# A Replication Study: Evaluating Heat-Stable Carbetocin for Postpartum Haemorrhage Prevention in Community Births in Oromia, Ethiopia

**M, e, k, d, e, s, A, b, e, b, e**

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# Abstract

Postpartum haemorrhage (PPH) is a leading cause of maternal mortality in low-resource settings. While the World Health Organisation recommends heat-stable carbetocin for PPH prevention, its effectiveness when administered by frontline health workers during community-based births requires further validation. This replication study evaluates this intervention within the specific context of community births in rural Ethiopia. The primary purpose was to replicate an evaluation of the effectiveness and feasibility of health extension workers administering heat-stable carbetocin for PPH prevention. Specific objectives were to assess the intervention's impact on PPH incidence, its practical implementation, and related maternal outcomes in a rural Oromia setting. A quasi-experimental design was employed in selected districts of the Oromia Region. Health extension workers were trained to administer intramuscular heat-stable carbetocin immediately after birth in the intervention group. The control group received standard oxytocin. Primary outcomes were the incidence of PPH (measured blood loss ≥500 ml) and the need for additional uterotonics. Data were collected through direct observation and calibrated blood collection. A reduction in PPH incidence was observed in the intervention group. The proportion of women experiencing PPH was 2.1% in the carbetocin group compared to 4.8% in the oxytocin group. Health extension workers successfully administered

the intervention in over 98% of cases, reporting the heat-stable formulation was practical for community storage and use. This replication study supports evidence that heat-stable carbetocin is an effective and feasible intervention for PPH prevention in community birth settings when administered by trained health extension workers. It confirms the drug's utility in contexts where cold-chain storage is challenging. Policy makers should consider the scale-up of heat-stable carbetocin within community-based maternal health programmes in comparable settings. Further operational research is recommended to guide integration into national guidelines and routine practice. postpartum haemorrhage, heat-stable carbetocin, community birth, health extension worker, Ethiopia, replication study This study provides replicated evidence on the implementation of heat-stable carbetocin within a routine community-based health system, contributing directly to the operational knowledge base for preventing postpartum haemorrhage in low-resource settings.