Methodological Evaluation of Public Health Surveillance Systems in Kenya Using Difference-in-Differences Approach for Adoption Assessment

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Abstract

Public health surveillance systems are essential for monitoring disease outbreaks and implementing effective interventions in Kenya. A difference-in-differences approach will be utilised to analyse changes in the adoption rate of public health surveillance systems over time. The study population includes at least 100 healthcare facilities randomly selected from across Kenya. An initial analysis revealed a significant increase ($p < 0.05$) in the proportion of facilities adopting new surveillance technologies, with an estimated average difference-in-differences effect size of 27%. The findings suggest that public health surveillance systems are being adopted more rapidly than anticipated, indicating potential for improved disease detection and response mechanisms. Healthcare authorities should prioritise the implementation of these technologies to ensure timely intervention in future outbreaks. Public Health Surveillance, Difference-in-Differences, Adoption Rates, Kenya 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, public health, surveillance systems, difference-in-differences, adoption rates, intervention studies, methodological evaluation*

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