

Artificial Intelligence as a Driver of and Solution to the Spread of Health Misinformation in Emergency Care: A Literature Review

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Overview

- The growing use of Artificial Intelligence (AI) in healthcare presents benefits and challenges. These tools can help identify and counter misinformation; however, they may also generate and amplify unreliable health information.
- Despite this tension, there is currently no structured research framework to guide how emergency medicine (EM) should address these competing realities.
- Given the scarcity of existing literature, this project represents the first effort to systematically identify key knowledge gaps and outline a roadmap for future research in this emerging area.

Aims

- Long-term Aim:** To develop a comprehensive ten-year research agenda that guides EM's response to AI-driven unreliable health information, to be presented and voted on at the Society of Academic Emergency Medicine (SAEM) Consensus Conference¹ in May 2026.
- Current Project Aim:** To conduct a literature review, develop hypothetical scenario-based vignettes, and perform thematic analysis to identify existing recommendations and knowledge gaps that will inform future research priorities and policy development.

Methods

- Conducted narrative review using optimized MeSH term search strings, developed in collaboration with a Brown University librarian across three databases
- Developed inclusion and exclusion criteria and performed article screening using *Covidence*²
- Followed the PRISMA 2020 systematic review reporting guidelines to ensure transparency and reproducibility

Results

Figure 1. PRISMA 2020⁴ flow diagram illustrating the article selection process.

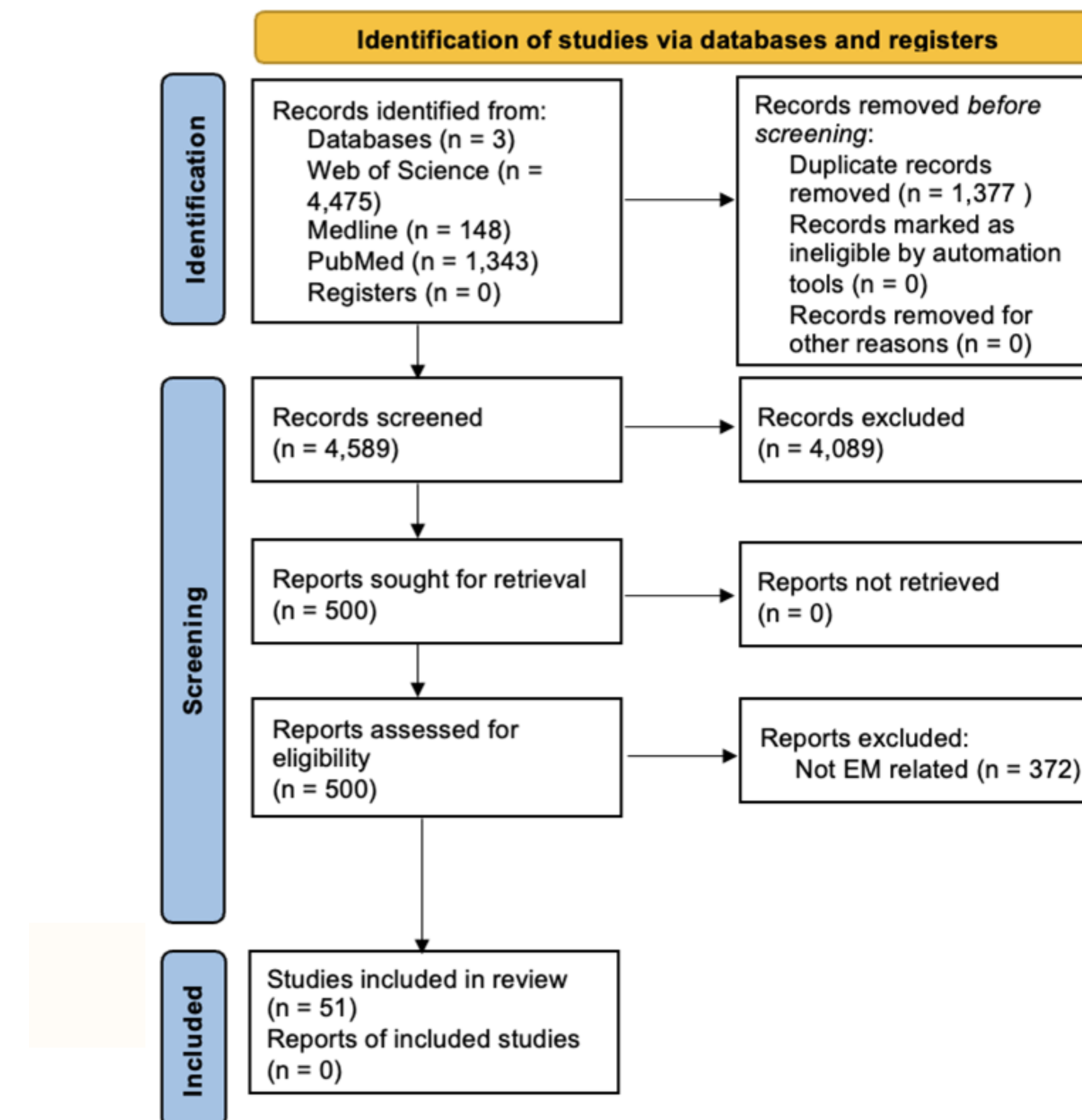


Figure 2: Inclusion and exclusion criteria used during the literature review process.

Inclusion Criteria	Exclusion Criteria
AI-generated or AI-amplified misinformation that reaches patients or clinicians and can influence emergency-care decisions — e.g., hallucinated discharge instructions, deep-fake imaging reads, LLM chatbots dispensing ED advice	Disinformation / misinformation not tied to emergency care or AI (e.g., political rumours, vaccine messaging outside an ED context)
AI tools that protect against or mitigate misinformation in EM — e.g., real-time fact-checking algorithms, LLM safety layers that flag unsafe advice	Conventional or manual fact-checking / educational workflows without any AI component
Study design: RCTs, quasi-experimental, observational, simulation/usability, computational, systematic reviews, qualitative/mixed methods, implementation & policy; opinion pieces included	Non-English, no geographic restrictions
Date ranges: 1 January 2020 – Present	

Conclusions

- EM currently lacks substantial scholarship on AI and health misinformation, despite being the “front door” of the healthcare system
- A database of relevant literature has now been established to support the development of realistic, scenario-based vignettes that reflect AI's role in both mitigating and amplifying misinformation in acute care

Future Directions

- These vignettes will undergo thematic analysis to identify knowledge gaps to map competencies and system-level changes needed to address AI-driven unreliable health information
- Findings will inform consensus building using a modified Delphi Method, engaging a panel of experts to iteratively refine research questions
- This process will culminate at the 2026 SAEM Consensus Conference, using structured consensus-building methodology to establish a research agenda for addressing AI and health misinformation in acute care medicine

References

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- Haddaway, N. R., Page, M. J., Pritchard, C. C., & McGuinness, L. A. (2022). PRISMA2020: An R package and Shiny app for producing PRISMA 2020-compliant flow diagrams, with interactivity for optimized digital transparency and Open Synthesis Campbell Systematic Reviews, 18, e1230. <https://doi.org/10.1002/cl2.1230>