



# Methodological Evaluation of Public Health Surveillance Systems in Rwanda: A Randomized Field Trial

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## Abstract

Public health surveillance systems in Rwanda have been established to monitor diseases and track public health trends. However, their effectiveness and reliability remain under scrutiny. A comprehensive search was conducted across databases including PubMed and Scopus. Studies were included if they provided empirical data or qualitative insights into the operational effectiveness of surveillance systems. A thematic analysis was applied to categorize findings and identify methodological strengths and weaknesses. The review identified a significant proportion (56%) of studies reporting on system performance metrics, indicating that while some systems are functional, there is room for improvement in data collection and analysis methods. Current public health surveillance systems in Rwanda show promise but require robust methodological enhancements to ensure reliable yield improvements. Systematic reviews should be conducted more frequently to monitor system performance. Stakeholders should prioritise the adoption of standardised methodologies and continuous training for personnel involved in data collection and analysis. 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, surveillance, methodology, evaluation, randomized, intervention, effectiveness*

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