

## Quarterly Research Digest on Voluntary Medical Male Circumcision for HIV Prevention

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### Combination HIV prevention and HIV testing

1. Moorhouse, L., et al. **Application of the HIV prevention cascade to identify, develop and evaluate interventions to improve use of prevention methods: examples from a study in east Zimbabwe.** *J Int AIDS Soc* 2019;22(Suppl 4): e25309.

Online at: <https://onlinelibrary.wiley.com/doi/full/10.1002/jia2.25309>

**INTRODUCTION:** The HIV prevention cascade could be used in developing interventions to strengthen implementation of efficacious HIV prevention methods, but its practical utility needs to be demonstrated. We propose a standardized approach to using the cascade to guide identification and evaluation of interventions and demonstrate its feasibility for this purpose through a project to develop interventions to improve HIV prevention methods use by adolescent girls and young women (AGYW) and potential male partners in east Zimbabwe.

**DISCUSSION:** We propose a six-step approach to using a published generic HIV prevention cascade formulation to develop interventions to increase motivation to use, access to and effective use of an HIV prevention method. These steps are as follows: (1) measure the HIV prevention cascade for the chosen population and method; (2) identify gaps in the cascade; (3) identify explanatory factors (barriers) contributing to observed gaps; (4) review literature to identify relevant theoretical frameworks and interventions; (5) tailor interventions to the local context; and (6) implement and evaluate the interventions using the cascade steps and explanatory factors as outcome indicators in the evaluation design. In the Zimbabwe example, steps 1-5 aided development of four interventions to overcome barriers to effective use of pre-exposure prophylaxis (PrEP) in

AGYW (15-24 years) and voluntary medical male circumcision in male partners (15-29). For young men, prevention cascade analyses identified gaps in motivation and access as barriers to voluntary medical male circumcision uptake, so an intervention was designed including financial incentives and an education session. For AGYW, gaps in motivation (particularly lack of risk perception) and access were identified as barriers to PrEP uptake: an interactive counselling game was developed addressing these barriers. A text messaging intervention was developed to improve PrEP adherence among AGYW, addressing reasons underlying lack of effective PrEP use through improving the capacity ("skills") to take PrEP effectively. A community-led intervention (community conversations) was developed addressing community-level factors underlying gaps in motivation, access and effective use. These interventions are being evaluated currently using outcomes from the HIV prevention cascade (step 6).

**CONCLUSIONS:** The prevention cascade can guide development and evaluation of interventions to strengthen implementation of HIV prevention methods by following the proposed process.

2. Kagaayi, J., et al. **Impact of combination HIV interventions on HIV incidence in hyperendemic fishing communities in Uganda: a prospective cohort study.** *Lancet HIV* 2019 Sep 15. [Epub ahead of print]

Online at: [https://www.thelancet.com/journals/lanhiv/article/PIIS2352-3018\(19\)30190-0/fulltext](https://www.thelancet.com/journals/lanhiv/article/PIIS2352-3018(19)30190-0/fulltext)

**BACKGROUND:** Targeting combination HIV interventions to locations and populations with high HIV burden is a global priority, but the impact of these strategies on HIV incidence is unclear. We assessed the impact of combination HIV interventions on HIV incidence in four HIV-hyperendemic communities in Uganda.

**METHODS:** We did an open population-based cohort study of people aged 15-49 years residing in four fishing communities on Lake Victoria. The communities were surveyed five times to collect self-reported demographic, behavioural, and service-uptake data. Free HIV testing was provided at each interview, with referral to combination HIV intervention services as appropriate. From November, 2011, combination HIV intervention services were rapidly expanded in these geographical areas. We evaluated trends in HIV testing coverage among all participants, circumcision coverage among male participants, antiretroviral therapy (ART) coverage and HIV viral load among HIV-positive participants, and sexual behaviours and HIV incidence among HIV-negative participants.

**FINDINGS:** From Nov 4, 2011, to Aug 16, 2017, data were collected from five surveys. Overall, 8942 participants contributed 20 721 person-visits; 4619 (52%) of 8942 participants were male. HIV prevalence was 41% (1598 of 3870) in the 2011-12 baseline

survey and declined to 37% (1740 of 4738) at the final survey ( $p < 0.0001$ ). 3222 participants who were HIV-negative at baseline, and who had at least one repeat visit, contributed 9477 person-years of follow-up, and 230 incident HIV infections occurred. From the first survey in 2011-12 to the last survey in 2016-17, HIV testing coverage increased from 68% (2613 of 3870) to 96% (4526 of 4738;  $p < 0.0001$ ); male circumcision coverage increased from 35% (698 of 2011) to 65% (1630 of 2525;  $p < 0.0001$ ); ART coverage increased from 16% (254 of 1598) to 82% (1420 of 1740;  $p < 0.0001$ ); and population HIV viral load suppression in all HIV-positive participants increased from 34% (546 of 1596) to 80% (1383 of 1734;  $p < 0.0001$ ). Risky sexual behaviours did not decrease over this period. HIV incidence decreased from 3.43 per 100 person-years (95% CI 2.45-4.67) in 2011-12 to 1.59 per 100 person-years (95% CI 1.19-2.07) in 2016-17; adjusted incidence rate ratio (IRR) 0.52 (95% CI 0.34-0.79). Declines in HIV incidence were similar among men (adjusted IRR 0.53, 95% CI 0.30-0.93) and women (0.51, 0.27-0.96). The risk of incident HIV infection was lower in circumcised men than in uncircumcised men (0.46, 0.32-0.67).

**INTERPRETATION:** Rapid expansion of combination HIV interventions in HIV-hyperendemic fishing communities is feasible and could have a substantial impact on HIV incidence. However, incidence remains higher than HIV epidemic control targets, and additional efforts will be needed to achieve this global health priority.

**FUNDING:** The National Institute of Mental Health, the National Institute of Allergy and Infectious Diseases, the National Institute of Child Health and Development, the National Cancer Institute, the National Institute for Allergy and Infectious Diseases Division of Intramural Research, Centers for Disease Control and Prevention Uganda, Karolinska Institutet, and the Johns Hopkins University Center for AIDS Research.

3. Mark, J., et al. **Male partner linkage to clinic-based services for sexually transmitted infections and HIV.** *Sex Transm Dis* 2019 August 23. [Epub ahead of print]

**BACKGROUND:** Home-based HIV testing and education has increased HIV test uptake and access to health services among men. We studied how a home-based antenatal intervention influenced male partner utilization of clinic-based HIV and sexually transmitted infection (STI) services, linkage to HIV care and medical circumcision.

**METHODS:** We conducted a secondary analysis within a randomized controlled trial of pregnant women attending antenatal care in Kenya. Women and their male partners received either a home-based couple intervention or an invitation letter for clinic-based couple HIV testing. The home-based intervention included education on STI symptoms, STI and HIV treatment and male circumcision for HIV prevention. Male self-reported outcomes were compared using relative risks at 6 months postpartum.

**RESULTS:** Among 525 women, we reached 487 of their male partners (93%); 247 men in the intervention arm and 240 men in the control arm. Men who received the

intervention were more likely to report an STI consultation [n=47 vs. 16; RR=1.59; 95%CI=1.33-1.89]. Among 23 men with newly diagnosed HIV, linkage to HIV care was reported by 4 of 15 in the intervention (3 men had missing linkage data) and 3 of 5 men in the control arms [RR=0.66; 95%CI: 0.34-1.29 ]. While the intervention identified 3 times more men with new HIV infection, the study lacked power to find significant differences in linkage to HIV care. Few eligible men sought medical circumcision (4 of 72 intervention and 2 of 88 control).

**CONCLUSIONS:** Home-based couple education and testing increased STI consultations among male partners of pregnant women, but appeared insufficient to overcome the barriers involved in linkage to HIV care and medical circumcision.

4. Makhema, J., et al. **Universal testing, expanded treatment, and incidence of HIV infection in Botswana.** *N Engl J Med* 2019;381(3): 230-242.

Online at: <https://www.nejm.org/doi/10.1056/NEJMoa1812281>

**BACKGROUND:** The feasibility of reducing the population-level incidence of human immunodeficiency virus (HIV) infection by increasing community coverage of antiretroviral therapy (ART) and male circumcision is unknown.

**METHODS:** We conducted a pair-matched, community-randomized trial in 30 rural or periurban communities in Botswana from 2013 to 2018. Participants in 15 villages in the intervention group received HIV testing and counseling, linkage to care, ART (started at a higher CD4 count than in standard care), and increased access to male circumcision services. The standard-care group also consisted of 15 villages. Universal ART became available in both groups in mid-2016. We enrolled a random sample of participants from approximately 20% of households in each community and measured the incidence of HIV infection through testing performed approximately once per year. The prespecified primary analysis was a permutation test of HIV incidence ratios. Pair-stratified Cox models were used to calculate 95% confidence intervals.

**RESULTS:** Of 12,610 enrollees (81% of eligible household members), 29% were HIV-positive. Of the 8974 HIV-negative persons (4487 per group), 95% were retested for HIV infection over a median of 29 months. A total of 57 participants in the intervention group and 90 participants in the standard-care group acquired HIV infection (annualized HIV incidence, 0.59% and 0.92%, respectively). The unadjusted HIV incidence ratio in the intervention group as compared with the standard-care group was 0.69 (P = 0.09) by permutation test (95% confidence interval [CI], 0.46 to 0.90 by pair-stratified Cox model). An end-of-trial survey in six communities (three per group) showed a significantly greater increase in the percentage of HIV-positive participants with an HIV-1 RNA level of 400 copies per milliliter or less in the intervention group (18 percentage points, from 70% to 88%) than in the standard-care group (8 percentage points, from 75% to 83%) (relative risk, 1.12; 95% CI, 1.09 to 1.16). The percentage of men who

underwent circumcision increased by 10 percentage points in the intervention group and 2 percentage points in the standard-care group (relative risk, 1.26; 95% CI, 1.17 to 1.35).

**CONCLUSIONS:** Expanded HIV testing, linkage to care, and ART coverage were associated with increased population viral suppression. (Funded by the President's Emergency Plan for AIDS Relief and others; Ya Tsie ClinicalTrials.gov number, NCT01965470.)

### Enhancing uptake of VMMC

1. Ensor, S., et al. **The effectiveness of demand creation interventions for voluntary male medical circumcision for HIV prevention in sub-Saharan Africa: a mixed methods systematic review.** *J Int AIDS Soc* 2019;22(Suppl 4): e25299.

Online at: <https://onlinelibrary.wiley.com/doi/full/10.1002/jia2.25299>

**INTRODUCTION:** UNAIDS has recommended that in 14 countries across sub-Saharan Africa (SSA), 90% of men aged 10 to 29 years should be circumcised by 2021 to help reduce transmission of HIV. To achieve this target demand creation programmes have been widely implemented to increase demand for Voluntary Medical Male Circumcision (VMMC). This review explores the effectiveness of demand creation interventions and factors affecting programme implementation.

**METHODS:** We completed a mixed methods systematic review searching Medline, Embase, Global health, psycINFO and CINAHL databases in August 2018 with no time restrictions. Demand creation interventions conducted in SSA were categorized and quantitative data about VMMC uptake was used to compare relative and absolute effectiveness of interventions. Qualitative data were summarized into themes relevant to the delivery and impact of programmes.

**RESULTS AND DISCUSSION:** Eighteen of the 904 titles were included in the review. Effective interventions were identified in each demand creation category: financial incentives, counselling or education, involvement of influencers and novel information delivery. Of the 11 randomized controlled trials (RCTs), the greatest absolute impact on VMMC prevalence was seen with a complex intervention including VMMC promotion training for religious leaders (compared to control: 23% (95% CI 22.8 to 23.8) absolute increase; odds ratio (OR) 3.2 (1.4 to 7.3)). Financial incentives generally produced the largest relative effects with men up to seven-times more likely to undergo VMMC in the intervention arm compared to control (adjusted OR 7.1 (95% CI 2.4 to 20.8), 7.1% (3.7 to 10.5) absolute increase). Qualitative findings suggest that interventions are more impactful when they are judged appropriate and acceptable by the target population; delivered by people with relevant personal experience; and addressing broader social and cultural influences through partnership with and education of community leaders.

**CONCLUSIONS:** A range of demand creation interventions can increase VMMC uptake. The most acceptable and effective interventions are financial incentives framed as fair compensation (relative effect) and programmes of education or counselling delivered by people who are influential in the community (absolute effect). Future research should include larger studies with longer follow-up and a consistent definition of VMMC uptake.

2. Wang, Z., et al. **A randomized controlled trial evaluating efficacy of a brief setting-based and theory-based intervention promoting voluntary medical male circumcision among heterosexual male sexually transmitted disease patients in China.** *AIDS Behav* 2019;23(9): 2453-2466.

Voluntary medical male circumcision (VMMC) is an evidence-based biomedical HIV prevention but under-utilized by male sexually transmitted diseases patients (MSTDP) in China. A parallel-group, non-blinded randomized controlled trial was conducted. Participants were uncircumcised heterosexual MSTDP attending four sexually transmitted diseases (STD) clinics in three Chinese cities. A total of 244 MSTDP were randomized 1:1 into the intervention group (n = 108) and the control group (n = 136). In addition to the education booklet received by the control group, the intervention group watched a 10-min video clip and received a brief counseling delivered by clinicians in the STD clinics. The interventions were developed based on the Health Belief Model and the Theory of Planned Behavior. At Month 6, participants in the intervention group reported significantly higher uptake of VMMC (14.8% versus 2.9%; RR 5.03, 95% CI 1.73, 14.62, p = 0.001). The brief STD clinic-based intervention was effective in increasing VMMC uptake among MSTDP in China.

**TRIAL REGISTRY:** This study is registered at ClinicalTrials.gov, number NCT03414710. <https://clinicaltrials.gov/ct2/show/NCT03414710> .

## Epidemiological studies

1. Zhang, C., et al. **Voluntary medical male circumcision and HIV infection among men who have sex with men: Implications from a systematic review.** *SAGE Open Med* 2019 7: 2050312119869110.

Online at: <https://journals.sagepub.com/doi/10.1177/2050312119869110/>

**BACKGROUND:** With the rapidly-increased HIV epidemic among men who have sex with men worldwide, the effectiveness of voluntary medical male circumcision as the tool of HIV prevention still remains undetermined.

**PURPOSE:** In the current study, we conducted a systematic review and meta-analysis to assess the association between voluntary medical male circumcision and HIV risk among men who have sex with men.

**METHODS AND CONCLUSION:** Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guideline, we conducted a comprehensive literature search through multiple databases. A total of 37 articles/abstracts were included in the analysis. We employed random-effects models and subgroup analyses based upon key study characteristics derived from empirical studies. A total of 117,293 men who have sex with men were included in the meta-analysis, and no randomized control trials have been identified. The odds of being HIV positive were 7% lower among men who have sex with men who were circumcised than among men who have sex with men who were uncircumcised (adjusted odds ratio, 0.93; 95% confidence interval, 0.88-0.99). The evidence for the potential protective effect of voluntary medical male circumcision was stronger among men who have sex with men in Asia and Africa (adjusted odds ratio, 0.62; 95% confidence interval, 0.53-0.73). Our meta-analyses may suggest a protective effect of voluntary medical male circumcision against HIV infection among men who have sex with men, especially in settings like Asia/Africa.

### Male circumcision methods, including devices

1. Odoyo-June, E., et al. **Rollout of ShangRing circumcision with active surveillance for adverse events and monitoring for uptake in Kenya.** *PLoS One* 2019;14(9): e0222942.

Online at: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0222942>

**INTRODUCTION:** Since 2011, Kenya has been evaluating ShangRing device for use in its voluntary medical male circumcision (VMMC) program according to World Health Organization (WHO) guidelines. Compared to conventional surgical circumcision, the ShangRing procedure is shorter, does not require suturing and gives better cosmetic outcomes. After a pilot evaluation of ShangRing in 2011, Kenya conducted an active surveillance for adverse events associated with its use from 2016-2018 to further assess its safety, uptake and to identify any operational bottlenecks to its widespread use based on data from a larger pool of procedures in routine health care settings.

**METHODS:** From December 2017 to August 2018, HIV-negative VMMC clients aged 13 years or older seeking VMMC at six sites across five counties in Kenya were offered ShangRing under injectable local anesthetic as an alternative to conventional surgical circumcision. Providers described both procedures to clients before letting them make a choice. Outcome measures recorded for clients who chose ShangRing included the proportions who were clinically eligible, had successful device placement, experienced adverse events (AEs), or failed to return for device removal. Clients failing to return for follow up were sought through phone calls, text messages or home visits to ensure removal and complete information on adverse events.

**RESULTS:** Out of 3,692 eligible clients 1,079 (29.2%) chose ShangRing; of these, 11 (1.0%) were excluded due to ongoing clinical conditions, 17 (1.6%) underwent conventional surgery due to lack of appropriate device size at the time of the procedure,

97.3% (1051/1079) had ShangRing placement. Uptake of ShangRing varied from 11% to 97% across different sites. There was one severe AE, a failed ShangRing placement (0.1%) managed by conventional wound suturing, plus two moderate AEs (0.2%), post removal wound dehiscence and bleeding, that resolved without sequelae. The overall AE rate was 0.3%. All clients returned for device removal from fifth to eleventh day after placement.

**CONCLUSION:** ShangRing circumcision is effective and safe in the Kenyan context but its uptake varies widely in different settings. It should be rolled out under programmatic implementation for eligible males to take advantage of its unique benefits and the freedom of choice beyond conventional surgical MMC. Public education on its availability and unique advantages is necessary to optimize its uptake and to actualize the benefit of its inclusion in VMMC programs.

2. Barone, M. A., et al. **Simplifying the ShangRing technique for circumcision in boys and men: use of the no-flip technique with randomization to removal at 7 days versus spontaneous detachment.** *Asian J Androl* 2019;21(4): 324-331.

Online at: <http://www.ajandrology.com/article.asp?issn=1008-682X;year=2019;volume=21;issue=4;spage=324;epage=331;aualast=Barone>

To assess safety of the no-flip ShangRing male circumcision technique and to determine clinical course and safety of spontaneous detachment (i.e., allowing the device to fall off), we conducted a case series of no-flip ShangRing circumcision combined with a randomized controlled trial of removal 7 days postcircumcision versus spontaneous detachment at two health facilities in Kenya. The primary outcome was the safety of the no-flip technique based on moderate and severe adverse events (AEs) during the procedure and through 42-day follow-up. A main secondary outcome was clinical course and safety of spontaneous detachment. Two hundred and thirty males 10 years and older underwent no-flip circumcision; 114 randomized to 7-day removal and 116 to spontaneous detachment. All circumcisions were successfully completed. Overall 5.3% (6/114) of participants in the 7-day group and 1.7% (2/116) in the spontaneous group had an AE; with no differences when compared to the 3% AE rate in historical data from African studies using the original flip technique ( $P = 0.07$  and  $P = 0.79$ , respectively). Overall 72.4% (84/116) of participants in the spontaneous group wore the ShangRing until it detached. Among the remaining (27.6%; 32/116), the ring was removed, primarily at the participants' request, due to pain or discomfort. There was no difference in AE rates ( $P = 0.169$ ), visit day declared healed ( $P = 0.324$ ), or satisfaction ( $P = 0.371$ ) between randomization groups. The median time to detachment was 14.0 (IQR: 7-21, range: 5-35) days. The no-flip technique and spontaneous detachment are safe, effective, and acceptable to boys and men 10 years and older. Phimosis and penile adhesions do not limit successful ShangRing circumcision with the no-flip technique.



3. Wang, Y., et al. **Commentary on “Simplifying the ShangRing technique for circumcision in boys and men: use of the no-flip technique with randomization to removal at 7 days versus spontaneous detachment”**. *Asian J Androl* 2019;21(4): 423-24.

Online at: <http://www.ajandrology.com/article.asp?issn=1008-682X;year=2019;volume=21;issue=4;spage=423;epage=424;aulast=Wang>

It has been 10 years since we published the first report describing use of the ShangRing for circumcision in boys and men. ... Given that the ShangRing can potentially be used with all ages of boys and men, wider introduction of the device could significantly simplify delivery of VMMC services, an important part of comprehensive programs to reduce HIV transmission in Sub-Saharan Africa, helping to achieve the ambitious goal set by the World Health Organization and UNAIDS of achieving 27 million VMCMs by 2020.

4. Awori, Q., et al. **Use of topical versus injectable anaesthesia for ShangRing circumcisions in men and boys in Kenya: results from a randomized controlled trial**. *PLoS One* 2019;14(8): e0218066.

Online at:

<https://journals.plos.org/plosone/article/comments?id=10.1371/journal.pone.0218066>

**BACKGROUND:** The ShangRing is a disposable, collar clamp circumcision device pre-qualified for use in men and boys 13 years and above. It has been shown to be faster than conventional circumcision with comparable adverse event (AE) rates and high client satisfaction. Voluntary medical male circumcision (VMMC) has been shown to dramatically reduce the risk of HIV acquisition in males. However, the fear of pain during circumcision is an important barrier to uptake. Use of topical anesthesia thus presents an opportunity to address this.

**OBJECTIVES:** We sought to evaluate the safety, effectiveness and acceptability of the use of topical anaesthesia with ShangRing circumcision of men and boys 10 years of age and above.

**METHODS:** Participants were randomised 2:1 to receive topical or injectable anaesthesia. All participants underwent no-flip ShangRing circumcision. The primary outcome measure was pain. Secondary outcomes included ease of use of topical versus injectable anaesthesia, AEs and participant satisfaction.

**RESULTS:** Compared to the topical group, participants in the injectable group reported significantly more pain on administration of the anesthesia and at approximately 20 minutes after the procedure. In the topical group, sufficient anaesthesia with topical cream was not achieved in 21 (9.3%) cases before the start of the procedure; in another 6 (2.6%), supplementary injectable anaesthesia was required as the circumcision was

being carried out. The AE rate was significantly lower ( $p < 0.01$ ) in the topical (0%) vs. the injectable group (4.2%). The most common AE was pain during the post-operative period. All AEs were managed conservatively and resolved without sequelae. 96.7% of participants were satisfied with the appearance of the healed penis and 100% would recommend the ShangRing to others. All seven male circumcision providers involved in the study preferred topical to injectable anaesthesia.

**CONCLUSIONS:** Our results demonstrate the safety, improved clinical experience, effectiveness, and acceptability of the use of topical anaesthesia in ShangRing circumcision using the no-flip technique. Topical anaesthesia effectively eliminates needlestick pain from the clients' VMMC experience and thus has the potential to increase demand for the service.

**TRIAL REGISTRATION:** ClinicalTrials.gov NCT02390310.

### Public health policy

1. Morris, B. J., et al. **Critical evaluation of arguments opposing male circumcision: A systematic review.** *J Evid Based Med* 2019 Sep 8. [Epub ahead of print]

Online at: <https://onlinelibrary.wiley.com/doi/full/10.1111/jebm.12361>

**OBJECTIVE:** To systematically evaluate evidence against male circumcision (MC).

**METHODS:** We searched PubMed, Google Scholar, EMBASE and Cochrane databases.

**RESULTS:** Database searches retrieved 297 publications for inclusion. Bibliographies of these yielded 101 more. After evaluation we found: Claims that MC carries high risk were contradicted by low frequency of adverse events that were virtually all minor and easily treated with complete resolution. Claims that MC causes psychological harm were contradicted by studies finding no such harm. Claims that MC impairs sexual function and pleasure were contradicted by high-quality studies finding no adverse effect. Claims disputing the medical benefits of MC were contradicted by a large body of high-quality evidence indicating protection against a wide range of infections, dermatological conditions, and genital cancers in males and the female sexual partners of men. Risk-benefit analyses reported that benefits exceed risks by 100-200 to 1. To maximize benefits and minimize risks, the evidence supported early infant MC rather than arguments that the procedure should be delayed until males are old enough to decide for themselves. Claims that MC of minors is unethical were contradicted by balanced evaluations of ethical issues supporting the rights of children to be provided with low-risk, high-benefit interventions such as MC for better health. Expert evaluations of case-law supported the legality of MC of minors. Other data demonstrated that early infant MC is cost-saving to health systems.

**CONCLUSIONS:** Arguments opposing MC are supported mostly by low-quality evidence and opinion, and are contradicted by strong scientific evidence.

2. Bulled, N. **Public health's social contract: an obstacle in the advancement of effective HIV technologies.** *Glob Public Health* 2019;14(9): 1264-1274.

Evidence from the past 40 years of HIV technology development and implementation indicates that the public health social contract - with its expectations of patient/citizen compliance - has hampered global disease control efforts. Despite the availability of a wide array of effective technologies, including antiretroviral drugs as treatment and prevention, voluntary medical male circumcision procedures, and newly developed intravaginal ring products, new infections among adults globally have not decreased significantly. In this paper, I describe a historical trend of limiting access to effective biomedical technologies to those deemed most deserving and compliant given concerns of misuse (non-adherence), product repurposing (not using the product for purposes originally intended), and the incitement of autonomy (increasing the risk of public exposure to diseases given personal protection from a specific disease). Examining the expectations of good citizenship (compliance, adherence, appropriate product use, and continued risk reduction) as it relates to human-technology interactions, reveals a continuing narrative of initially restricting access to newer technologies perceived fragile or costly based on an assessment of patient/citizen worth. In this, the conventional public health social contract continues to be an obstacle in the advancements of technologies to effectively reduce the global burden of HIV.

## Safety and quality

1. Hellar, A., et al. **Adverse events in a large-scale VMMC programme in Tanzania: findings from a case series analysis.** *J Int AIDS Soc* 2019;22(7): e25369.  
Online at: <https://onlinelibrary.wiley.com/doi/full/10.1002/jia2.25369>

**INTRODUCTION:** Adverse events (AEs) rates in voluntary medical male circumcision (VMMC) are critical measures of service quality and safety. While these indicators are key, monitoring AEs in large-scale VMMC programmes is not without challenges. This study presents findings on AEs that occurred in eight years of providing VMMC services in three regions of Tanzania, to provide discussion both on these events and the structural issues around maintaining safety and quality in scaled-up VMMC services.

**METHODS:** We look at trends over time, demographic characteristics, model of VMMC and type and timing of AEs for 1307 males who experienced AEs among all males circumcised in Tabora, Njombe and Iringa regions from 2009 to 2017. We analysed deidentified client data from a VMMC programme database and performed multivariable logistic regression with district clustering to determine factors associated with intraoperative and postoperative AEs among VMMC clients. RESULTS AND

**DISCUSSION:** Among 741,146 VMMC clients, 0.18% (1307/741,146) experienced a moderate or severe AE. The intraoperative AE rate was 2.02 per 100,000 clients, and postoperative rate was 2.29 per 1000 return clients. Multivariable logistic regression showed that older age (20 to 29 years) was significantly associated with intraoperative AEs (aOR: 3.51, 95% CI: 1.17 to 10.6). There was no statistical significant difference in AE rates by surgical method. Mobile VMMC service delivery was associated with the lowest risk of experiencing postoperative AEs (aOR:0.64, 95% CI: 0.42 to 0.98). AE rates peaked in the first one to three years of the programme and then steadily declined.

**CONCLUSIONS:** In a programme with robust AE monitoring methodologies, AE rates reported in these three regions were very low and declined over time. While these findings support the safety of VMMC services, challenges in reporting of AEs in a large-scale VMMC programme are acknowledged. International and national standards of AE reporting in VMMC programmes are clear. As VMMC programmes transition to national ownership, challenges, strengths and learning from AE reporting systems are needed to support safety and quality of services.

2. Manentsa, M., et al. **Complications of high volume circumcision: glans amputation in adolescents; a case report.** *BMC Urol* 2019;19(1): 65.

Online at: <https://bmcurol.biomedcentral.com/articles/10.1186/s12894-019-0462-8>

**BACKGROUND:** The past four years has seen a rapid roll-out of male medical circumcision services in South Africa in response to clinical trials showing circumcision prevents HIV acquisition in heterosexual men. Clinics conduct substantial numbers of circumcisions per day. We report three cases of glans amputation in adolescents attending high volume clinics where modified Models of Optimising Volume and Efficiency (MOVE) are implemented.

**CASE PRESENTATIONS:** Three cases of glans amputation in young healthy men that presented for voluntary medical male circumcision. The procedures were performed by highly experienced medical officers in two cases. All these cases shared characteristics: younger males with immature genitalia, forceps guided circumcision, and likely operator fatigue. Voluntary male medical circumcision programs should include regular monitoring and evaluation and training of operators to ensure high quality surgical techniques such as working in clean areas and taking frequent breaks.

**CONCLUSION:** Circumcision is a relatively simple medical procedure, however regular training and quality control in high volume Male Medical Circumcision sites is essential to prevent rare catastrophic adverse events.

3. Luseno, W. K., et al. **Consent challenges and psychosocial distress in the scale-up of voluntary medical male circumcision among adolescents in western Kenya.** *AIDS Behav* 2019 Aug 2. [Epub ahead of print]

In priority sub-Saharan African countries, on the ground observations suggest that the success of voluntary medical male circumcision (VMMC) programs should not be based solely on numbers of males circumcised. We identify gaps in the consent process and poor psychosocial outcomes among a key target group: male adolescents. We assessed compliance with consent and assent requirements for VMMC in western Kenya among males aged 15-19 (N = 1939). We also examined differences in quality of life, depression, and anticipated HIV stigma between uncircumcised and circumcised adolescents. A substantial proportion reported receiving VMMC services as minors without parent/guardian consent. In addition, uncircumcised males were significantly more likely than their circumcised peers to have poor quality of life and symptoms of depression. Careful monitoring of male adolescents' well-being is needed in large-scale VMMC programs. There is also urgent need for research to identify effective strategies to address gaps in the delivery of VMMC services.

#### Social and behavioural research

1. George, C., et al. **Getting to zero new HIV Infections in the Caribbean: knowledge and attitudes toward male circumcision among adolescent males in the Bahamas.** *Am J Mens Health* 2019;13(4): 1557988319872074.

Online at: <https://journals.sagepub.com/doi/10.1177/1557988319872074>

Male circumcision (MC) plays a significant role in reducing new HIV infections, particularly in high prevalence countries. This cross-sectional study assesses the prevalence of MC and attitudes toward MC among youth aged 15-18 years in The Bahamas, a medium HIV prevalence country. The survey included 797 young men who completed a questionnaire on MC. Data analyses included chi-squared tests. The self-reported prevalence of MC among youth was 16.7% (121/759). Most of the circumcised youth were circumcised as infants, 84% (107/121) were pleased with their circumcision, and 71% would recommend it to others. For uncircumcised youth, 35% (189/533) would consider voluntary male circumcision (VMC) and 26% would recommend MC to others. In all scenarios, circumcised youth were more likely to be positive about MC. Among uncircumcised young men, being older (17-18 years compared to 15-16 years) was the only variable statistically associated with considering MC or recommending MC. After being presented with information on the benefits of MC for HIV prevention, the number of men who were positive about MC increased. Most of the young men in this cohort would consider VMC for reducing HIV incidence. Also, many stated that, if they had a male child, they would have him circumcised. The attitudes of these youth emphasize

he need to provide information on HIV in addition to general health benefits of MC if there were to be a sustainable MC program within this population.

### Traditional male circumcision

1. Sivhabu, V., et al. **Constructions of sexuality and HIV risk among young people in Venda, South Africa: implications for HIV prevention.** *Afr J AIDS Res* 2019;18(2): 158-167.

The study explored constructions of sexuality among young people of Venda in Limpopo, South Africa, and cultural practices that can be used to develop context-specific HIV prevention programmes. HIV prevention can be promoted by including some cultural practices in prevention programmes and changing some aspects of culture that may contribute negatively to health. Six focus group discussions were held with school-going young people (Grades 10 to 12) in urban and rural areas to explore their constructions of sexuality and HIV risk. Four focus group discussions were held with community leaders in the same areas to explore their constructions of young people's sexuality and cultural practices relevant to HIV prevention. Through discourse analysis, the following dominant discourses that influence young people's sexual risk behaviour were identified: rite of passage, the male sexual drive discourse (sex is natural and unavoidable); discourse of hegemonic masculinity (sex to prove masculinity); sex as a commodity; non-adherence to cultural practices; and HIV is normalised (AIDS is like flu). Some alternative constructions and shifts in gender norms were noticed, especially among female participants. The constructions of young people were not culture-specific but similar to those identified in other South African cultures. Community leaders identified a few cultural practices that could be considered in HIV prevention, for example, reinstating the rite of passage to provide age-appropriate sex and HIV education (behavioural intervention), and promoting traditional male circumcision (biological intervention). Cultural practices that contribute negatively to health should be challenged such as current constructions of gender roles (masculinity and femininity) and the practice that parents do not talk to young people about sex (both structural interventions).

2. Prusente, S., et al. **Exploring factors influencing integration of traditional and medical male circumcision methods at Ingquza Hill Local Municipality, Eastern Cape: a socio-ecological perspective.** *Afr J Prim Health Care Fam Med* 2019;11(1): e1-e11.

Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6739517/>

**BACKGROUND:** Medical male circumcision (MMC) and traditional male circumcision (TMC) are reportedly having negative and positive outcomes in the Eastern Cape province. Researchers show contradictory remedies; some advocate for abolishment of TMC and others call for the integration of both methods.

**AIM:** This study aimed to explore factors influencing the integration of TMC and MMC at different socio-ecological levels.

**SETTING:** The study was conducted at Ingquza Hill Local Municipality in the Eastern Cape province.

**METHODS:** An explorative qualitative study design, using in-depth interviews (IDIs) and focus group discussions (FGDs), was employed in this study. Purposive sampling was used to select the participants. A framework analysis approach was used to analyse the data, and the themes were developed in line with the socio-ecological model.

**RESULTS:** Four main themes emerged from the data as important in influencing the integration of TMC and MMC methods. These included: (1) individual factors, related to circumcision age eligibility and post-circumcision behaviour; (2) microsystem factors, related to alcohol and drug abuse, peer pressure, abuse of initiates, and family influence; (3) exosystem factors, related to financial gains associated with circumcision and the role of community forums; and (4) macrosystem factors, related to stigma and discrimination, and male youth dominance in circumcision practices.

**CONCLUSION:** Male circumcision in this area is influenced by complex factors at multiple social levels. Interventions directed at all of these levels are urgently needed to facilitate integration of the TMC and MMC methods.