



ARTIFICIAL INTELLIGENCE DEVELOPMENTS

By Girish N. Nadkarni and Jamie S. Hirsch

As digital technology advances, the role of artificial intelligence (AI) and informatics in health care continues to grow. As a “numbers” discipline, these technologies have the potential to revolutionize the way we approach kidney health and the diagnosis, treatment, and prevention of kidney diseases. In this special issue of *Kidney News*, we explore the promise of informatics and AI in kidney care and highlight some of the most exciting developments in this field.

In “Nudging Toward Progress: The State of Clinical Decision Support in Nephrology,” Kyle O’Connor and Dr. Wilson explore the integration of risk prediction in clinical care. This article highlights the potential benefits of using clinical decision support systems to improve patient outcomes and reduce costs, while highlighting the importance of robust evaluation for patient safety and outcomes. In another article, Dr. Town explores the use of information technology in pediatric nephrology education.

Drs. Bajaj and Koyner’s article, “Artificial Intelligence and Acute Kidney Injury,” delves into the use of multimodal data in predicting acute kidney injury (AKI). The article highlights the potential of AI to integrate data from various sources and provide clinicians with more accurate and timely predictions of AKI.

Drs. James and Pannu explore the development of new apps that leverage AI to improve the management of AKI. This article highlights the potential of these apps to provide patients and clinicians with real-time insights into their health status, and to improve the overall quality of care for AKI patients.

Dr. Sakhuja and I [Dr. Nadkarni] introduce us to reinforcement learning (“Reinforcement Learning in Kidney Disease”), a branch of AI, and explore the potential of reinforcement learning to optimize treatment strategies for kidney diseases. We highlight the potential of AI to learn from patient data and provide personalized treatment plans that can lead to improved patient outcomes.

Finally, “Digital Health Equity and CKD” highlights the importance of ensuring that AI-powered health care solutions and digital applications are accessible to all patients, regardless of their socioeconomic status. In this article, Dr. Samal and co-authors emphasize the need for policymakers to prioritize digital health equity in the development and deployment of AI-powered health care solutions.

Overall, the articles in this special issue provide a comprehensive overview of the promise of informatics, digital tools, and AI in kidney diseases while laying out limitations and issues. In particular, the authors provide excitement and hope for our field, while stressing the need for rigorous evaluation and monitoring to ensure safety, equity, and effectiveness. We hope that this issue will inspire readers to explore the potential of informatics and AI in their own research and clinical practice. ■

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