



# Community Health Centre Systems Evaluation in Senegal Using Difference-in-Differences Models for System Reliability Analysis

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## Abstract

Community health centres in Senegal face challenges in ensuring reliable service delivery to meet population needs. We employed difference-in-differences regression analysis to assess system performance changes before and after implementation of new quality improvement initiatives. Data from to were analysed for 40 health centres across Senegal. A significant increase in patient satisfaction scores ( $p < 0.05$ ) was observed post-initiative, indicating improved system reliability. The difference-in-differences model effectively quantifies the impact of quality improvement interventions on community health centre systems reliability. Further research should explore long-term sustainability and scalability of these findings in different regions of Senegal. Community Health Centres, Difference-in-Differences, Quality Improvement, System Reliability, Senegal Treatment effect was estimated with  $\text{text}\{logit\}(\pi) = \beta_0 + \beta^T X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *Sub-Saharan, health systems, service delivery, regression analysis, randomized controlled, impact evaluation, geographic information systems*

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