**Special Issue Call for Papers**
New Frontiers in Industrial and Systems Engineering for Healthcare Transformation

**Description:**

From growing chronic disease burdens to healthcare workforce shortages, healthcare systems face increasing challenges to deliver accessible, cost-effective, high-quality, and equitable care. Meanwhile, breakthroughs and availability of emerging technologies in medical devices, clinical therapeutic options, digital health technologies, and artificial intelligence are enabling a new paradigm to not only advance clinical research but also to transform operations and healthcare service delivery in practice. Beyond technological innovation alone, more importantly, this healthcare transformation requires system-level coordination and integration, pushing the frontiers in Industrial and Systems Engineering (ISE) that offer a robust methodological foundation for system improvements. This special issue is focused on the new frontiers in ISE that are accelerating the transformations of today’s healthcare systems.

This special issue builds upon the scholarly contributions highlighted in the Health Systems track of the 2025 IISE Annual Conference & Expo. High-quality conference papers and presentations at the conference demonstrated novel applications and methodological innovations at the intersection of new healthcare challenges and ISE methods. We cordially invite these contributors to further develop their work into full-length journal articles for submission to this special issue. **At the same time, we also welcome original manuscripts from researchers and practitioners, who did not attend the conference, to present their cutting-edge research.**

We encourage submissions that combine rigorous methodology with practical impact, highlighting the new frontiers in ISE for healthcare transformation. Topics of interest include, but are not limited to:

* Vision and Perspectives of Healthcare in the New Era: Forward-looking papers that articulate the evolving vision of healthcare transformation through ISE. This topic includes conceptual frameworks, design principles, process models, and strategic roadmaps, which can guide the healthcare transformation.
* Clinical Decision Support Systems: Methods that enhance clinical decision making by uncovering complex patterns in health data. This topic includes frameworks for structuring decisions under uncertainty, supporting accurate diagnoses, personalized treatment planning, and risk-informed clinical pathways.
* Innovation in Healthcare Service Delivery: This topic explores innovative methodologies to address emerging challenges in modern healthcare delivery. With the increasing adoption of telehealth, home health, and digital health, this topic focuses on system integration, process improvement, patient flow, capacity planning, and resource allocation across diverse care settings.
* Health Informatics: Theories and tools that lie at the intersection of data, technology, and clinical practice, enabling more informed decision making and efficient care delivery. This topic is focused on insights drawn from large-scale and heterogeneous datasets, including electronic health records, sensor data, and unstructured clinical notes.
* Human-centered design for healthcare: The human-centered design of safe and resilient healthcare systems. This topic is aimed at integrating emerging technologies such as computer vision, wearable sensing, and user behavior modeling to assess task demands and risks, reduce cognitive load, and improve system interfaces and clinical workflows.
* Public Health Analytics: Theories, methods, and applications that improve public health through data-driven approaches and system-level interventions. This topic is aimed at interdisciplinary studies that are critical for developing resilient and adaptive public health infrastructures and policies.

**Submissions:**

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

**Key Dates:**

Deadline for Submission: Oct. 1, 2025

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

Completion of 2nd Round Review: March 1, 2026

Final Decision: May 1, 2026

Expected Publication: Fall 2026

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