Methodological Evaluation of Community Health Centres Systems in Uganda Using Time-Series Forecasting Models for System Reliability Assessment

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Abstract

Community health centres (CHCs) play a crucial role in healthcare delivery in Uganda, particularly in rural and underserved areas. A systematic review methodology was employed, including electronic databases search for relevant studies from to . Inclusion criteria focused on empirical evidence and robust statistical methods like autoregressive integrated moving average (ARIMA) model with uncertainty expressed through a 95% confidence interval. CHCs in Uganda showed an increasing trend in patient visits over the last decade, indicating potential system reliability improvements with ARIMA forecasts predicting future trends with ±20% precision. The systematic review highlighted the need for consistent data collection and analysis to improve CHC systems' effectiveness and sustainability. Regular audits of healthcare services and continuous training for staff are recommended to enhance system reliability and patient outcomes. Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \beta^{\top} p\,X_i$, and uncertainty reported using confidence-interval based inference.

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

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