Methodological Evaluation of Public Health Surveillance Systems in Nigeria: A Randomized Field Trial to Measure Yield Improvement

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Abstract

Public health surveillance systems in Nigeria are crucial for monitoring infectious diseases and managing disease outbreaks effectively. However, their efficacy varies significantly across different regions. A randomized controlled trial was conducted in two geographically diverse regions of Nigeria to assess the impact of improved surveillance protocols on disease detection and control outcomes. Data collection involved weekly reporting from healthcare facilities, with a sample size of 100 clinics per region. In Region A, there was a statistically significant increase in the number of cases reported ($p < 0.05$) compared to baseline data, indicating improved surveillance coverage and detection rates. The randomized field trial demonstrated promising results in enhancing public health surveillance systems' operational efficiency and effectiveness. Continued investment in training for healthcare workers and strengthening logistics support are recommended to sustain the observed improvements. Treatment effect was estimated with $text\{logit\}(\pi) = beta 0 + \vec{\beta} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, African, Surveillance, Systems, Epidemiology, Qualitative, Randomization*

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