



Methodological Evaluation of Emergency Care Systems in Tanzanian Units: A Randomized Field Trial for Clinical Outcomes Assessment,

Mwakisaka Abdullallah¹, Kamali Muhamed^{1,2}

¹ University of Dar es Salaam

² Nelson Mandela African Institution of Science and Technology (NM-AIST), Arusha

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Correspondence: mabdullallah@yahoo.com

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Author notes

*Mwakisaka Abdullallah is affiliated with University of Dar es Salaam and focuses on Medicine research in Africa.
Kamali Muhamed is affiliated with Nelson Mandela African Institution of Science and Technology (NM-AIST), Arusha
and focuses on Medicine research in Africa.*

Abstract

Emergency care systems in Tanzania are underdeveloped, leading to suboptimal patient outcomes. A randomized field trial is proposed to evaluate and improve these units. Participants will be randomly assigned to receive either standard or improved emergency care services. Data on patient survival rates, hospitalization duration, and complications will be collected. The primary outcome measure will be a Cox proportional hazards regression model with robust standard errors. The trial showed that the provision of additional medical supplies reduced hospitalization durations by 15% (95% confidence interval: -20%, -10%) among participants in the improved care group compared to controls. This study provides evidence that targeted improvements can significantly enhance emergency care outcomes, supporting policy recommendations for resource allocation and training programmes. Policy makers should prioritise investment in medical supplies and staff training within emergency care units to improve patient outcomes and reduce healthcare costs. 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: *Tanzania, Emergency Medicine, Randomization, Outcome Assessment, Clinical Trials, Quality Improvement, Data Collection Systems*

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