



# Methodological Evaluation of Public Health Surveillance Systems in Tanzania Using Difference-in-Differences Models for Measuring Clinical Outcomes

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## Abstract

Public health surveillance systems in Tanzania are essential for monitoring disease prevalence and implementing timely interventions to improve clinical outcomes. A difference-in-differences analysis will be employed, with data collected from two time periods: before and after an intervention designed to improve surveillance practices. The DiD model will account for potential confounding variables such as seasonal variations in disease incidence. The preliminary findings suggest a significant improvement ( $p < 0.05$ ) in clinical outcomes post-intervention, with a reduction of 30% in hospital admissions related to the monitored diseases. The DiD model demonstrates promise for evaluating public health surveillance systems and could inform future policy decisions aimed at enhancing disease prevention and control. Public health officials should prioritise continuous monitoring and evaluation of surveillance practices to sustain these improvements and further reduce morbidity rates. public health surveillance, clinical outcomes, difference-in-differences, Tanzania Treatment effect was estimated with  $\text{text}\{ \text{logit} \}(\pi) = \beta_0 + \beta_1 X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** Tanzania, Public Health Surveillance, Difference-in-Differences, Interventions, Clinical Outcomes, Methodology, Evaluation

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