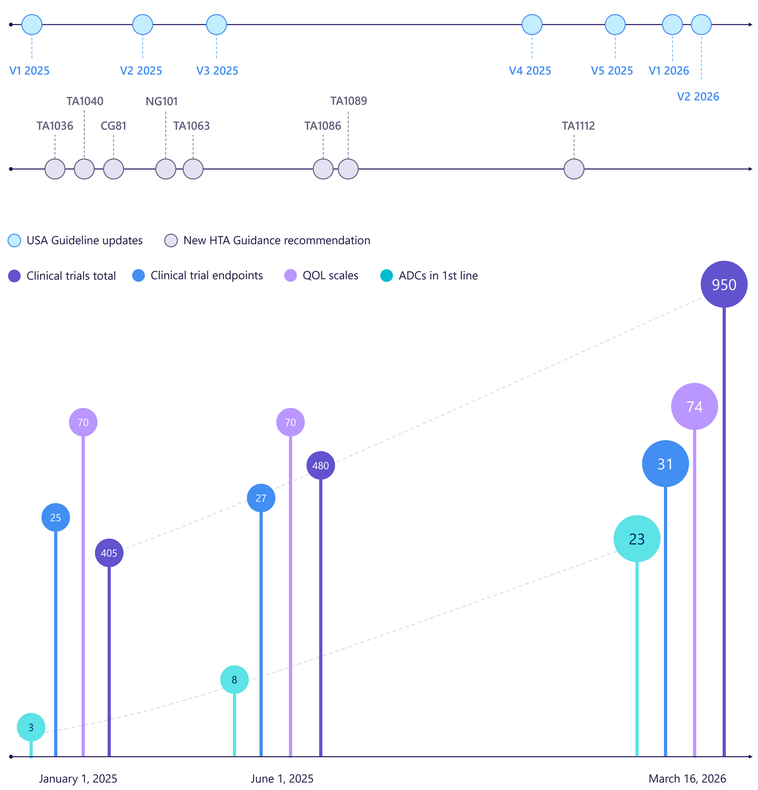
Figure 1. PICOS Criteria

P, population; I, intervention; C, comparator; O, outcomes; S, study design

	Breast cancer	NSCLC
P	Patients diagnosed with breast cancer	Patients diagnosed with NSCLC
I/C	Any pharmacological intervention (including biologics, cell treatments, vaccines, etc.), any surgery or radiotherapy	
O	OS, PFS, other progression measures (such as duration of response, time to progression, time to next treatment), ORR, pCR, MPR, QOL(measures such as EORTC QLQ-C30), safety (treatment-related adverse events [AEs], grade ≥3 and serious AEs, AEs of special interest and discontinuations)	
S	Prospective interventional studies including randomized and non-randomized trials, any phase; pooled analyses of trials, external control trials	

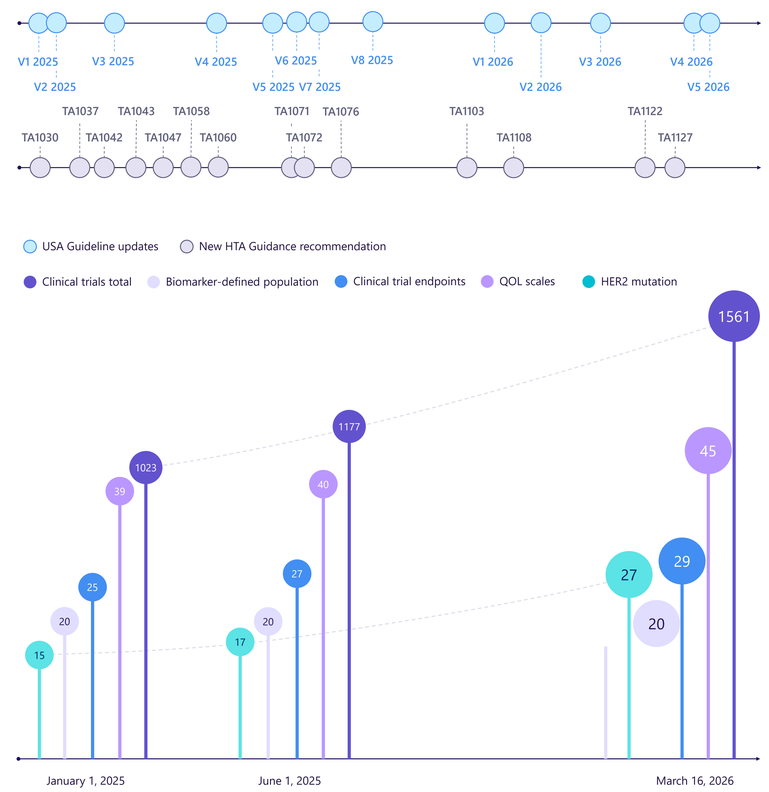
Abbreviations MPR, major patholozgical response; ORR, overall response rates; OS, overall survival; pCR, pathological complete response; PFS, progression-free survival; QOL, quality of life

Figure 2. Rapidly evolving evidence in breast cancer



Abbreviations: ADC, antibody-drug conjugate; HTA, health technology assessments; QOL, quality of life
Note: Series use different y-axis scales for clarity

Figure 3. Rapidly evolving evidence in NSCLC



Abbreviations: HER2, human epidermal growth factor receptor-2; HTA, health technology assessments; NSCLC, non-small cell lung cancer; QOL, quality of life
Note: Series use different y-axis scales for clarity

CONCLUSIONS

→ Our agentic LLM system can accurately review publications with performance superior to human experts

→ This level of accuracy highlights our system's potential to deliver real-time clinical data, empowering HEOR professionals with expedited evidence generation, with the hopes of ultimately improving patient access

RESULTS

Rapidly evolving evidence in breast cancer is supported by a REAL-SLR

- Across breast cancer, from January 1, 2025 to March 16, 2026, the continuously updated REAL-SLR captured 950 interventional trials, 7 guideline updates, 74 distinct clinical trial endpoints, 31 quality of life (QOL) measures, and 8 HTA reviews from major agencies (**Figure 2**) over this 14-month period
- Whereas static SLRs are only updated approximately every 3-6 months over a multi-year development lifecycle, the living approach of REAL-SLR enabled identification of changes in relevant measures earlier, reduced time to incorporate late-breaking conference data by 75% and eliminated the need for 3-5 updates of custom SLRs over a 2-year period
- A key area of growth within breast cancer is the therapeutic use of antibody-drug conjugates (ADCs), with a particular emphasis on their use in earlier lines of therapy. At the start of 2025, only 3 trials included data on ADCs for treatment naïve metastatic breast cancer (**Figure 2**). By early 2026, the number of trials grew by 7.7-fold, with 23 trials evaluating ADCs in the 1st-line setting. Strategic teams were able to use the evolving living evidence base to test alternative positioning scenarios, such as incorporating emerging clinical trial endpoints or relative effects on QOL

Rapidly evolving evidence in NSCLC is supported by a REAL-SLR

- In NSCLC, from January 1, 2025 to March 16, 2026, the system tracked 1561 interventional trials, 13 guideline updates, 45 endpoints, 20 biomarker-defined subpopulations, 29 QOL scales, and 14 new HTA reviews (**Figure 3**) over this 14-month period
- Considering a case study in the specific HER2 mutation biomarker population, as of January 1, 2025, 15 trials were published that included this population. Within the span of a typical SLR update of 6 months, two new trials were published that included this population. As of March 16, 2026, 27 trials were published, representing an almost 60% growth in this specific biomarker population (**Figure 3**). Within this subpopulation only, 3 FDA approvals were granted and 3 guideline changes were incorporated in USA guidelines for two novel HER2-targeted therapies
- The use of the REAL-SLR system allowed for the timely identification and incorporation of these novel HER2-targeted therapies with new regulatory authorization into strategic market access modelling activities

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