The medical proof doesn't get much better than VMMC

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The editorial[1] on voluntary medical male circumcision (VMMC) has many scientific inaccuracies and ignores the latest literature. Previous 'scientific' challenges on the VMMC evidence have had rebuttals co-signed by many local prevention scientists.[2,3] Ncayiyana does not acknowledge that despite the long presence of the prevention 'abstain, be faithful and condomise' (ABCs), the impact on HIV prevention progress has been slow, resulting in hundreds of thousands of mostly young South Africans dying. Substantially lowering incidence will only be achieved with the introduction and scale-up of new technologies.

To argue that VMMC has not been 'field tested' is inaccurate. The editorial's opening sentence quotes the 'real world' evidence. In Orange Farm, where many men were circumcised, a study demonstrated a 76% decrease in new HIV infections among those circumcised. Uganda reported a similar post-trial result (73%).[4] This builds on the observational evidence quoted in the editorial. It is unclear why neonatal VMMC is 'proscribed' in South Africa, as the editorial and many anti-VMMC groups claim; it occurs for cultural, religious and health reasons, and there is no law barring it. To ask for long-term evidence of the efficacy for HIV prevention of VMMC in neonates will take over 20 years to measure. It is biologically implausible that it would not have the same effect as in adults, and not implementing it would mean we do not protect the next generation of young men from a life-threatening illness. No similar evidence is requested for interventions such as hepatitis B or human papillomavirus vaccines.

Independent safety boards terminated the three VMMC efficacy studies, and not the researchers. Not to offer a proven (around 60% protective) intervention to the control group on stopping the studies violates clinical research ethics. Ncayiyana selectively quoted a statement by the Australian Federation of AIDS Organisations that 'correct and consistent condom use, not circumcision, is the most effective means of reducing female-to-male transmission, and vice-versa'. But there is no published evidence comparing the two interventions. Additionally, the organisation's (2007) statement later states that the epidemiology of HIV transmission completely differs between Australia and Africa, and its website stated in 2011 'Circumcision significantly reduces the rate of HIV acquisition (50 - 70%) in men with HIV-positive female partners.'[5] The 'scathing critique' of the MMC data by Van Howe and Storms referred to by Ncayiyana makes very little sense. They claim that 'Conservatively for the three trials, 89 of the 205 infections (43.1%) were sexually transmitted.' How were the other infections acquired? The choices would seem to be injection drug use or contact with blood and blood products. The evidence for the predominantly heterosexual transmission of HIV in sub-Saharan Africa is overwhelming. Furthermore, if the infections were not sexually transmitted, how would the condom use data discrepancy argued in the editorial as a weakness of the three studies then prevent them? The discussion on the various differential rates regarding VMMC and observed HIV prevalence in different South African communities relies on circumcision self-reports, which are unreliable when assessing culturally performed circumcision, in which the amount of foreskin removed varies. These observational studies are rendered irrelevant by good randomised control trial and follow-up community evidence.

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We found no reference to the assertion that black Americans have the highest rates of circumcision among American men, rather the opposite.[6] The argument that VMMC does not protect women from HIV is peculiar. Reducing the pool of HIV among men, in a predominantly heterosexual epidemic, will mean fewer men with HIV, who will expose fewer women. It also appears to reduce circulating HPV, and therefore likely to reduce cervical cancer rates,[7] as demonstrated in other communities where MMC is the norm. The risk disinhibition data from properly conducted studies does not suggest any additional risk taking.[8,9]

South Africa has some of the world's top HIV prevention scientists, and almost all of the biomedical breakthroughs in the field have either occurred in South Africa or included South Africans, including VMMC. The call for VMMC implementation came from South Africans after the Orange Farm study results were announced, was considered by the Department of Health (DoH), and was discussed extensively by all 19 sectors within the South African National AIDS Council (SANAC). The VMMC consensus involved prominent South Africans beyond the health sector, including Deputy President Motlanthe, who chairs the SANAC. Only after careful consideration of the science and the social and cultural issues around VMMC did the DoH and the SANAC decide to include VMMC in the 2012 - 2016 National Strategic Plan. This intervention is regarded as a game changer in South Africa's HIV prevention efforts and all provinces are prioritising efforts to accelerate access. The DOH has committed large budgets to VMMC rollout, and contrary to the editorial, is not kowtowing to donor agency agendas for support. Funding for VMMC from donors was requested from the South African government and granted, much like other support to ART and vaccine rollout. This national decision aligns with international recommendations from the WHO and UNAIDS.

No one argues that any one HIV prevention intervention will work alone, or that VMMC is 100% protective. Drivers of the HIV epidemic are complex and there is no 'one size fits all' prevention. However, the ABCs have proved insufficient in South Africa or elsewhere, in terms of reversing the HIV epidemic or addressing the complex drivers of HIV transmission. We need additional interventions to make an impact, using the combination prevention approach now adopted internationally and locally. Modelling studies strongly suggest increasingly striking implications of scaling-up of VMMC in averting millions of infections and deaths and saving billions of rands in the long run. Further delay will be a major failure to capitalise on scientific evidence to save lives and improve the quality of life of our population. Circumcision has an evidence base for efficacy, especially for protecting men, rivalling the best proved interventions in medicine. Its implementation will be complex, challenging and costly, but it works, and is needed as part of our prevention toolbox.

1. Ncayiyana DJ. The illusive promise of circumcision to prevent female-to-male HIV infection – not the way to go for South Africa Editorial). S Afr Med J 2011;101:776.
2. Banerjee J, Klausner JD, Halperin DT, et al. Circumcision denialism unfounded and unscientific. Am J Prev Med 2011;40:(3):e11-e12.
3. Halperin DT, Wamai RG, Weiss HA, et al. Male circumcision is an efficacious, lasting and cost-effective strategy for combating HIV in high-prevalence AIDS epidemics. Future HIV Therapy 2008;2(5):399-405.
4. Gray R, Kigozi G, Kong X, Ssempiija V, et al. The effectiveness of male circumcision for HIV prevention and effects on risk behaviors in a post-trial follow up study in Rakai, Uganda. AIDS 2012 Jan 4, Epub ahead of print.
5. Australian Federation of AIDS Organisations. Circumcision. http://www.afao.org.au/about-hiv/research/biomedical-prevention/circumcision (accessed 16 January 2012).
6. Xu F, Markowitz LE, Sternberg MR, Aral SO. Prevalence of circumcision and herpes simplex virus type 2 infection in men in the United States: the National Health and Nutrition Examination Survey (NHANES), 1999-2004. Sex Transm Dis 2007;34(7):479-484.
7. Tobian AA, Kong X, Wawer MJ, Kigozi G, et al. Circumcision of HIV-infected men and transmission of human papillomavirus to female partners: analyses of data from a randomised trial in Rakai, Uganda. Lancet 2011;11:604-612.
8. Agot KE, Kiarie JN, Nguyen HQ, Odhiambo JO, Onyango TM, Weiss NS. Male circumcision in Siaya and Bondo districts, Kenya: prospective cohort study to assess behavioral disinhibition following circumcision. J Acquir Immune Defic Syndr 2007; 44:66-70.
9. Mattson CL, Campbell RT, Bailey RC, Agot K, Ndinya-Achola JO, Moses S. Risk compensation is not associated with male circumcision in Kisumu, Kenya: a multi-faceted assessment of men enrolled in a randomized controlled trial. PLoS One 2008;3:e2443.