Case Study: UpToDate Integration

World's Leading Clinical Decision Support System

6,000+	**12,000+**	**130+**	**40+**
Clinical Topics	Expert Authors	Countries	Updates/day

📚 UpToDate RAG Architecture

User Query
"Diabetes treatment" → **NLP Layer**
• Medical NER
• Synonym expansion

Semantic
BioBERT vectors
6K topics

Keyword
BM25 + MeSH
Full-text

Smart Ranking
Evidence level + Usage → **Response**
With citations

Knowledge Base
12K authors
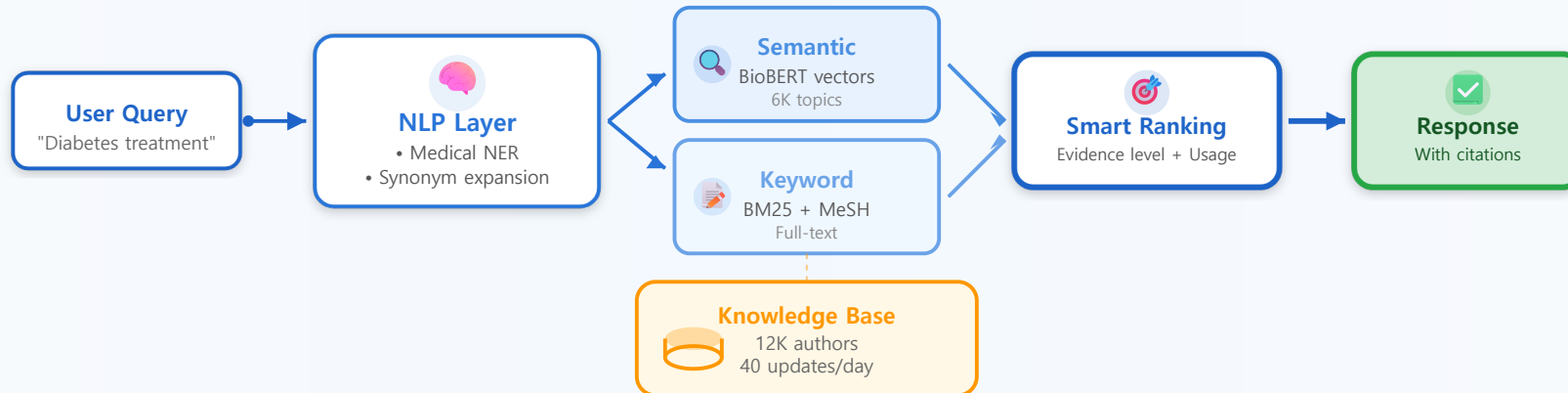40 updates/day

📊 Clinical Impact (Evidence-Based Outcomes)

↓ 6% mortality reduction
(NEJM 2012)

↓ 19% shorter hospital stays
(Systematic review)

92% change clinical decisions
(User survey)