Time-Series Forecasting Model for Evaluating Maternal Care Facilities in Rwanda: A Methodological Study

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Abstract

Maternal care facilities in Rwanda have been under evaluation to improve clinical outcomes. This study aims at refining methods for such evaluations. A time-series forecasting model was developed using historical data from existing maternal care facilities. The model incorporates robust standard errors to account for uncertainties in forecasting future clinical outcomes. The model showed a significant positive correlation ($p < 0.05$) between the number of newborns and maternal health indicators, indicating that increasing the number of newborns can lead to better maternal care quality. This study validates the effectiveness of time-series forecasting in evaluating maternal care facilities' performance. Implementing this model could enhance resource allocation for improving clinical outcomes in Rwanda's maternal care facilities. Maternal Care, Time-Series Forecasting, Clinical Outcomes, Rwanda Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \beta^{\neg} p\,X_i$, and uncertainty reported using confidence-interval based inference.

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