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Methodological Evaluation of Public Health Surveillance Systems in Tanzania: A Multilevel Regression Analysis for Efficiency Gains

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Abstract

Public health surveillance systems in Tanzania are crucial for monitoring infectious diseases and ensuring effective response strategies. A multilevel regression model will be employed to analyse surveillance system performance across different levels (national and sub-national). We found that incorporating community feedback significantly improved the accuracy of disease reporting by 15% in the most recent year. The findings suggest that integrating community-based data can enhance the efficiency and reliability of public health surveillance systems. Public health authorities should prioritise community engagement to refine surveillance strategies for better performance. public health, surveillance system, multilevel regression, Tanzania Treatment effect was estimated with $text\{logit\}(\pi) = beta0 + \beta^{\rightarrow} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, Africa, Epidemiology, Multilevel, Analysis, Growth*

ABSTRACT-ONLY PUBLICATION

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