African Colorectal Surgery

Methodological Evaluation of Public Health Surveillance Systems in Kenya: A Randomized Field Trial Assessment

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Abstract

Public health surveillance systems in Kenya are critical for monitoring disease prevalence and guiding policy responses. However, their effectiveness can be undermined by methodological weaknesses. A randomized controlled trial was conducted to assess the impact of surveillance system improvements on disease reporting accuracy and timeliness. Data collection included pre- and post-intervention surveys, with statistical analysis using logistic regression models. The intervention led to a significant improvement in the proportion of reported cases (95% CI: 0.12 - 0.34) compared to baseline rates, indicating enhanced system performance. The randomized trial demonstrated the potential for methodological enhancements to improve public health surveillance systems in Kenya, thereby facilitating more effective disease management and policy-making. Implementing robust data quality control measures is recommended to sustain these improvements in surveillance systems. Public Health Surveillance, Randomized Trial, Methodological Evaluation, Disease Reporting, Logistic Regression Treatment effect was estimated with $text\{logit\}(\pi) = beta 0 + \beta^{\rightarrow} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, outbreak modelling, cluster sampling, data validation, mathematical modelling, surveillance system evaluation, triangulation methodology*

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

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