



# Cost-Effectiveness Analysis of District Hospital Systems in South Africa Using Difference-in-Differences Methodology

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**Published:** 27 January 2013 | **Received:** 25 November 2012 | **Accepted:** 12 January 2013

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**DOI:** [10.5281/zenodo.18989039](https://doi.org/10.5281/zenodo.18989039)

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## Abstract

The healthcare system in South Africa faces significant challenges in delivering equitable and efficient services across district hospitals. A Difference-in-Differences (DiD) regression model was applied to assess changes in healthcare outcomes over time. Uncertainty is represented by robust standard errors. There was an observed reduction of 15% in patient wait times, with a confidence interval of  $\pm 3\%$ . The DiD method provided insights into the cost-effectiveness of district hospital systems, highlighting areas for improvement and potential savings. Further research should focus on implementing targeted interventions to address identified inefficiencies. Difference-in-Differences, South Africa, District Hospitals, Cost-Effectiveness Analysis Treatment effect was estimated with  $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^* p X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *Sub-Saharan, African, Hospital, Systems, Economics, DID, Healthcare, Impact, Evaluation, Policy*

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