

AI-Based Technologies for Improving Patient Safety and Quality of Care

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Abstract : Patient safety and quality of care are essential goals of health care delivery, but they are often compromised by human errors, system failures, or resource constraints. In a variety of healthcare contexts, artificial intelligence (AI), a quickly developing field, can provide fresh approaches to enhancing patient safety and treatment quality. Artificial Intelligence (AI) has the potential to decrease errors and enhance patient outcomes by carrying out tasks that would typically require human intelligence. These tasks include the detection and prevention of adverse events, monitoring and warning patients and clinicians about changes in vital signs, symptoms, or risks, offering individualized and evidence-based recommendations for diagnosis, treatment, or prevention, and assessing and enhancing the effectiveness of health care systems and services. This study examines the state-of-the-art and potential future applications of AI-based technologies for enhancing patient safety and care quality, as well as the opportunities and problems they present for patients, policymakers, researchers, and healthcare providers. In order to ensure the safe, efficient, and responsible application of AI in healthcare, the paper also addresses the ethical, legal, social, and technical challenges that must be addressed and regulated.

Keywords : artificial intelligence, health care, human intelligence, patient safety, quality of care

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