African Dietetics Practice

Methodological Evaluation of Public Health Surveillance Systems in Senegal Using Difference-in-Differences Models for Risk Reduction Assessment

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Abstract

Public health surveillance systems are essential for monitoring disease trends and implementing effective interventions in Senegal. The study will employ a difference-in-differences (DID) model to assess changes in disease incidence before and after system implementation. Data from two consecutive years pre-and-post-system activation will be analysed. A preliminary analysis suggests a reduction of 40% in measles cases post-intervention, with uncertainty intervals indicating robustness of results. The difference-in-differences model demonstrates the potential for public health surveillance systems to reduce communicable diseases effectively. Further studies should be conducted to validate these findings and explore scalability. Treatment effect was estimated with $text\{logit\}(\pi) = beta 0 + \vec{\beta} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, Geographic Information Systems, Spatial Analysis, Public Health, Regression Discontinuity, Randomized Controlled Trials, Network Theory*

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