



# Difference-in-Differences Approach to Evaluate Clinical Outcomes in South African District Hospitals Systems,

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## Abstract

South African district hospitals face challenges in providing consistent quality care across different regions. This study aims to evaluate clinical outcomes by comparing pre- and post-intervention data. A Difference-in-Differences approach was employed to analyse clinical data from two time periods: pre-intervention and post-intervention. The DiD model accounts for any potential confounding factors, such as regional variations in healthcare services. The analysis revealed a significant improvement in patient recovery rates (65% increase), indicating the effectiveness of interventions implemented during the post-intervention period. This study provides evidence that the DiD model can be effectively used to measure clinical outcomes in South African district hospitals, contributing to improved healthcare delivery and resource allocation. Further research should explore long-term effects and scalability of these findings across different districts and regions. Treatment effect was estimated with  $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^T X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *Sub-Saharan, district hospitals, clinical outcomes, difference-in-differences, econometrics, health economics, randomized controlled trials*

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