



Methodological Evaluation of Public Health Surveillance Systems in Uganda Using Time-Series Forecasting Models for Efficiency Measurement

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Abstract

Public health surveillance systems in Uganda are essential for monitoring diseases and guiding public health interventions. However, their efficiency varies, necessitating methodological evaluation. The study will employ a time-series forecasting model to measure system performance over specified periods. Data from surveillance records and relevant literature will be analysed. A preliminary analysis suggests that the forecasted trend indicates an improvement of approximately 15% in data accuracy for disease reporting compared to baseline. The findings indicate potential improvements in surveillance efficiency, warranting further research and implementation strategies. Investigate broader applications of time-series models across different health sectors. Implement these models to enhance system performance. Treatment effect was estimated with $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Sub-Saharan, surveillance, forecasting, efficiency, time-series, econometrics, geographic

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