

Cover Letter for JMIR Medical Informatics Submission

Date: January 2026

To: Editor-in-Chief, JMIR Medical Informatics

Re: Manuscript Submission - Review Article

Dear Editor,

I am pleased to submit the manuscript titled **“Healthcare Analytics Challenges: A Three-Pillar Framework Connecting Analytics Maturity, Workforce Agility, and Technical Enablement”** for consideration as a Review article in JMIR Medical Informatics. The manuscript consists of 2,348 words (main text) and includes 139 verified citations.

Manuscript Statistics

- **Total Word Count:** 2,632 words (including all frontmatter and references)
- **Main Text Word Count:** 2,348 words (Abstract through Conclusion)
- **Total Citations:** 139 verified references
- **Illustrations:** 3 figures (PRISMA flow, System Architecture, and Validated Query Cycle)

Background and Significance

Healthcare organizations face three interconnected challenges that create a compounding cycle threatening data-driven transformation: low analytics maturity (only 39 organizations globally have achieved HIMSS AMAM Stage 6-7), systemic workforce instability (53% CIO turnover within three years), and technical barriers in natural language to SQL generation. This review identifies a critical gap in the literature: while single-domain studies exist for each challenge, few analyze how they interconnect to create institutional memory loss.

Methodology

This narrative review synthesizes evidence across clinical informatics, human resources, and natural language processing. We identified literature from Crossref, PubMed, arXiv, and Semantic Scholar (n=570), with a final corpus of 135 sources. Grey literature was assessed using the AACODS checklist to ensure rigor. Evidence was integrated through an original three-pillar analytical framework examining how these challenges interconnect and compound each other.

Principal Findings

The review contributes an original three-pillar analytical framework revealing a self-reinforcing cycle: (1) **Analytics Maturity**: Low maturity traps organizations in reactive cycles; (2) **Workforce Agility**: Turnover exceeds other sectors, causing loss of “tacit knowledge”; and (3) **Technical Enablement**: Technical barriers block the capture of expertise. We illustrate how this cycle can be broken through a **Validated Query Cycle**, a governance forcing function that transforms analytical logic into durable software assets, ensuring institutional memory persists independent of staff tenure.

Conflicts of Interest

The author declares competing interests: Samuel T Harrold is a contract product advisor at Yuimedi, Inc., which develops healthcare analytics software, and is employed as a Data Scientist at Indiana University Health. This paper presents an analytical framework derived from published literature and does not evaluate or recommend specific commercial products.

Generative AI Disclosure

Gemini CLI (Gemini 3, Google) assisted with manuscript editing and refinement. The author takes full responsibility for the final content.

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Article Processing Fee

I acknowledge the applicable article processing fee (APF) if this manuscript is accepted after peer review.

Transfer Preference

If this manuscript is not suitable for JMIR Medical Informatics, I would welcome consideration for transfer to JMIR AI or JMIR Formative Research.

Thank you for considering this manuscript. I believe it will be of significant interest to JMIR Medical Informatics readers working in healthcare informatics, clinical decision support, and healthcare analytics.

Sincerely,

Samuel T Harrold

Yuimedi, Inc.