



# Methodological Evaluation of Public Health Surveillance Systems in Rwanda: Quasi-Experimental Design for Yield Improvement Analysis

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## Abstract

Public health surveillance systems are crucial for monitoring infectious diseases in Rwanda. Despite their importance, there is a need to evaluate and improve these systems. A quasi-experimental design was employed to compare pre- and post-intervention data, with robust standard errors accounting for uncertainty in the estimates. The analysis revealed a 15% increase in reported infectious disease cases following system enhancements, suggesting improved detection rates. Quasi-experimental methods provide valuable insights into public health surveillance systems' effectiveness and offer avenues for improvement. Continued monitoring of the public health surveillance systems is recommended to maintain high detection rates and ensure timely interventions. Treatment effect was estimated with  $\text{logit}(\pi) = \beta_0 + \beta^T X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *Rwandan, Quasi-experimental, Surveillance, Evaluation, Public health, Metrics, Analytics*

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