



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

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Abstract

Public health surveillance systems are crucial for monitoring infectious diseases in resource-limited settings like Uganda. However, their cost-effectiveness and methodological rigor have not been systematically evaluated. A randomized field trial was conducted among 100 healthcare facilities. A mixed-method approach comprising quantitative data collection (costs, outputs) and qualitative interviews with stakeholders was used to evaluate system performance. The cost per case detected varied between 50–~~6~~70, with a sensitivity of the surveillance systems ranging from 85%-92%, indicating room for improvement in detection accuracy. While initial results show potential cost savings and improved detection rates, further refinement is needed to optimise resource allocation and enhance diagnostic precision. Public health authorities should prioritise system upgrades that improve detection efficiency and reduce operational costs without compromising on diagnostic outcomes.

Keywords: *Sub-Saharan, surveillance, evaluation, methodology, cost-effectiveness, randomized, trial*

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