CIHR IRSC Canadian Institutes of Health Research
Instituts de recherche en santé du Canada

SAFETY OF ANAESTHESIA AT HEALTH CENTERS IN RURAL TANZANIA.

POLICY BRIEF
2020

Executive Summary

The government of Tanzania targets to expand the number of public health centers providing comprehensive emergency obstetrics and neonatal care (CEmONC) services from 12% in 2015 to 50% by 2020. Implementation of this policy has increased a demand for anaesthesia providers. Health care provers trained face-to-face for three months in anaesthesia in 2016 followed by post-training capacity building program for three consecutive years resulted into considerable quality and safety. The risk of death from anaesthetic complications was 1 per 1000 C-section deliveries. These findings bear considerable implications for policy change.

Introduction

Anaesthesia is essential for treatment of a wide range of surgical, trauma, obstetric and gynecological conditions. It is highly needed because, the burden of emergency surgical, trauma, obstetric and gynecological conditions requiring surgical interventions represent significant causes of morbidity and mortality in Tanzania. In view of the burden, the government is implementing its policy to expand the number of public health centers providing comprehensive emergency obstetric and neonatal care services from 12% in 2015 to 50% by 2020. Given a low density of specialist anaesthesiologists (equivalent to 0.02 specialist anaesthesiologists per 100,000 population) the government has adopted a task sharing strategy for provision of anaesthesia services. From 2016 to 2019 the Accessing Safe Delivery in Tanzania (ASDIT) project introduced and strengthened CEmONC services in five health centers (HCs) located in underserved rural areas in Morogoro region using clinical officers and nurse-midwives trained in anaessthesia.

Approach and Results

The intervention HCs were Kibati, Gairo, Dumila, Melela and Ngerengere and the control were Mlimba and Mkamba. A three month face-to-face training in anaesthesia took place at St. Francis Referral Hospital in Ifakara. To reinforce knowledge and skills this training was followed by post-training capacity building through quarterly supportive supervision and mentorship by an experienced anaesthetist. Mentorship activities included eLearning strategies, teleconsultation and clinical auditing of anaesthesia services and outcomes.

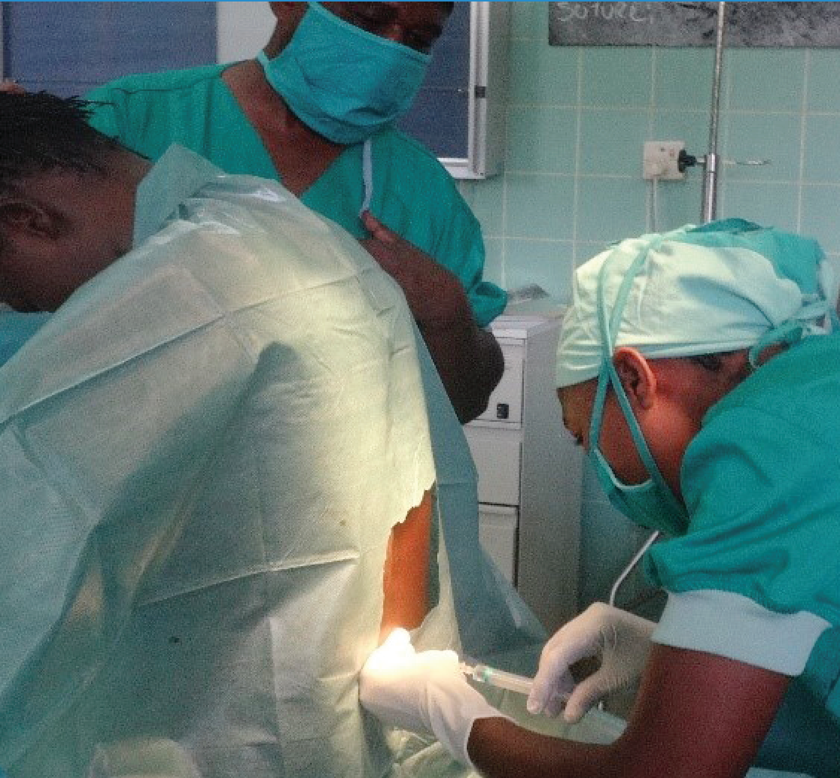
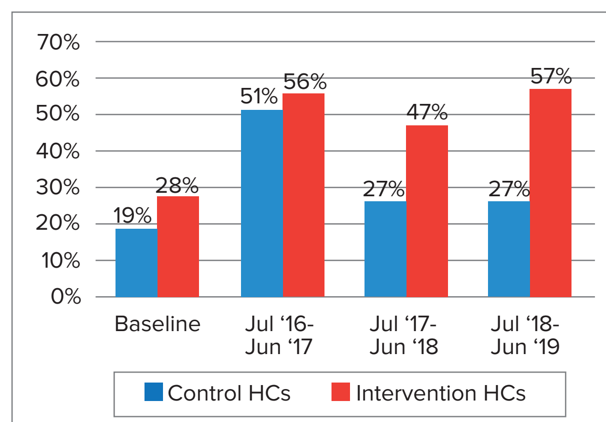


Photo: A nurse trained in anaesthesia providing spinal anesthesia to a pregnant woman before caesarean section at Ngerengere HC

During the intervention period there were 12,918 deliveries, 597 women with maternal morbidities and 22 maternal deaths in the intervention HCs. The number of caesarean sections (CS) performed in the intervention and control HCs during the intervention period (July 2016 – June 2019) were 2,179 and 969 respectively. All intervention and control HCs provided spinal anesthesia and ketamine for all obstetric surgeries. The proportion of CS performed under spinal anesthesia in intervention HCs increased from 28% (60 out of 214) at baseline (July 2014 – June 2016) to 57% (558 out of 971) in year three (July 2018 – June 2019), while in control group increased slightly (not significant) from 19% (92 out of 475) to 27% (68 out of 251) during the same period. Out of the 2,179 CS performed in the intervention facilities during the intervention period two women died from complications of anaesthesia. The risk of a woman dying from complications of anaesthesia in the intervention HCs was 1 per 1,000 caesarean deliveries. Maternal deaths in the control facilities were not audited because of absence of case files.

Figure 1. The proportions of C-sections performed under spinal anaesthesia before and during the intervention period in the intervention and control health centers.



Conclusion

The three months training program for clinical officers and nurse-midwives in anaesthesia complemented by supportive supervision and mentorship program is a safe, effective and an immediate solution that is currently saving lives of mothers and babies in underserved rural Tanzania. These results provide a body of evidence to scale-up surgical, trauma, obstetric and gynecological conditions with available mid-level health care providers.

Implications and Recommendations

Women and newborn in Tanzania should not die of complications of pregnancy and childbirth for lack of access to anaesthesia services. Since greater numbers of anaesthesia providers are urgently needed in Tanzania, this educational and mentoring program can be used to meet the demand for caesarean section services in underserved remote areas. These findings bear considerable implications for policy change and country's priorities.

Acknowledgments

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