



Methodological Evaluation of Emergency Care Units Systems in Kenya Using Time-Series Forecasting Models for Clinical Outcomes Measurement

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Abstract

Emergency care units (ECUs) in Kenya are underutilized due to suboptimal systems and clinical outcomes measurement. A systematic literature review was conducted, analysing studies from to . Studies were selected based on specific criteria related to ECU systems and time-series forecasting methods. The analysis revealed that ECUs in Kenya often face challenges such as understaffing, lack of equipment, and poor data management, which can lead to delays in patient care and suboptimal clinical outcomes. Time-series forecasting models were found to be effective tools for predicting future trends and optimising resource allocation. The review underscored the need for improved ECU systems in Kenya by leveraging time-series forecasting methods to enhance clinical outcomes measurement and resource management. Healthcare policymakers should invest in training, equipment, and data infrastructure to support ECUs. The use of robust time-series models can provide actionable insights for improving patient care processes. Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^{-1} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: African healthcare, emergency care units, clinical outcomes measurement, time-series analysis, longitudinal studies, predictive analytics, health system evaluation

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