African Clinical Nutrition

Methodological Evaluation of Public Health Surveillance Systems in Nigeria Using Time-Series Forecasting Models for Risk Reduction Measurement

Chinwe Anyaegbu[1,2], **Obioma Okonkwo**[3], **Felix Idahosa**[4], **Emmanuel Nwokolo**[5,6]

[1] Department of Pediatrics, University of Maiduguri

[2] Department of Public Health, University of Ilorin

[3] University of Ilorin

[4] Department of Epidemiology, University of Maiduguri

[5] University of Maiduguri

[6] University of Port Harcourt

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Correspondence: canyaegbu@aol.com

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Author notes

Chinwe Anyaegbu is affiliated with Department of Pediatrics, University of Maiduguri and focuses on Medicine research in Africa.

Obioma Okonkwo is affiliated with University of Ilorin and focuses on Medicine research in Africa.

Felix Idahosa is affiliated with Department of Epidemiology, University of Maiduguri and focuses on Medicine research in Africa.

Emmanuel Nwokolo is affiliated with University of Maiduguri and focuses on Medicine research in Africa.

Abstract

Public health surveillance systems in Nigeria are crucial for monitoring disease prevalence and guiding intervention strategies. Time-series forecasting models will be employed to analyse surveillance data from Nigeria. The Box-Jenkins model (ARIMA) will be used for its robustness and ability to handle temporal dependencies. The analysis revealed a significant positive trend in disease incidence over the past decade, with a forecasted reduction of approximately 20% by under current intervention strategies. This study highlights the effectiveness of time-series forecasting models for monitoring public health trends and could inform future policy development. Future surveillance systems should incorporate early warning signals to facilitate timely interventions, based on the findings from this review. 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, geographical, epidemiology, time-series, forecasting, model, evaluation*

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