African Advertising Research

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

Uchechi Osita[1], **Obiakọwa Ezenwoselu**[2], **Nkem Njoku**[3], **Achisime Ofoeme**[4,5]

[1] Department of Internal Medicine, University of Port Harcourt

[2] Department of Epidemiology, University of Maiduguri

[3] University of Maiduguri

[4] University of Port Harcourt

[5] Department of Surgery, University of Maiduguri

Published: 21 March 2003 | **Received:** 18 November 2002 | **Accepted:** 28 January 2003

Correspondence: uosita@outlook.com

DOI: 10.5281/zenodo.18775011

Author notes

Uchechi Osita is affiliated with Department of Internal Medicine, University of Port Harcourt and focuses on Medicine research in Africa.

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

Nkem Njoku is affiliated with University of Maiduguri and focuses on Medicine research in Africa.

Achisime Ofoeme is affiliated with University of Port Harcourt and focuses on Medicine research in Africa.

Abstract

Public health surveillance systems in Nigeria are crucial for monitoring disease trends and controlling outbreaks. However, their effectiveness varies, necessitating a comprehensive evaluation. A systematic review of existing surveillance data was conducted to select appropriate studies. Time-series forecasting models, including ARIMA (AutoRegressive Integrated Moving Average), were applied for analysis. The ARIMA model indicated a mean forecast error rate of ±5% in predicting disease incidence trends, with some variability across different regions. Time-series forecasting models provide valuable insights into the performance and potential improvements of surveillance systems in Nigeria. Enhanced training for surveillance staff and integration of new technologies are recommended to improve system yield. Public Health Surveillance, Time-Series Forecasting, ARIMA Model, Nigeria Treatment effect was estimated with $text\{logit\}(\pi) = beta 0 + \vec{\beta} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Geographic, Sub-Saharan, Public Health, Surveillance, Evaluation, Models, Time-Series*

ABSTRACT-ONLY PUBLICATION

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

✉ REQUEST FULL PAPER

Email: info@parj.africa

Request your copy of the full paper today!

SUBMIT YOUR RESEARCH

Are you a researcher in Africa? We welcome your submissions!

Join our community of African scholars and share your groundbreaking work.

Submit at: app.parj.africa

Scan to visit app.parj.africa

Open Access Scholarship from PARJ

Empowering African Research | Advancing Global Knowledge