African Molecular Biology (Core Life Science)

Methodological Evaluation of Public Health Surveillance Systems in Senegal: Panel Data Estimation for System Reliability Assessment

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Abstract

Public health surveillance systems are crucial for monitoring infectious diseases in developing countries like Senegal. However, their reliability and effectiveness vary widely across different regions. Panel data analysis was employed to estimate the reliability of public health surveillance systems in Senegal, with a focus on capturing temporal dynamics and cross-sectional variations. A significant proportion (35%) of reported cases showed discrepancies between local health authorities and national databases, indicating potential misreporting or under-reporting issues. This study highlights the need for standardised protocols to enhance data accuracy. This methodological evaluation underscores the importance of robust surveillance systems in improving public health outcomes in Senegal. Enhanced training programmes for healthcare workers and standardization of reporting procedures are recommended to improve system reliability. Public Health Surveillance, Panel Data Analysis, System Reliability, Senegal Treatment effect was estimated with $text\{logit\}(\pi) = beta 0 + \beta^{\rightarrow} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African Geography, Public Health Surveillance, Panel Data Analysis, System Reliability, Epidemiology, Stochastic Processes, Spatial Dynamics*

ABSTRACT-ONLY PUBLICATION

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