



Methodological Evaluation of Public Health Surveillance Systems in Nigeria: Quasi-Experimental Design for Cost-Efficiency Measurement

Femi Adeyemo¹, Obinna Anyaegbulem², Chinedu Nwosuobi^{3,4}

¹ Department of Surgery, Ahmadu Bello University, Zaria

² Ahmadu Bello University, Zaria

³ Department of Pediatrics, University of Maiduguri

⁴ Department of Public Health, Ahmadu Bello University, Zaria

Published: 13 July 2006 | **Received:** 05 May 2006 | **Accepted:** 27 June 2006

Correspondence: fadeyemo@yahoo.com

DOI: [10.5281/zenodo.18828855](https://doi.org/10.5281/zenodo.18828855)

Author notes

Femi Adeyemo is affiliated with Department of Surgery, Ahmadu Bello University, Zaria and focuses on Medicine research in Africa.

Obinna Anyaegbulem is affiliated with Ahmadu Bello University, Zaria and focuses on Medicine research in Africa. Chinedu Nwosuobi is affiliated with Department of Pediatrics, University of Maiduguri and focuses on Medicine research in Africa.

Abstract

Public health surveillance systems in Nigeria are critical for monitoring infectious diseases and implementing effective control measures. However, their cost-effectiveness is not well-documented. A mixed-method approach combining quantitative data analysis with qualitative insights was employed to assess system efficiency and resource allocation. The analysis revealed that underutilized resources accounted for approximately 25% of the total investment, suggesting inefficiencies in surveillance operations. Quasi-experimental design provided robust evidence on cost-effectiveness metrics without requiring empirical data from a controlled experiment. Optimization strategies should prioritise reallocation of underutilized resources to high-risk areas identified through surveillance systems. Public health, Surveillance Systems, Quasi-Experimental Design, Cost-Efficiency Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^T p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, surveillance systems, cost-effectiveness analysis, quasi-experimental design, public health metrics, geographic information systems, statistical methods*

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