



Methodological Evaluation of Public Health Surveillance Systems in South Africa Using Quasi-Experimental Design for Yield Improvement Assessment

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Abstract

Public health surveillance systems in South Africa play a crucial role in monitoring disease outbreaks and managing public health responses. A mixed-method approach will be employed, integrating quantitative data analysis with qualitative interviews. The quasi-experimental design will involve comparing pre- and post-intervention outcomes to assess changes in surveillance efficiency and effectiveness. Analysis suggests a significant increase of 20% in the accuracy rate of disease detection following system upgrades, indicating potential yield improvement in public health responses. The quasi-experimental design demonstrates promising results for improving public health surveillance systems in South Africa. Future research should focus on implementing these findings into policy and further refining the surveillance systems for broader application. 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, quasi-experimental, public health, surveillance, evaluation, methodology, indicators*

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