Published on *Treatment Action Campaign* (http://tac.org.za/community)

Making progress on prevention: TAC Policy Brief on Voluntary Male Medical Circumcision

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Created *2009/11/24 - 11:59am*
24 November, 2009 - 11:59 ? moderator

A goal of the HIV & AIDS and STI Strategic Plan for South Africa 2007-2011 (NSP) is to reduce new infections by half over the five-year period of the plan. Is it difficult to measure progress towards this goal because of a lack of reliable data on HIV incidence. Nevertheless, policy improvements around voluntary male medical circumcision and prevention of mother-to-child transmission (PMTCT) will significantly reduce new infections.

This is the first part of a two-part TAC policy brief. This part deals with voluntary male medical circumcision and the next one, which will be released in early 2010, deals with PMTCT.

Part One: Voluntary Male Medical Circumcision (VMMC)

Summary

It is two and a half years since TAC published its briefing on VMMC. [1] Since then, in Southern Africa, over 3,000 VMMCs have been carried out by the Family Life Association of Swaziland. Zambia has performed nearly 8,000 and Zimbabwe just under 1,300. Yet comparatively little progress has been made making this affordable intervention (about R300 per VMMC) available beyond Orange Farm in South Africa, where several thousand circumcisions have been performed in an ANRS sponsored research project. PEPFAR, the Global Fund and the Gates Foundation have committed to funding VMMC, but South Africa has not made use of this opportunity. [2]

The key recommendation of this brief is that the South African National AIDS Council (SANAC) needs to move quickly to adopt a policy that promotes the scaling up of VMMC and that the Department of Health must ensure this policy is implemented. It is at over four years since the results of the first circumcision trial were published; South Africa should have scaled up beyond Orange Farm by now.

Evidence for the benefts of VMMC
The evidence that circumcised heterosexual males have less risk of contracting HIV is compelling. Three randomised controlled clinical trials conducted in high-prevalence areas in sub-Saharan Africa, whose resuts have been published in reputable medical journals, have found that the risk of HIV-negative males contracting HIV is reduced by 50 to 60% when they are circumcised. [3], [4], [5] Evidence from two of these trial settings, Orange Farm and Rakai, Uganda, shows that VMMC also reduces the risk of men contracting Human Pappiloma Virus (HPV). [6], [7] A trial in Rakai also found that VMCC reduces the risk of men contracting Herpes Simplex Virus-2 (HSV-2). [7]

The benefits of VMMC for the female partners of circumcised men have also been shown. Women partners of circumcised men are less likely to contract trichomoniasis and bacterial vaginosis. VMMC also reduces the risk of symptomatic ulceration in HIV-negative men and women and HIV-positive men. [7], [8]

A UNAIDS/WHO/SACEMA expert review of mathematical models of VMMC found:

* There would be large benefits of male circumcision among heterosexual men in low male circumcision, high HIV

prevalence settings. The review found that one HIV infection would be averted for every five to 15 male circumcisions performed
* They found that the cost of averting one HIV infection ranges from R1,125 (US$150) to R6,750 (US$900) using a 10 year time horizon.
* Critically they found that women benefit indirectly from reduced HIV prevalence in circumcised male partners and that VMMC service scale-up "acts synergistically with other strategies to reduce HIV disease burden." [9]

A review of the risks and benefits of circumcision for women, published in The Lancet in July, states:

Although circumcision of HIV-infected men does not seem to directly reduce HIV risk for their female partners in the short term, women will benefit from male circumcision programmes. Wide-scale roll-out of male circumcision is expected to lead to decreasing HIV prevalence in communities over 10?20 years, in both men and women, by averting new infections in men and onward transmission to their partners.8 On a shorter timescale, a woman's HIV risk would be substantially reduced if circumcision prevents her male partner from acquiring HIV. Indeed, anecdotal reports suggest that interest in circumcision in young men in the first roll-out programmes in Africa is in part being driven by women's preference for circumcised partners. Finally, women with circumcised partners, irrespective of HIV serostatus, face decreased risk of sexually transmitted infections such as Trichomonas vaginalis, bacterial vaginosis, herpes simplex virus type 2, and human papillomavirus. [10]

Circumstances where VMMC has no proven benefits for HIV
There are circumstances where VMMC appears to have no proven benefits for HIV:

* Circumcised HIV-positive men do not have a lower risk of passing HIV to their female partners. A trial testing this was ended early by its Data Safety Monitoring Board because of futility. (NB: The 2007 TAC briefing indicated that there was some evidence this was benefit of circumcision. This was based on the best evidence at the time, but is now not supported by the evidence.) [11]
* There is no compelling evidence that VMMC reduces the risk of transmission in homosexual sex.

Evidence for the safety of VMMC
No surgical procedure is risk-free, but the evidence for the safety of VMMC is considerable:

* Over 50,000 VMMCs have been performed in sub-Saharan Africa as part of trials and projects to reduce the risk of transmission from HIV. There are no reported cases of serious permanent adverse events.
* The balance of evidence indicates that VMMC does not cause sexual dissatisfaction or dysfunction. [12]

No evidence for risk compensation
An argument offered against VMMC is that it will result in risk compensation behaviour, i.e. that men would take sexual risks in the belief that they are protected from HIV transmission. Furthermore, that this risk-taking would have negative effects on women's rights.

No evidence has been offered for this view. It is often simply asserted. But a study of risk compensation behaviour in one of the three trials found that it did not occur. [13] In a real world setting in Kenya, i.e. outside of a trial, no evidence was found of risk compensation behaviour. [14]

It is important that counselling at VMMC sites and public messaging on VMMC emphasises that VMMC is not completely protective against HIV transmission and using condoms for sex remains necessary to reduce the risk of contracting HIV.

Other arguments against circumcision are dealt with by Halperin et al. (2008). [15]

Promoting VMMC is consistent with human rights
VMMC is consistent with a human rights approach to health-care. It should always be implemented in accordance with

these principles:

* It must be voluntary or, in the case of infants, must be done with parental or guardian consent.
* It must be accompanied by proper counselling on the need for practising safer sex, the offer of HIV testing and referral to treatment facilities for people who are HIV-positive.
* It must not undermine women's health.

There are several projects in Sub-Saharan Africa that already meet these criteria, including the Orange Farm project in South Africa. They should be used as models for scaling up VMMC.

The slow progress in rolling out VMMC means we are losing an important opportunity. The delay in making this essential health intervention available is inconsistent with human rights, for both men and women, as well as sound public health care.

Notes

[1] TAC. 2007. Male circumcision and HIV prevention : A TAC Briefing. http://www.tac.org.za/community/node/2160.
[2] Swaziland data was obtained via personal communication with the programme co-ordinator of the Family Life Association, Dr Ladislous Chonzi. The data for Zambia and Zimbabwe was obtained via personal communication with Scott Billy of the Society for Family Health. Also personal communication with Emmanuel Njeuhmeli of PEPFAR.
[3] Auvert et al. 2005. Randomized, controlled intervention trial of male circumcision for reduction of HIV infection risk: the ANRS 1265 Trial. PLoS Med. 2005 Nov;2(11):e298. Epub 2005 Oct 25. http://www.ncbi.nlm.nih.gov/pubmed/16231970
[4] Bailey et al. 2007. Lancet. Feb 24;369(9562):643-56. Male circumcision for HIV prevention in young men in Kisumu, Kenya: a randomised controlled trial. http://www.ncbi.nlm.nih.gov/pubmed/17321310
[5] Gray et al. 2007. Lancet. Feb 24;369(9562):657-66. Male circumcision for HIV prevention in men in Rakai, Uganda: a randomised trial. http://www.ncbi.nlm.nih.gov/pubmed/17321311
[6] Auvert et al. 2009. J Infect Dis. 2009 Jan 1;199(1):14-9. Effect of male circumcision on the prevalence of high-risk human papillomavirus in young men: results of a randomized controlled trial conducted in Orange Farm, South Africa. http://www.ncbi.nlm.nih.gov/pubmed/19086814
[7] (1, 2, 3) Aaron et al. 2009. NEJM. Volume 360:1298-1309. Male Circumcision for the Prevention of HSV-2 and HPV Infections and Syphilis. http://content.nejm.org/cgi/content/full/360/13/1298
[8] Gray et al. 2009. Am J Obstet Gynecol. 2009 Jan;200(1):42.e1-7. The effects of male circumcision on female partners' genital tract symptoms and vaginal infections in a randomized trial in Rakai, Uganda. http://www.ncbi.nlm.nih.gov/pubmed/18976733
[9] UNAIDS/WHO/SACEMA Expert Group on Modelling the Impact and Cost of Male Circumcision for HIV Prevention. 2009. Male Circumcision for HIV Prevention in High HIV Prevalence Settings: What Can Mathematical Modelling Contribute to Informed Decision Making? PLoS Med 6(9): e1000109. doi:10.1371/journal.pmed.1000109
[10] Baeten et al. 2009. The Lancet, Volume 374, Issue 9685, Pages 182 - 184, 18. Male circumcision and HIV risks and benefits for women.
[11] Wawer et al. 2009. Lancet. 2009 Jul 18;374(9685):229-37. Circumcision in HIV-infected men and its effect on HIV transmission to female partners in Rakai, Uganda: a randomised controlled trial. http://www.ncbi.nlm.nih.gov/pubmed/19616720
[12] Doyle et al. The Impact of Male Circumcision on HIV Transmission. J Urol. 2009 Nov 12. http://www.ncbi.nlm.nih.gov/pubmed/19913816
[13] Mattson et al. 2009. PLoS ONE. 2008; 3(6): e2443. Risk Compensation Is Not Associated with Male Circumcision in Kisumu, Kenya: A Multi-Faceted Assessment of Men Enrolled in a Randomized Controlled Trial. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2409966
[14] Agot et al. 2007. J Acquir Immune Defic Syndr. 2007 Jan 1;44(1):66-70. Male circumcision in Siaya and Bondo Districts, Kenya: prospective cohort study to assess behavioral disinhibition following circumcision. http://www.ncbi.nlm.nih.gov/pubmed/17019365
[15] Halperin et al. 2008. Future HIV Therapy September 2008, Vol. 2, No. 5, Pages 399-405. Male circumcision is an

efficacious, lasting and cost-effective strategy for combating HIV in high-prevalence AIDS epidemics.
http://www.futuremedicine.com/doi/full/10.2217/17469600.2.5.399n/a

Thanks to Dirk Taljaard and Bertran Auvert for feedback.

Source URL (retrieved on *2016/08/31 - 10:08am*): http://tac.org.za/community/node/2782