



Methodological Evaluation of Community Health Centre Systems in Rwanda: A Randomized Field Trial on System Reliability

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Abstract

Community health centers in Rwanda are pivotal to healthcare delivery but face challenges in reliability. A randomized field trial was conducted with 50 randomly selected community health centres, measuring their performance metrics over six months. System reliability varied significantly across centres, with an average improvement in service delivery by 23% after intervention. The study highlights the need for targeted interventions to enhance system stability and patient care. Health authorities should prioritise resource allocation based on system performance data. Community Health Centers, System Reliability, Randomized Field Trial, Rwanda Treatment effect was estimated with $\text{text}\{ \text{logit} \}(\pi) = \beta_0 + \beta^{-1} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, randomized controlled trials, community health systems, reliability analysis, service delivery models, intervention effectiveness, outcome measurement*

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