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Methodological Evaluation of Public Health Surveillance Systems in South Africa: A Randomized Field Trial on Clinical Outcomes Assessment

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Abstract

Public health surveillance systems in South Africa are crucial for monitoring disease prevalence and guiding public policy. However, their effectiveness can be compromised by methodological issues. A randomized field trial was conducted to assess the accuracy and reliability of data collected from various surveillance systems. Random sampling methods were employed, and statistical analysis was performed using logistic regression models. The study revealed that 75% of reported cases in the surveillance system matched clinical outcomes as determined by independent diagnostic tests. This finding suggests a strong correlation between reported numbers and actual health events. This randomized field trial provides evidence supporting the methodological integrity of public health surveillance systems in South Africa, with implications for data-driven policy formulation. Future studies should focus on continuous evaluation and refinement of surveillance methods to ensure they remain both effective and accurate. public health surveillance, clinical outcomes assessment, randomized field trial, logistic regression Treatment effect was estimated with $text\{logit\}(\pi) = beta 0 + \vec{\beta} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African contexts, Surveillance systems, Methodology, Randomized trials, Clinical outcomes, Public health, Data quality*

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