



Methodological Evaluation of Public Health Surveillance Systems in Senegal: A Panel Data Approach for Clinical Outcome Measurement

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Abstract

Public health surveillance systems are crucial for monitoring disease outbreaks and assessing their impact on public health outcomes. In Senegal, these systems have been established to track various diseases but their effectiveness in measuring clinical outcomes remains unexplored. The study employs a panel-data approach to analyse datasets from multiple sources. Key variables include disease incidence rates, patient demographics, and healthcare utilization patterns over time. Panel data estimates reveal that the surveillance systems in Senegal have achieved an average accuracy rate of 85% in clinical outcome measurement, with significant improvements observed in recent years due to enhanced reporting protocols. The findings suggest that while current systems are effective, they could benefit from further refinement and standardisation to ensure consistent and reliable data collection across different regions. Public health officials should prioritise the implementation of robust training programmes for surveillance personnel and encourage the use of more advanced statistical models to improve accuracy. Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta_1 X_p$, and uncertainty reported using confidence-interval based inference.

Keywords: Sub-Saharan, surveillance, econometric, panel analysis, health metrics, morbidity, serostatus

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