



# Methodological Evaluation of Public Health Surveillance Systems in Nigeria: Randomized Field Trial for Clinical Outcomes Measurement

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## Abstract

Public health surveillance systems in Nigeria are crucial for monitoring disease prevalence and implementing timely interventions. However, their effectiveness varies significantly across different regions. The study employs a mixed-methods approach combining quantitative and qualitative data. Randomized controlled trials are used to measure clinical outcomes, while surveys and interviews assess system functionality and participant satisfaction. In the first year of the trial, 85% of participants reported improved health awareness through community health worker interventions, indicating a positive impact on public health education. The randomized field trial successfully demonstrated the feasibility and effectiveness of enhanced surveillance methods in improving clinical outcomes and system functionality. Public health authorities should prioritise continuous evaluation and adaptation of surveillance systems based on empirical evidence to ensure optimal performance and coverage. Treatment effect was estimated with  $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta_1 X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *Public health, surveillance, metrics, randomized trials, outcome assessment, geographical epidemiology, data quality assurance*

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