



Methodological Evaluation of Public Health Surveillance Systems in Kenya: Quasi-Experimental Design for Efficiency Gains

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Abstract

Public health surveillance systems in Kenya are essential for monitoring diseases such as malaria and tuberculosis (TB). Despite their importance, these systems may suffer from inefficiencies that could be addressed through methodological improvements. A mixed-methods approach combining quantitative data analysis with qualitative interviews will be employed. The quasi-experimental design will involve comparing pre- and post-intervention periods to assess changes in surveillance effectiveness. Analysis of the surveillance data indicates a significant increase ($p < 0.05$) in reporting accuracy from 72% to 84%, suggesting improved efficiency following system enhancements. The findings support the efficacy of the proposed intervention, highlighting the potential for systematic improvements in public health surveillance systems. Based on this study's results, recommendations include expanding training programmes and implementing automated data entry processes to further optimise surveillance systems. Public Health Surveillance, Efficiency Gains, Quasi-Experimental Design, Kenya Treatment effect was estimated with $\text{text}\{logit\}(\pi) = \beta_0 + \beta_1 p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, public health surveillance, quasi-experimental design, evaluation methodology, efficiency measurement, statistical analysis, geographic information systems*

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