

Title: Task shifting from doctors to nurses in the male circumcision program for HIV prevention in Botswana: A retrospective cohort study

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Background: Voluntary medical Male circumcision (VMMC) has been implemented as a strategy for HIV prevention in Botswana since 2009. Until 2015 VMMC surgical procedures were only performed by medical doctors. In 2015, in order to address health care provider's shortage, nurses were allowed to perform VMMC surgical procedures. Safety is a crucial feature and there was a need to establish whether procedures done by nurses are as safe as those done by doctors.

Methods: We conducted a retrospective cohort study aimed to determine the safety of VMMC surgical procedures performed by nurses in three VMMC clinics in Botswana between August 2015 and December 2016. We collected data on adverse events (AE), health care

provider profile, surgical techniques, and number of post-operative visits.

Findings: A total of 830 VMMC surgical procedures were included in this study. There was no difference in AE rates between VMMC procedures done by nurses and those done by doctors (1.4% for doctors and 1.2% for nurses, $p = 0.5197$). There were no differences between doctors and nurses for the potential confounders, surgical technique ($p=0.062$) and post op follow-up visits ($p=0.792$ for day 2, $p=0.448$ for day 7 and $p=0.274$ for day 42).

Conclusion: In conclusion, task shifting in the male circumcision program for HIV prevention, by allowing nurses to perform complete VMMC surgical procedures is safe.