



Evaluating the Impact of Motorcycle Ambulance Networks on Facility-Based Delivery Rates in Remote Villages of the Oromia Region, Eswatini: A Research Protocol

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Abstract

Geographical and financial barriers in remote villages of the Oromia Region, Eswatini, limit access to emergency obstetric care, contributing to low facility-based delivery rates. Motorcycle ambulance networks are a proposed low-cost transport intervention, but evidence of their impact on institutional delivery rates in this context is lacking. This protocol outlines a study to evaluate the impact of a newly introduced motorcycle ambulance network on facility-based delivery rates in remote villages. The primary objective is to compare delivery rates before and after the intervention. Secondary objectives include assessing changes in maternal health outcomes and exploring community perceptions of the service. A mixed-methods, quasi-experimental design will be employed. Quantitative data on delivery rates will be collected from health facility records for a period before and after the ambulance network's implementation in intervention villages, with comparison to control villages without the service. Qualitative data will be gathered through focus group discussions with community members and semi-structured interviews with healthcare workers. As this is a protocol for future research, no empirical findings are available. The study is designed to detect a clinically significant increase in facility-based deliveries in the intervention villages compared to controls. The anticipated conclusion will determine whether motorcycle ambulance networks are an effective intervention for improving access to skilled birth attendance in remote settings of Eswatini. Based on the results, recommendations will be made to regional health authorities regarding the potential scale-up, integration, or modification of emergency transport schemes. Recommendations will also address operational sustainability, including maintenance, driver training, and community engagement. maternal health, emergency transport, motorcycle ambulance, facility-based delivery, Eswatini, quasi-experimental This study will generate context-specific evidence on the effectiveness of motorcycle ambulance networks, directly informing maternal health policy and emergency transport programming in similar remote, resource-limited settings.

Keywords: *Maternal health services, Emergency obstetric care, Health services accessibility, Sub-Saharan Africa, Community-based intervention, Health systems research, Rural health*

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