



Methodological Evaluation of Public Health Surveillance Systems in Rwanda Using Quasi-Experimental Design to Assess Cost-Effectiveness

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Published: 11 January 2009 | **Received:** 25 August 2008 | **Accepted:** 08 December 2008

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DOI: [10.5281/zenodo.18886790](https://doi.org/10.5281/zenodo.18886790)

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Abstract

Public health surveillance systems are critical for monitoring and responding to infectious diseases in Rwanda. A mixed-method approach will be employed, combining quantitative data collection via surveys with qualitative interviews. Statistical models will be used to estimate costs and benefits of system operations. Initial data suggest that the surveillance systems are effective in reporting infectious disease cases but require further optimization for cost reduction. The quasi-experimental design provides a robust framework for assessing the performance and efficiency of public health surveillance systems in Rwanda, offering insights into potential improvements. Further research should focus on implementing targeted interventions to enhance system effectiveness without compromising accuracy. Public Health Surveillance, Quasi-Experimental Design, Cost-Effectiveness Analysis, Rwanda Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^{-1} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Rwandan, Geographic Information Systems, Quasi-experimental, Evaluation, Surveillance, Public health, Mapping*

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