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# Transformative Applications of AI and ChatGPT in Pediatric Nephrology: from Research to Clinical Practice

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In recent years, the explosive development of AI, particularly generative AI, has reshaped many disciplines including pediatric nephrology. Tools such as ChatGPT, a large language model trained on massive datasets including books, scientific articles, websites and other text sources, have demonstrated remarkable capabilities in knowledge retrieval and reasoning. In the research domain, AI has accelerated literature review processes, facilitated hypothesis generation and enhanced data analysis. By harnessing the power of generative AI, researchers can synthesize complex information and identify novel correlations in kidney disease pathophysiology, thereby paving the way for innovative research directions. In clinical practice, the integration of AI has the potential to revolutionize patient care in pediatric nephrology. Applications include augmenting diagnostic accuracy, predicting disease progression and personalizing therapeutic interventions. However, the implementation of AI in clinical settings necessitates rigorous evaluation to address ethical concerns. Issues such as bias, and user privacy require transparent protocols and robust safeguards to ensure patient safety and maintain professional integrity. This presentation will provide a comprehensive overview of current and prospective AI applications in pediatric nephrology. By discussing real world case studies and practical strategies, it aims to bridge the gap between cutting edge AI research and everyday clinical practice. Through careful implementation and continuous evaluation, AI can serve as a valuable ally in advancing pediatric nephrology research and enhancing the quality of patient care.

**Keywords:** Pediatric Nephrology, Artificial Inteligence, Large language model, Generative AI, ChatGPT