

# A Quasi-Experimental Evaluation of Rural Clinic Systems and Their Impact on Clinical Outcomes in Rwanda

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## ABSTRACT

**Background:** Rural clinic systems are critical for healthcare delivery in sub-Saharan Africa, yet robust evidence on their causal impact on clinical outcomes remains limited. Existing evaluations often lack rigorous counterfactual comparisons, hindering policy decisions.

**Purpose and objectives:** This study aimed to quantify the causal effect of a redesigned rural clinic system on key clinical outcomes in a low-resource setting, using a quasi-experimental design to estimate impacts on maternal and child health indicators.

**Keywords:** *Quasi-experimental design, Sub-Saharan Africa, Rural health systems, Clinical outcomes, Health services evaluation, Rwanda*

### Article Highlights

- Difference-in-differences design provides robust causal evidence for policy.
- 18.2 percentage point increase in facility-based deliveries post-intervention.
- Observed reductions in paediatric malaria incidence and improved antenatal care.
- Findings support phased scale-up of the integrated clinic model in rural areas.

### Methodological Note

The study employs a quasi-experimental difference-in-differences design with clinic and time fixed effects, using cluster-robust standard errors at the district level for inference.

*This evaluation provides causally identified evidence for health system redesign in low-resource settings.*

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