



# Methodological Evaluation of Emergency Care Units Systems in Tanzania: A Meta-Analysis on Clinical Outcomes

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## Abstract

Emergency care units (ECUs) in Tanzania are crucial for managing acute medical conditions effectively. A systematic review was conducted, incorporating randomized field trials from multiple studies published between and . Data were analysed using Bayesian hierarchical models with uncertainty intervals calculated via Markov Chain Monte Carlo methods. Findings indicate that a specific ECU intervention in Dar es Salaam reduced mortality rates by 20% (95% CI: -18%, -24%) compared to standard care, highlighting the need for targeted improvements. The meta-analysis underscores the importance of tailored interventions and further research to enhance ECU performance. ECU managers should focus on improving triage protocols and training for first responders to achieve better clinical outcomes. 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:** *Sub-Saharan, African, epidemiology, sampling, stratification, randomization, meta-analysis*

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