



Methodological Evaluation of Emergency Care Units in Tanzania: A Panel-Data Study on Clinical Outcomes

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Abstract

Emergency care units (ECUs) in Tanzania play a critical role in managing acute medical conditions. However, their effectiveness and efficiency have not been systematically evaluated. The analysis employs a fixed effects regression model to assess differences in clinical outcomes across ECUs. Data were collected through health facility records and validated with independent audits. A significant improvement in patient survival rates was observed ($p < 0.05$), indicating enhanced care protocols within some units, while others continued to struggle with treatment efficacy issues. The findings suggest that targeted interventions are necessary for improving the performance of Tanzania's ECUs, particularly those with lower survival rates. Health authorities should prioritise training and resource allocation in ECUs with suboptimal outcomes, focusing on evidence-based protocols and quality improvement initiatives. Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^T p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Tanzania, Emergency Care Units, Panel Data, Clinical Outcomes, Methodology, Health Systems Research, Geographic Information Systems

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