African Botany Research (Core Life Science)

Reliability Assessment of Public Health Surveillance Systems in Nigeria: A Randomized Field Trial

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Abstract

Public health surveillance systems in Nigeria are critical for monitoring infectious diseases and outbreaks. However, their reliability is often questioned due to varying levels of implementation and data quality. A randomized field trial was conducted across three regions, with each region's surveillance system randomly selected for evaluation. Data from the past year were collected and analysed using statistical models to assess reliability metrics. The analysis revealed a significant improvement in the reporting of infectious diseases compared to previous years ($p < 0.05$), indicating enhanced system functionality. While the surveillance systems showed improved accuracy, there remains room for enhancement in data quality and standardization across different regions. Implementing standardised protocols and training programmes are recommended to further enhance the reliability of public health surveillance systems in Nigeria. 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, Geographic Information Systems, Sampling Theory, Randomization, Validity Studies, Surveillance Accuracy, Public Health Metrics*

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