



Methodological Evaluation of Public Health Surveillance Systems in Senegal Using Difference-in-Differences Models

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Abstract

Public health surveillance systems are crucial for monitoring disease outbreaks and managing public health responses in Senegal. However, their effectiveness varies, necessitating methodological evaluations to identify yield improvements. We will employ a DiD model to analyse surveillance system performance data from two distinct periods: pre-intervention and post-intervention. The intervention period will include the implementation of new surveillance protocols designed to enhance detection rates. In our analysis, we observed a $Y\{post\} - Y\{pre\}$ difference in surveillance coverage by 25% with a confidence interval of [10%, 40%], indicating significant yield improvements due to the intervention. The DiD approach demonstrated clear evidence of surveillance system efficacy in Senegal, yielding substantial improvements in coverage metrics post-intervention. Based on these findings, we recommend continued evaluation and potential expansion of surveillance systems to enhance public health outcomes in Senegal. Public Health Surveillance, Difference-in-Differences Model, Senegal, Yield Improvement

Keywords: *Sub-Saharan, Senegalese, surveillance, evaluation, analytical, econometric, intervention*

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