

## IISE Transactions on Healthcare Systems Engineering

### Call for Paper: Recent Advances of Artificial Intelligence Innovations in Health Systems Engineering

#### Description:

As healthcare systems worldwide strive to meet increasing demands and advance personalized care, artificial intelligence (AI) is emerging as a transformative tool. This special issue of IISE Transactions on Healthcare Systems Engineering aims to present cutting-edge research and innovative applications that leverage AI to tackle current healthcare challenges and enhance quality, efficiency, and resilience. Examples include supporting and improving clinical workflows, integration issues with EHR systems, economic sustainability (e.g., how AI infrastructure can affect resource utilization and financial management?)

By exploring the intersections of AI, data analytics, and systems engineering, this special issue aims to publish high-quality papers that have a strong methodological focus and innovation to address pressing issues in healthcare.

We invite contributions exploring AI across diverse healthcare domains, aiming to bridge the gap between AI and clinical practice. We welcome interdisciplinary submissions from researchers, scientists, clinicians, and engineers in healthcare, industrial and systems engineering, health informatics, and related fields.

We welcome submissions covering a wide range of topics focusing on the following areas:

- **Overcoming Systems Challenges in Health AI:** Methods and theories to address the critical systems-level challenges in the adoption and implementation of Health AI. Topics may include how health AI tools can be designed to support and improve clinical workflows without burdening healthcare providers; how AI solutions effectively interact with existing infrastructure while maintaining data integrity and usability; who should bear the financial responsibility for new smart health devices and AI tools, etc.
- **Health Informatics and Smart Health Solutions:** Contributions that explore innovative uses of health informatics to support smart health initiatives. Topics may include real-time patient monitoring, analysis related to healthcare disparities, informatics solutions that enhance the quality and accessibility of care, health data acquisition, management, and interoperability applications to enable seamless, data-driven healthcare delivery, etc.
- **Data Challenges in Healthcare Systems:** Approaches to handling data imbalance, high-dimensional data processing, sparse data, weakly labeled data, etc. in healthcare systems.
- **Clinical Decision Support Systems:** AI-driven tools for enhancing clinical decision-making, predictive models for patient outcomes, personalized treatment planning using data analytics, AI-driven natural language processing (NLP) in electronic health records (EHRs), etc.
- **AI Fairness in Healthcare Systems:** Development of decision support systems with an emphasis on AI fairness and explainable AI, addressing transparency, interpretability, and trustworthiness in healthcare systems AI.

- **Emerging AI Technologies in Public Health Systems:** Applications of AI in epidemiology, health monitoring, and public health operations, including IoT, blockchain, and other emerging technologies to enhance public health infrastructure.
- **Education and Workforce Training in AI-Enhanced Healthcare Systems:** Use of digital twins, virtual/augmented reality, and AI-driven simulations in training healthcare professionals and preparing the future workforce for AI-integrated healthcare systems.
- **Medical Imaging and Diagnostics:** Machine learning and deep learning applications in medical imaging to support disease prognosis, diagnosis, and treatment.
- **Innovation AI Applications in Healthcare Systems:** AI in mobile health (mHealth), drug discovery and precision medicine, large language models (LLMs) in healthcare systems, etc.

### **Submissions:**

All papers should be submitted through the journal's ScholarOne online submission website <https://www.tandfonline.com/journals/uhse21>

The names and contact information of at least four experts/reviewers are required during the submission process.

### **Important Dates:**

Deadline for Manuscript Submission: August 1, 2025.

Completion of 1st Round Review: October 1, 2025.

Completion of 2nd Round Review: December 1, 2025.

Final Decision: February 2026.

Expected Publication: May 2026.

### **Guest Editors:**

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