

RESPONSIBLE USE OF AGENTIC ARTIFICIAL INTELLIGENCE
IN HEALTH ECONOMICS AND OUTCOMES RESEARCH

A risk-stratified governance framework

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Acceptance Code

STUDY OVERVIEW

- Objective**
- Develop a risk-stratified framework for responsible agentic AI use in HEOR, aligned with good research practice and HTA requirements.
- Method**
- Structured narrative synthesis of peer-reviewed literature and policy frameworks published from 2019 to 2025.
- Mapping**
- Applications, risks, and governance approaches were mapped to evidence synthesis, economic modelling, and decision support.

WHAT MAKES AN AI SYSTEM AGENTIC?

- Autonomous goal formulation
- Multi-step task execution
- Adaptive decision-making
- Use of tools, data, and models
- Iterative action based on intermediate outputs

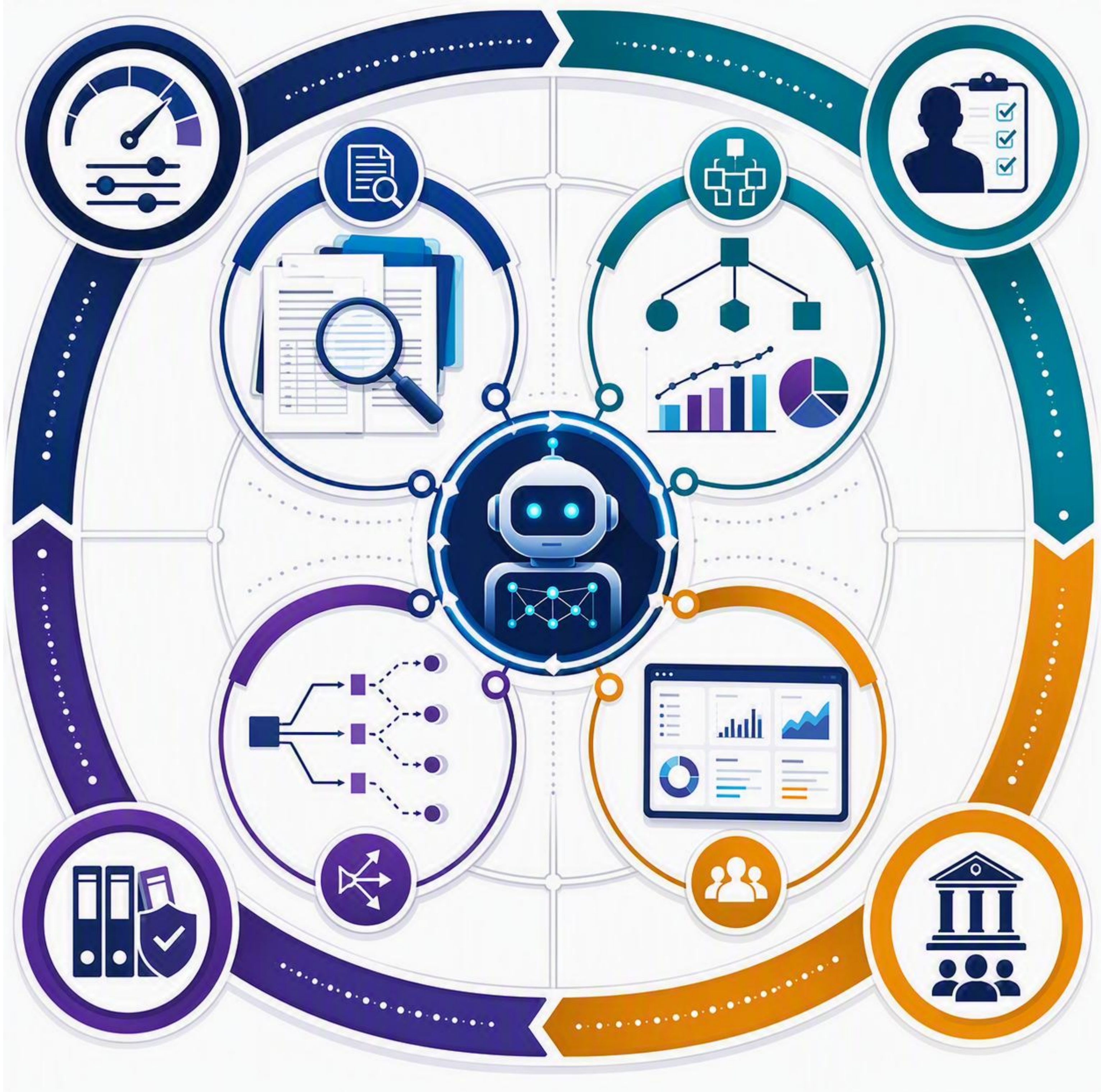
HEOR APPLICATIONS IDENTIFIED

- EVIDENCE SYNTHESIS**
- Iterative evidence identification, extraction, synthesis, and updating.
- ECONOMIC MODELLING**
- Support for simulation-based modelling and iterative analytical workflows.
- SCENARIO ANALYSIS**
- Structured exploration of assumptions, alternatives, and uncertainty.
- DECISION SUPPORT**
- Contextualized synthesis of evidence for healthcare decisions.

FOUNDATIONAL SAFEGUARDS

- Secure and authorized data access
- Privacy and confidentiality controls
- Robustness and reliability checks
- Transparent, explainable processes
- Complete traceability and reproducibility
- Qualified human accountability

CONCEPTUAL GOVERNANCE MODEL



The central agent connects HEOR tasks to an outer control layer that limits autonomy, enables human review, preserves audit evidence, and links use to organizational governance.

KEY RISK DOMAINS IDENTIFIED IN THE SYNTHESIS

- NON-DETERMINISM**
- The same task may not produce identical behaviour or outputs.
- UNCONTROLLED EVOLUTION**
- Adaptive mechanisms can change system behaviour over time.
- DATA GOVERNANCE**
- Potential leakage or inappropriate access requires explicit controls.
- AUDITABILITY**
- Multi-step actions can be difficult to reconstruct without complete logs.
- ACCOUNTABILITY**
- Responsibility must remain assigned to qualified human decision-makers.

FOUR GOVERNANCE PILLARS

- 1 RISK-PROPORTIONATE AUTONOMY**
- Align agent independence with the impact and reversibility of the intended decision.
- 2 HUMAN-IN-THE-LOOP OVERSIGHT**
- Place expert review, challenge, approval, or escalation at defined checkpoints.
- 3 STRUCTURED DOCUMENTATION**
- Document data, models, prompts, tools, actions, versions, and decision processes.
- 4 INTEGRATED GOVERNANCE**
- Connect deployment to organizational quality, security, ethical, and regulatory structures.

Responsible adoption requires autonomy to be matched to decision impact and embedded within auditable HEOR governance.

CONCLUSION

The use of agentic AI in HEOR requires a shift toward governance-centered implementation. Embedding proportional autonomy, human oversight, and transparency within HEOR workflows can support responsible adoption while preserving scientific validity, reproducibility, and trust in healthcare decision-making.

POSTER INFORMATION

Session 2
Monday, 7 September 2026
Time: 12:15–16:15