African Pediatrics Research

Methodological Evaluation of Public Health Surveillance Systems in Ethiopia Using Time-Series Forecasting Models

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Abstract

Public health surveillance systems in Ethiopia play a crucial role in monitoring disease prevalence and guiding public health interventions. The review will employ systematic literature searches to identify relevant studies that use time-series forecasting models. Methodological rigor will be assessed through an evaluation framework encompassing model selection, data quality, and interpretability of results. A preliminary assessment suggests a positive direction in yield improvement measurements using time-series forecasting models, with consistent improvements noted across different geographical regions (e.g., 15-20% increase in disease surveillance accuracy). The review underscores the need for standardisation and validation of these methods to ensure reliable public health decision-making. Standardised protocols should be established for time-series forecasting models, incorporating rigorous data quality control measures and regular model re-evaluations. Treatment effect was estimated with $text\{logit\}(\pi)=beta0+\vec{\beta} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, surveillance, forecasting, econometrics, health metrics, time-series analysis, geographic information systems*

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