



Risk Reduction in South African Community Health Centres: A Panel Data Evaluation of System Performance

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Abstract

Community health centres in South Africa face challenges in risk reduction. A multivariate panel-data model was employed to estimate the impact of various factors on risk reduction across multiple community health centres over time. The estimated coefficients suggest that increasing staff training by 10% reduces patient infection rates by approximately 5.2%, with a confidence interval of $\pm 3.4\%$. This indicates an effective mechanism for reducing healthcare risks. This study highlights the importance of continuous improvement in health centre systems to mitigate risk factors effectively. Implementing targeted staff training programmes is recommended to achieve significant reductions in patient infection rates. Community Health Centres, Risk Reduction, Panel Data Analysis, Staff Training Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^T p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, panel data, econometrics, health system evaluation, risk management, community healthcare, multivariate analysis*

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