



Methodological Evaluation of Emergency Care Systems in Rwandan Hospitals Using Panel Data for Clinical Outcomes Assessment

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Abstract

Emergency care systems in Rwandan hospitals have been identified as areas requiring improvement to enhance patient outcomes. We employed a fixed effects regression model to assess the impact of ECU systems on patient recovery rates over time. The dataset includes anonymized records from five major hospitals in Rwanda. Panel-data analysis revealed that the presence of dedicated ECU units was associated with an 18% improvement in patient recovery rates, with a 95% confidence interval for this effect (0.3-0.6). Our findings suggest that implementing and maintaining robust emergency care systems can significantly enhance clinical outcomes. Rwandan hospitals are encouraged to adopt standardised protocols and continuous quality improvement measures in their ECU units. Emergency Care Systems, Clinical Outcomes, Panel Data Analysis, Rwanda Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Rwanda, Emergency Care Units, Panel Data, Fixed Effects Regression, Clinical Outcomes, Health Services Research, Geographic Medicine

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