



# Methodological Evaluation of Public Health Surveillance Systems in Nigeria: Quasi-Experimental Design for Measuring System Reliability

Chike Obiobi<sup>1</sup>

<sup>1</sup> Ahmadu Bello University, Zaria

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**Correspondence:** [cobiobi@gmail.com](mailto:cobiobi@gmail.com)

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## Author notes

*Chike Obiobi is affiliated with Ahmadu Bello University, Zaria and focuses on Medicine research in Africa.*

## Abstract

Public health surveillance systems are crucial for monitoring disease outbreaks and controlling epidemics in Nigeria. Despite their importance, there is a need to evaluate the reliability of these systems through rigorous methodological approaches. A quasi-experimental design will be employed, utilising pre-post comparison data from selected healthcare facilities across different regions of Nigeria. Statistical models including logistic regression will be used to analyse system performance and reliability. The preliminary findings suggest a significant improvement in the accuracy of disease reporting post-reform measures with a  $p$ -value  $< 0.05$ , indicating a statistically robust increase in reliable data transmission. The quasi-experimental design successfully highlights areas for system enhancement and provides evidence to support future policy recommendations aimed at improving public health surveillance systems in Nigeria. Based on the study findings, immediate action should be taken to implement recommended improvements, including training programmes for healthcare workers and investment in infrastructure upgrades.

**Keywords:** *African, Quasi-experimental, Surveillance, Evaluation, Methodology, Public health, Metrics*

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