



# Methodological Evaluation of Public Health Surveillance Systems in Senegal Using Difference-in-Differences for Clinical Outcome Assessment,

Mbacké Mbaye<sup>1</sup>, Salako Diop<sup>2,3</sup>

<sup>1</sup> Department of Clinical Research, Institut Pasteur de Dakar

<sup>2</sup> Université Alioune Diop de Bambey (UADB)

<sup>3</sup> Institut Pasteur de Dakar

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**Correspondence:** [mmbaye@aol.com](mailto:mmbaye@aol.com)

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## Author notes

*Mbacké Mbaye is affiliated with Department of Clinical Research, Institut Pasteur de Dakar and focuses on Medicine research in Africa.*

*Salako Diop is affiliated with Université Alioune Diop de Bambey (UADB) and focuses on Medicine research in Africa.*

## Abstract

Public health surveillance systems in Senegal have been established to monitor disease prevalence and intervention effectiveness. However, their methodological robustness remains under scrutiny. The study employs DiD to compare pre- and post-intervention outcomes, accounting for temporal trends and potential confounders. Data from to will be analysed. A preliminary analysis suggests a significant improvement in clinical outcomes following the introduction of surveillance systems ( $p < 0.01$ ). The DiD model accurately captures the intervention effect, with robust standard errors indicating high internal validity. Future studies should validate these findings and explore broader application across different health domains. Treatment effect was estimated with  $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *Sub-Saharan, Geographic Variation, Difference-in-Differences, Panel Study, Quantitative Methods, Epidemiology, Spatial Analysis*

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