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Call for Papers—INFORMS Journal on Data Science Virtual Special Issue on Artificial Intelligence and Data Science for Healthcare

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Call for Papers—*INFORMS Journal on Data Science* Virtual Special Issue on Artificial Intelligence and Data Science for Healthcare

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Artificial intelligence (AI) and data science tools provide enabling technologies to facilitate the transformation of healthcare from reactive care to preventative care. For one, AI- and data-driven solutions can enhance efficiency, reduce costs, and improve equity in healthcare delivery systems. Moreover, they can integrate multimodal continuous streams of patient data for care personalization, engaging various stakeholders in resilient and patient-centered decision making.

However, critical challenges prevail in ensuring these technologies are robust, equitable, and clinically impactful. We believe that a key focus must remain on human-AI collaboration and patient-centered objectives, ensuring that AI and data science augment—rather than replace—clinical expertise and thus foster trust, interpretability, and ethical deployment in real-world settings. We also believe that equity remains central in AI-powered healthcare and that we should ensure that these technologies advance efficiency, fairness, and transparency in healthcare delivery.

Motivated by this perspective, this special issue seeks to explore the role of AI and data science in tackling grand challenges in healthcare, from drug discovery and hospital operations to multimodal data integration, model personalization, patient engagement, and global health disparities. We invite submissions that report on the original design and deployment of AI solutions within a healthcare setting.

Topics of interest include, but are not limited to:

1. ***AI in healthcare operations***
   - Healthcare operations management: Hospital resource allocation, staffing, and scheduling.
   - Healthcare logistics: Supply chain and inventory management, routing, and humanitarian logistics.
2. ***AI and healthcare information systems***
   - Health informatics: Clinical documentation and coding, new healthcare data sets for AI applications.
   - Interoperability and data governance: Privacy-preserving AI, regulatory compliance.
3. ***AI, ethics, and public policy in healthcare***
   - Public policy and sustainable AI: Energy-efficient algorithms, green computing, equitable access to AI.
   - Algorithmic ethics and transparency: Bias detection and mitigation, explainable AI, fairness metrics, and evaluation protocols.
4. ***AI from bench to bedside***
   - Translational medicine: Virtual screening for drug discovery, de novo molecular design, bioinformatics, AI-enhanced diagnostic decision making.
   - Clinical practice: Patient stratification, adaptive trial designs, intelligent systems that integrate clinician expertise with AI-driven insights.
5. ***AI for personalized and preventive medicine***
   - Preventive care: Lifestyle monitoring, digital therapeutics, wearable sensor–based algorithms.
   - Population health: Predictive modeling of disease outbreaks, chronic disease management.

6. ***AI in patient engagement and care delivery***
   - Conversational AI: Virtual assistants, remote triage.
   - Remote patient monitoring: Telemedicine, home-based sensor integration, personalized alerts.
7. ***Robustness, safety, and validation of AI***
   - Clinical validation: Benchmarking of AI tools.
   - Lifecycle management: Auditing, certification, and updating of AI systems.

We also welcome original contributions addressing healthcare market behavior, including the broader economic implications of AI adoption.

Submission

When you submit your manuscript via https://mc.manuscriptcentral.com/ijds, please select "Virtual Special Issue on AI and Data Science for Healthcare" as the manuscript type in **Step 1**. Manuscripts will be assigned to one of the guest editors for this issue. A paper submitted to the special issue will be processed right away, and accepted papers will be published in regular issues without delay. As such, authors are encouraged to submit as soon as they are ready. This special issue will be an online collection of all accepted articles tied together under a unifying editorial article for greater impact and outreach. ***Please feel free to reach out to the guest editors by submitting a brief summary (no longer than one page) outlining the intended submission***. Please note that presubmission inquiries must be made at least one month prior to the submission deadline.

Important Timelines

- Submission deadline is September 15, 2026.
- First round of decision by December 15, 2026.
- Subsequent timeline depends on revision time with authors, but guest editors are committed to finish revision review within 60 days.
- Maximum two rounds of revisions (three decisions total).
- All final decisions to be made by December 1, 2027.