

Evaluating the Impact of Urban Primary Care Networks on Clinical Outcomes in South Africa

A Panel-Data Analysis, 2000–2024

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ABSTRACT

The expansion of urban primary care networks (UPCNs) is a central health systems reform in many middle-income countries, yet robust longitudinal evidence on their impact on clinical outcomes remains limited. This study aims to quantify the causal effect of UPCN implementation on a suite of clinical outcome indicators within a major urban health system. We employ a balanced panel-data design, analysing facility-level data from a national administrative dataset. The core specification is a two-way fixed effects model: $Y_{it} = \beta_0 + \beta_1 \text{text}\{UPCN\}_{it} + \mu_i + \lambda_{dt} + \varepsilon_{it}$, where Y_{it} denotes clinical outcomes for facility i in period t . Inference is based on cluster-robust standard errors at the sub-district level. UPCN affiliation was associated with a statistically significant 12.4 percentage point increase in the controlled hypertension rate (95% CI: 8.7, 16.1). No significant effects were detected for glycaemic control or childhood immunisation coverage. The findings indicate that UPCNs can be an effective organisational model for improving the management of chronic non-communicable diseases in urban settings, but their benefits may not extend uniformly to all service domains. Policy should prioritise strengthening the chronic disease management components of UPCNs. Further integration of preventive and paediatric services within the network model is required. primary health care; health systems; panel data; fixed effects; urban health; clinical outcomes This study provides the first longitudinal, causal evidence on the differential clinical impact of South Africa's urban primary care networks, employing a novel application of administrative panel data for health systems evaluation.

Keywords: *primary health care, panel-data analysis, South Africa, health systems reform, clinical outcomes, urban health*

Article Highlights

- Panel-data analysis reveals a significant 12.4 pp increase in controlled hypertension rates linked to UPCNs.
- No significant effects detected for glycaemic control or childhood immunisation coverage.
- Findings suggest UPCNs are effective for chronic disease management in urban settings.
- Study employs a two-way fixed effects model on national administrative facility-level data.

Core Analytical Model

$Y_{it} = \beta_0 + \beta_1 \text{text}\{UPCN\}_{it} + \mu_i + \lambda_{dt} + \varepsilon_{it}$, with cluster-robust inference at the sub-district level.

This analysis provides longitudinal, causal evidence on the differential impact of urban primary care networks.

ABSTRACT-ONLY PUBLICATION

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