



Evaluating the Impact of Urban Primary Care Networks in Senegal

A Difference-in-Differences Analysis of Clinical Outcomes

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Author notes

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ABSTRACT

The expansion of urban primary care networks (UPCNs) in West Africa is a key health system reform, yet robust quantitative evidence of their impact on clinical outcomes remains scarce. This study aimed to quantify the causal effect of Senegal's UPCN rollout on key maternal and child health clinical indicators in urban settings. We employed a quasi-experimental difference-in-differences design using longitudinal panel data from 42 urban health facilities. The treatment group comprised facilities integrated into UPCNs, while matched control facilities operated under the standard model. The primary model was $Y_{it} = \beta_0 + \beta_1 (Treat_i \times Post_t) + \gamma_i + \delta_t + \varepsilon_{it}$, where Y_{it} is the outcome for facility i in period t . Inference was based on cluster-robust standard errors. UPCN integration significantly increased the proportion of antenatal care visits with all basic services completed by 14.3 percentage points (95% CI: 8.1, 20.5). No statistically significant effects were detected for facility-based deliveries or child vaccination completeness. The UPCN model in Senegal has improved the process quality of routine antenatal care but has not yet translated into broader impacts on utilisation-based outcomes. Policy should focus on strengthening referral linkages and community engagement within UPCNs to extend gains to delivery and immunisation services. Further research should investigate the cost-effectiveness of the model. primary health care, health systems, quasi-experimental, maternal health, urban health, West Africa This study provides the first application of a difference-in-differences framework to evaluate the clinical impact of urban primary care network reforms in the region, generating causal evidence for policy refinement.

Keywords: *Primary health care, Sub-Saharan Africa, Health systems reform, Difference-in-differences, Clinical outcomes, Urban health, Senegal*

Article Highlights

- UPCN reform boosted antenatal care service completion by 14.3 percentage points.

Methodological Note

Analysis uses a difference-in-differences model with longitudinal panel data from matched treatment and control

<ul style="list-style-type: none">• No significant effect found on facility-based deliveries or child vaccination rates.• Study employs a quasi-experimental difference-in-differences design across 42 urban facilities.• Findings suggest policy should strengthen referral systems within primary care networks.	<p>health facilities, providing causal evidence on the UPCN rollout.</p> <p><i>This analysis offers causal evidence for refining urban primary care policy in Senegal.</i></p>
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