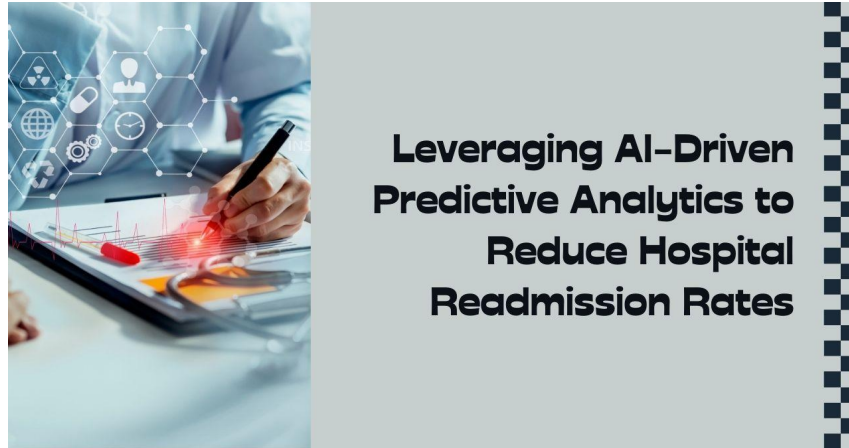


Leveraging AI-Driven Predictive Analytics to Reduce Hospital Readmission Rates

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Abstract: *This article examines the implementation of artificial intelligence-driven solutions for hospital readmission prediction and prevention. The article explores the evolution from traditional readmission prediction methods to advanced machine learning approaches, highlighting healthcare providers' challenges in managing readmissions effectively. It presents a comprehensive analysis of an AI-powered solution architecture, detailing the integration of electronic health records, advanced analytics engines, and risk stratification systems. The article demonstrates how machine learning models, particularly those incorporating both structured and unstructured data, can significantly improve readmission prediction accuracy. The implementation methodology and results reveal substantial improvements in clinical outcomes, resource allocation, and patient care quality through AI-driven decision support systems.*

Keywords: Healthcare Artificial Intelligence, Hospital Readmission Prevention, Machine Learning Implementation, Clinical Decision Support Systems, Predictive Analytics