



Time-Series Forecasting Model Evaluation for Public Health Surveillance Systems in Kenya,: A Methodological Assessment

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Abstract

Public health surveillance systems in Kenya have been established to monitor and respond to infectious diseases. These systems often rely on time-series forecasting models for early detection of outbreaks. The evaluation was conducted using a set of historical data from to . A time-series forecasting model was applied, incorporating robust standard errors to account for prediction uncertainties. The forecasted trend closely matched the actual incidence rates, with an accuracy coefficient (r) of 0.85, indicating a strong positive correlation between forecasts and observed outcomes. This suggests that the models can yield significant improvements in public health surveillance. Time-series forecasting models are effective tools for monitoring disease trends within public health surveillance systems in Kenya. The evaluation supports their continued use for improved outbreak detection and response planning. Public health authorities should invest in refining these forecasting models to enhance their predictive accuracy, which can lead to more timely interventions and better health outcomes. Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi)=\beta_0+\beta^{-1}pX_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African, Surveillance, Epidemiology, Time-series, Forecasting, Evaluation, Methodology*

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