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Evaluating District Hospital System Performance in South Africa

A Difference-in-Differences Analysis of Intervention Yield, 2000–2026

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ABSTRACT

Background: District hospital systems in South Africa face persistent challenges in service delivery and health outcomes. Robust, longitudinal methods are required to isolate the effect of systemic interventions from secular trends and confounding factors.

Purpose and objectives: This study aimed to quantify the causal impact of a national district hospital support programme on intervention yield, defined as the composite rate of key service outputs per facility-month, using a quasi-experimental design.

Keywords: *District health systems, Difference-in-differences, Health systems evaluation, South Africa, Intervention yield, Quasi-experimental design, Health service delivery*

Article Highlights

- Difference-in-differences analysis isolates causal impact from secular trends.
- Intervention associated with 8.7 percentage point increase in

Methodological Note

The study employs a rigorous difference-in-differences model with facility and time fixed effects, using cluster-robust standard errors to account for district-level

service yield. • Method validates parallel trends assumption for robust policy evaluation. • Findings support scaled implementation with integrated performance monitoring.	correlations. *This analysis provides a causal framework for evaluating health system interventions in complex settings.*