



A Randomised Field Trial Evaluating the Adoption of Integrated Community Health Systems in Senegal

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Author notes

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ABSTRACT

Integrated community health systems are promoted to improve primary care delivery in sub-Saharan Africa, yet evidence on the determinants of their adoption by frontline health centres remains limited. This study aimed to quantify the causal effect of a systems-strengthening intervention on the adoption of integrated service protocols within rural health facilities. We conducted a stratified, parallel-group randomised field trial. 80 community health centres were randomly allocated to intervention or control arms. The intervention comprised training, integrated clinical algorithms, and supportive supervision. Adoption was measured via a validated adherence index from routine data audits. The primary analysis used an intention-to-treat ANCOVA model: $Y_i = \beta_0 + \beta_1 T_i + \beta_2 Y_{i0} + \epsilon_i$, where Y_i is the endpoint adoption score, T_i is treatment assignment, and Y_{i0} is the baseline score. Robust standard errors were estimated. The intervention significantly increased the mean adoption score by 18.7 percentage points (95% CI: 12.3 to 25.1; $p < 0.001$) relative to the control group. The greatest improvement was observed in the integration of maternal and child health services. A structured systems-strengthening package can substantially increase the adoption of integrated service delivery models at the community health centre level. National health programmes should invest in integrated clinical algorithms combined with tailored supportive supervision to accelerate the adoption of integrated community health systems. health systems integration, community health, randomised controlled trial, implementation science, primary health care, Senegal This study provides novel causal evidence on a scalable intervention package to improve protocol adoption, demonstrating a statistically

significant and programmatically meaningful effect size.

Keywords: *community health systems, sub-Saharan Africa, randomised controlled trial, primary health care, implementation science, Senegal, health systems strengthening*

Article Highlights

- Intervention significantly increased mean adoption score by 18.7 percentage points (95% CI: 12.3 to 25.1).
- Greatest improvement observed in the integration of maternal and child health services.
- Training, integrated algorithms, and supportive supervision formed the effective intervention package.
- Provides novel causal evidence for scalable health systems strengthening.

Study Design

Stratified, parallel-group randomised field trial with 80 community health centres in Senegal. Primary analysis used intention-to-treat ANCOVA.

This trial demonstrates a programmatically meaningful effect on service integration.

ABSTRACT-ONLY PUBLICATION

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