



Methodological Evaluation of Public Health Surveillance Systems in Kenya: A Randomized Field Trial for Cost-Effectiveness Assessment

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Abstract

Public health surveillance systems are crucial for monitoring infectious diseases in Kenya, yet their effectiveness varies across regions. A mixed-method approach combining survey data and observational studies was employed. The study utilised a two-stage cluster-randomized design with stratified sampling, ensuring representativeness across different regions. In the pilot phase, it was observed that surveillance systems in rural areas were less effective due to inadequate infrastructure and resource allocation compared to urban settings. The findings highlight significant disparities in system performance which can inform targeted interventions for enhancing public health surveillance in Kenya. Investment should be prioritised in strengthening surveillance capacities, particularly in underserved rural regions. Treatment effect was estimated with $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, African, Spatial, Qualitative, Comparative, Randomized, Impact*

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