African Critical Care Nursing

Methodological Evaluation of Public Health Surveillance Systems in Nigeria: Panel Data Estimation for Measuring System Reliability

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Abstract

Public health surveillance systems are crucial for monitoring and responding to infectious diseases in Nigeria. Despite their importance, there is limited methodological evaluation of these systems. The study will employ a fixed effects regression model to estimate the reliability of public health surveillance systems. Data will be collected from multiple sources including government health records and community surveys. Analysis reveals that the proportion of reported cases accurately matched the actual number, indicating a reliable system in some regions but with notable variations across different states. The panel data analysis confirms the need for consistent data collection methods to improve system reliability in Nigeria's public health surveillance systems. Implementing standardised reporting protocols and enhancing data quality control measures are recommended to ensure more reliable surveillance outcomes. Treatment effect was estimated with $text{ logit }(\pi)=beta 0+\vec{\beta} p X_{i}$, and uncertainty reported using confidence-interval based inference.

Keywords: *Nigerian, Public Health, Surveillance, Panel Data, Econometrics, Epidemiology, Reliability Analysis*

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