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Time-Series Forecasting Model for Evaluating Community Health Centre Systems in Uganda,

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Abstract

Community health centres in Uganda have faced challenges in meeting service demands over time. A comprehensive time-series analysis was conducted using statistical software, incorporating historical data from -. The study employed an ARIMA (AutoRegressive Integrated Moving Average) model for forecasting future trends in service utilization and system performance. The ARIMA model indicated a significant increase of 5% in patient consultations per month, suggesting improved service capacity over the year. The time-series forecasting approach demonstrated promising results in evaluating community health centre systems' reliability, with substantial improvements observed in patient consultation rates. Further research should focus on scalability and cost-effectiveness of the model to ensure widespread application across Ugandan healthcare settings. Treatment effect was estimated with $text\{logit\}(\pi)=beta0+\beta^{\rightarrow} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, community health, forecasting model, intervention study, public health, time-series analysis, system evaluation*