

Voluntary medical male circumcision for HIV prevention



KEY POINTS

- Voluntary medical male circumcision (VMMC) reduces female-to-male sexual transmission of HIV by 60%.
- The WHO and UNAIDS recommend the implementation of VMMC programmes in countries with a high HIV prevalence among the general population.
- VMMC is cost-effective and should be included, alongside behavioural and structural strategies, as part of a comprehensive HIV prevention plan.

Explore this page to find out more about [WHO recommendations for the implementation of VMMC](#), [high profile VMMC programmes](#), [increasing uptake of VMMC programmes](#), the [benefits and challenges of VMMC](#) and [hazards of the procedure](#).

In the mid-2000s, male circumcision was found to reduce the female-to-male sexual transmission of HIV by 60%.¹ It remains the only one-off intervention that reduces the risk of HIV infection and is highly cost-effective.

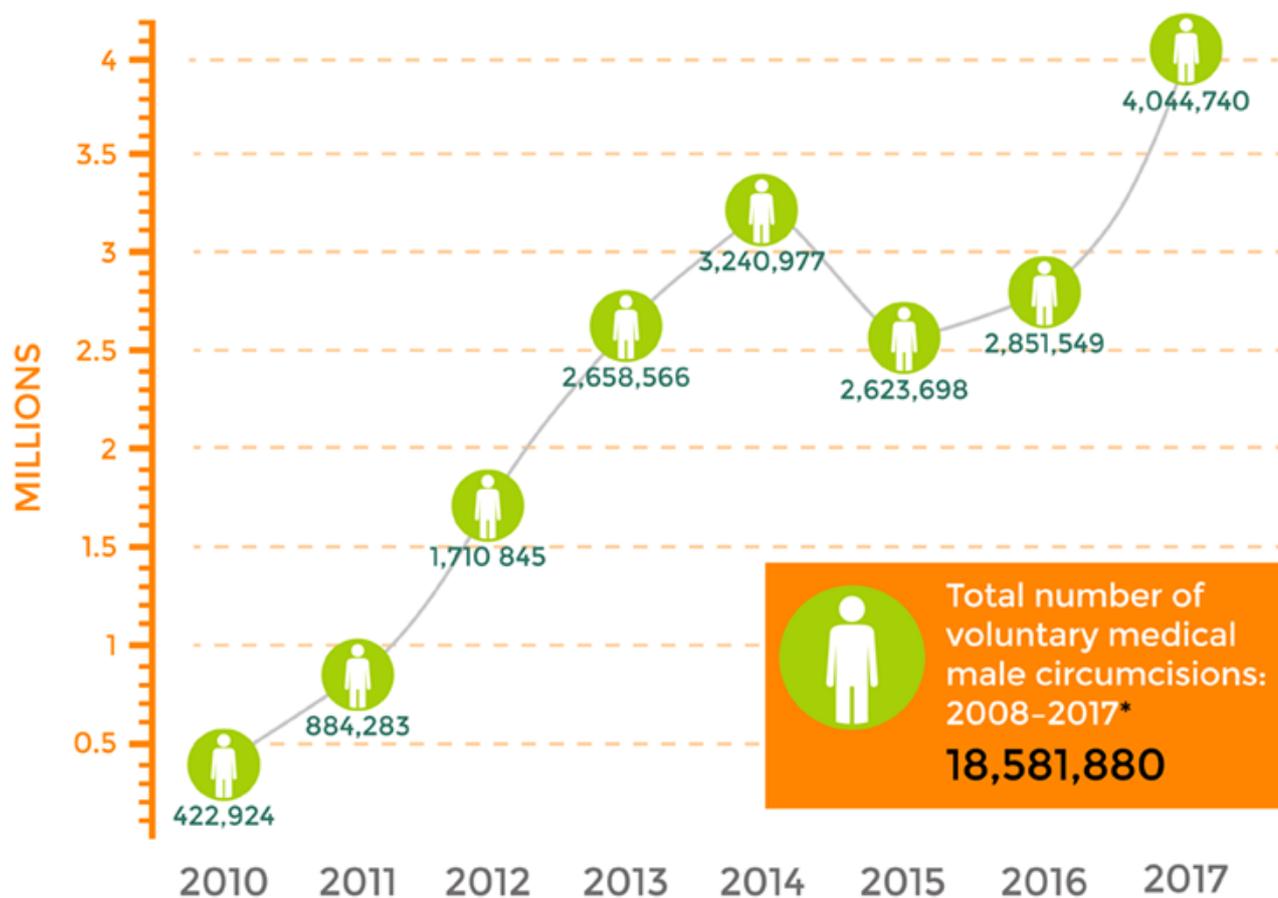
Since 2007, the World Health Organization (WHO) and UNAIDS have recommended voluntary medical male circumcision (VMMC) as a key component of combination HIV prevention in countries with a high HIV prevalence and low levels of male circumcision. As a result, 14 countries in [East and Southern Africa](#) were identified as priority countries and initiated programmes to expand the provision of male circumcision ([Botswana](#), Ethiopia, [Kenya](#), [Lesotho](#), [Malawi](#), Mozambique, Namibia, Rwanda, [South Africa](#), [Eswatini](#), [Tanzania](#), [Uganda](#), [Zambia](#) and [Zimbabwe](#)).² In 2016/17, South Sudan was subsequently identified as high priority country for VMMC programmes, taking the total to 15.³

This massive public health intervention called for 80% coverage of male circumcision by 2016 in the original 14 priority countries (aiming to reach 20.8 million people).⁴

At the time, it was estimated that achieving this coverage would cost US\$1.5 billion but would lead to savings of US\$16.5 billion by 2025 due to averted HIV treatment and care costs. It is also estimated that reaching 80% coverage in the 14 countries would prevent up to 3.4 million new HIV infections.⁵

By the end of 2017, over 18.5 million men in the priority countries had been medically circumcised.⁶ Of this total, 4 million voluntary circumcisions were performed in 2017 alone.⁷

Voluntary medical male circumcision (VMMC) for HIV prevention in the 14 UNAIDS and WHO priority countries**



*Calendar years 2008 and 2009 are included in total numbers.

**UNAIDS and WHO 14 priority countries: Botswana, Eswatini, Ethiopia, Kenya, Lesotho, Malawi, Mozambique, Namibia, Rwanda, South Africa, Tanzania, Uganda, Zambia, Zimbabwe

Source: Global AIDS Monitoring, national programmes, UNAIDS/UNICEF/WHO.

Avert www.avert.org

A new VMMC target was set in the United Nations' 2016 Political Declaration on HIV and AIDS to reach 25 million young men in priority countries with VMMC by 2020.⁸ A subsequent WHO/UNAIDS VMMC strategic framework set the goal of reaching 90% of 10-29 year olds in priority countries with VMMC by 2021.⁹

To reach this coverage level, 5 million young men in the priority countries will need to undertake voluntary circumcision every year.¹⁰

Mathematical modelling suggests major changes in VMMC implementation in most countries will be required to reach this target. A study analysing four feasible scenarios for scaling up VMMC between 2017 and 2021 in Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Uganda, and Zimbabwe, found Tanzania alone would be likely to reach 90% coverage. Mozambique, South Africa, and Lesotho were projected as coming close to reaching target coverage in one scenario, with the remaining countries unlikely to meet the target in any of the scenarios assessed.¹¹

Factors that deter men from undergoing VMMC include fear of pain, perception of low HIV risk, lack of partner, parent or social support and a preference for traditional, 'rites of passage' circumcision, which carries a cultural significance in some communities.¹²

WHO recommendations for the implementation of VMMC

Who should VMMC programmes target?

The WHO and UNAIDS recommend the implementation of VMMC programmes in countries where they will have the greatest public health benefit.

These include countries with a high HIV prevalence among the general population (over 15%) and where the vast majority of men are not circumcised (80%). VMMC is also recommended in countries where HIV prevalence is between 3% and 15% among the general population where HIV transmission occurs primarily via heterosexual sex.¹³

VMMC is thought to have a limited public health benefit if introduced among [key affected populations](#) such as [sex workers](#), [people who inject drugs \(sometimes referred to as PWID\)](#) and [men who have sex with men](#) (sometimes referred to as MSM). However, individual men may benefit if they are at a higher risk of heterosexual HIV transmission because they are in a mixed-status relationship.¹⁴

Making VMMC programmes work

The male circumcision procedure only partially protects men from HIV transmission.

Therefore it is recommended that VMMC is included as part of a comprehensive HIV prevention strategy. This includes providing age-appropriate sexual and reproductive health services alongside VMMC such as condom promotion, HIV testing and counselling, risk reduction counselling, testing for sexually transmitted infections (STIs), pre-exposure prophylaxis, and interventions that address harmful gender norms.¹⁵

Providing antiretroviral treatment (ART) to people living with HIV in order to achieve viral suppression is also recommended. This is when the level of HIV in someone's body is suppressed to such a low level it becomes undetectable. If maintained through effective treatment and monitoring, a person with a suppressed viral load is likely to be in good health and will be unable to transmit HIV to someone else.¹⁶

Countries are also advised to offer VMMC free of charge or at the lowest possible cost to the client, as with other HIV services. Experts have also stressed the need for:

- culturally appropriate strategies
- well-trained practitioners working in sanitary conditions

- informed consent, confidentiality and absence of coercion
- counselling for men and their sexual partners on the need to take further HIV prevention measures, as VMMC provides only partial protection from HIV infection.¹⁷

Maximising public health benefit

UNAIDS and the WHO advise that prioritising circumcision for young men (10 to 29 years) will have the greatest public health benefit.¹⁸

According to age-disaggregated data reported to UNAIDS in 2015 by nine VMMC-priority countries (Botswana, Ethiopia, Kenya, Lesotho, Mozambique, Rwanda, Eswatini, Zambia, Zimbabwe), the uptake of VMMC is highest among those aged 10–14 years, followed by those aged 15–19 years and 20–24 years.¹⁹ Evidence suggests there is greater benefit in prioritising male circumcision among adolescents, particularly 10 to 14 year olds, rather than adults. This is because:

- in many places, it is more acceptable both culturally and socially for **adolescents** to be circumcised than adults
- if performed before becoming sexually active, the benefits of VMMC are long-term for both the individual and wider public health
- if VMMC occurs before an individual starts engaging in sexual relationships there are fewer concerns about sexual abstinence and it allows enough time for the wound to heal
- attaining high coverage for circumcision among 10-14 year olds in priority countries means there is greater likelihood of reaching 90% VMMC coverage among 10–29-year-olds by 2021, because historical coverage affects future coverage.²⁰

Early-infant male circumcision (EIMC)

The circumcision of newborn babies has also been put forward by UNAIDS and the WHO as a longer-term strategy to combat the HIV epidemic which should be implemented in parallel with adult circumcision programmes.²¹

Many of the 15 priority countries have implemented or are piloting early infant male circumcision (EIMC) programmes (Botswana, Kenya, Lesotho, Rwanda, South Africa, Eswatini, Tanzania, Uganda, Zambia, and Zimbabwe).²²

Although its impact on HIV will take longer to realise, EIMC is ultimately likely to be more effective at preventing HIV acquisition than adult male circumcision as the procedure is carried out well before the individual becomes sexually active, avoiding the risk associated with sex during the healing period. Like VMMC, EIMC will therefore protect against other STIs in addition to HIV. It is also cheaper than VMMC, with studies estimating that it is likely to be a cost-saving HIV prevention intervention in the longer term.²³

A study about the acceptability of EIMC in Zimbabwe found the decision about whether to give consent for a male infant to be circumcised tends to rest with the father, following a discussion between both parents. Fathers who had undergone VMMC were more likely to adopt EIMC for their sons, compared to uncircumcised men. The study found an infant's mother could sometimes influence the father's decision, with mothers-in-law and grandparents also able to exert influence.²⁴

Progress made in VMMC for HIV prevention

In 2014, VMMC was expanded rapidly in the UNAIDS/WHO priority countries, resulting in 3.2 million men being circumcised during that year alone. In 2015 and 2016, the annual figure fell to below 3 million. Funding reductions, saturation coverage among early VMMC adopters, and delays caused by changes to VMMC procedures are all thought to have contributed to the stall in progress.²⁵ In 2017, VMMC accelerated once more, reaching 4 million men.²⁶ However, as more men are circumcised, reaching the 90% coverage target becomes harder.

Progress varies widely between the priority countries. Population-level data reported by UNAIDS in 2018 suggests less than a third of adult men are circumcised in Botswana, Eswatini, Malawi, Namibia, Rwanda, Zambia and Zimbabwe.²⁷ To reach the target laid out in the United Nations' 2016 Political Declaration on HIV and AIDS (25 million additional young men in high-prevalence settings circumcised by 2020), the annual number of circumcisions performed in priority countries needs to accelerate rapidly.²⁸ To achieve this, UNAIDS recommends the following:

- integrate vertical programmes within national health systems
- promote voluntary medical male circumcision as part of a core package of health services for men and boys, using approaches that are tailored for various age groups and locations
- increase domestic funding to ensure sustainability
- widen the use of new non-surgical circumcision devices
- develop new approaches for adolescent and early infant circumcision
- break down myths and misconceptions about circumcision.²⁹

High profile VMMC programmes

Kenya

Kenya launched its VMMC programme in 2008 with an initial target of circumcising 860,000 men by July 2013 (80% coverage). Between 2008 and 2013, the number of annual VMMCs increased dramatically from 8,000 to 190,000.³⁰ The country fell just short of its target, reaching 800,000 men (71%) but achieved its coverage goal in the Nyanza region where most of the implementation took place.³¹

The next phase of Kenya's VMMC strategy aims to see 95% of men circumcised by 2019. The second stage of the programme has shifted its focus to infant male circumcision, which targets children between 0 to 60 days old, and adolescents (10 to 14 years). The country also aims to encourage safer surgical practices within traditionally circumcising communities.³² In 2015, under the new phase of the strategy, Kenya surpassed its annual target of 940,000 circumcisions by around 100,000. Kenya has achieved coverage among communities that did not previously practice male circumcision such as the Nyanza region and is targeting the counties of Turkana, Marsabit, West Pokot and Coast.³³

As of 2014, the last data available, Kenya had reached 93% eligible men with VMMC.³⁴

Lesotho

In 2009, the Lesotho Demographic and Health Survey found that only 37% of men, compared to 66%

of women, had ever been tested for HIV. With one of the world's biggest generalised HIV epidemics, VMMC was viewed primarily as another means of increasing HIV testing uptake among men.³⁵

Launched in March 2012, Lesotho's VMMC programme aimed to circumcise 80% of men aged 15–29. In Lesotho, 72% of men of this age live in these five districts, all of which have high HIV prevalence.³⁶

A review conducted in 2013 found that a high percentage of men undergoing VMMC were lost to follow-up. To improve the situation, active links to treatment and care were introduced in October 2013, and expanded in March 2014.³⁷

This resulted in 18 hospitals and private clinics and over 100 health centres providing VMMC. The same year, nearly 85,000 men received VMMC as part of comprehensive HIV prevention services, with 56% also testing for HIV.³⁸

In 2017, Lesotho's VMMC programme aimed to circumcise 38,737 men aged 15–29 years. This would have achieved 80% saturation in two of the five districts (Berea and Maseru) with the remaining three districts scheduled to reach 80% coverage by September 2018.³⁹ In total, 25,150 VMMCs were carried out in 2017, around 13,500 short of the target.⁴⁰

A key challenge facing Lesotho's VMMC programme is a lack of demand. This is largely due to the fact that traditional male circumcision, conducted during rites of passage ceremonies in which adolescent boys transition into adulthood, is popular in some parts of the country. To address this, collaborations are being made between VMMC services and those carrying out traditional circumcision. To increase uptake among young men, VMMC awareness campaigns are also taking place in secondary schools, trade schools and colleges. In addition, demand is being created via VMMC/HIV testing campaigns, through workplace and faith-based VMMC programmes and by engaging women to promote VMMC to male partners, family members and other men in their communities.⁴¹

As part of its VMMC strategy, in 2013 Lesotho began incorporating early infant male circumcision (EIMC) into routine maternal, newborn and child health (MNCH) services. A review published in 2016 found demand for services was increasing slowly. Between October 2014 and March 2015, 11% of male babies delivered at the nine implementation sites were circumcised; rates ranged from 27% in Berea Hospital to 2% in Leribe Hospital.⁴²

The primary challenge to EIMC uptake was the mother's desire to consult with the father and other family members before consenting to the procedure. In Lesotho, most fathers do not accompany mothers to antenatal visits, to the hospital for the birth, or to postnatal care visits, the main sources of EIMC information. This means most fathers are reluctant to give consent as they do not have firsthand information about the safety and benefits of the procedure. Some mothers felt that infancy was not the proper time to have their sons circumcised because they feared their sons would not be accepted for rites of passage ceremonies as teenagers.⁴³

CHAPS, Johannesburg, South Africa

In 2010, following successful VMMC trials, the Centre for HIV and AIDS Prevention Studies (CHAPS) was established in Orange Farm, a township outside Johannesburg, to contribute to the roll-out of South Africa's national VMMC programme.⁴⁴

At this time, the healthcare system was still coping with the rapid expansion of ART and a

chronic shortage of health workers. To ensure the expansion of the programme, CHAPS and the National Department of Health selected private sector clinics in high priority areas and trained private providers to deliver free VMMC.[45](#)

As of 2018, CHAPS has partnered with 71 clinics, trained more than 10,000 health care workers on VMMC and conducted 500,000 circumcisions.[46](#)

Due to its success, CHAPS has supported the launch of a similar programme in Eswatini and provided advice to partners of Namibia's VMMC programme.[47](#)

Scaling up VMMC programmes

A number of suggestions have been made in order to accelerate and maximise the impact of VMMC, including:

- promoting VMMC as cost-effective in order to secure more [funding](#) from donors[48](#)
- allowing VMMC to be performed by nurses and other healthcare workers (task shifting)[49](#)
- prioritising sub-populations (for example by age) in order to maximise a programme's impact and efficiency[50](#)
- using Geographic Information System (GIS) mapping to identify the areas where VMMC uptake is low[51](#)
- exploring the role of technologies in order to make circumcision more attractive to men.[52](#) Non-surgical devices are discussed below.

Non-surgical male circumcision devices

In 2013, the WHO approved the first adult male circumcision, non -surgical device for use in low-resource settings, called PrePex. It approved a second non -surgical device in 2015.[53](#)

PrePex is an elastic ring device that requires no injected local anaesthetic and can be placed and removed by trained mid-level healthcare workers. It works by stopping the flow of blood to the foreskin due to the compressive force of the elastic ring. Eventually the foreskin tissue dies and can be easily removed after one week.[54](#)

Innovations such as these can play a key role in helping priority countries significantly increase circumcision rates by relieving the demands placed on the limited number of surgeons.

As of 2018, Zimbabwe, South Africa, Uganda, Rwanda, Botswana, Kenya, Malawi, Zambia, Tanzania, Lesotho, Eswatini, Namibia, Indonesia and India had all implemented PrePex.[55](#)

In a study of 300 men who had undergone a PrePex circumcision in Uganda, 97% were satisfied with the penile scar appearance and the absence of pain.[56](#)

Increasing uptake of VMMC programmes

Community mobilisers and peer education

Using members of the community to provide one-on-one messaging to potential VMMC clients has been one of the most effective strategies. It allows men who are thinking about the procedure to ask questions in private.[57](#)

A study from northwest Tanzania found religious leaders could assert a significant influence over men when it came to VMMC. The study provided education on VMMC for church leaders in eight villages, then compared VMMC outcomes against eight control villages. All 16 villages received the standard VMMC outreach activities provided by the Ministry of Health. In the intervention villages, 53% of men went on to be circumcised during the VMMC outreach campaign, compared with 30% of men in the control villages.[58](#)

Geographic and preference targeting

A tool that utilises geographic information systems (GIS) mapping to match VMMC demand with available VMMC health staff, which was first developed for use in Mozambique, is helping to increase VMMC uptake in a number of countries. In Tanzania, it has enabled programmers to achieve target coverage for VMMC among young men (15–24 years) in areas previously seen as ‘non-circumcising’.[59](#)

Another form of targeting has been developed that responds to the reasons why men might be reluctant to be circumcised. A study published in 2017, saw 4,000 men from Zimbabwe and Zambia answer a survey about how they would decide whether or not to be circumcised. Researchers identified multiple different perspectives on VMMC including enthusiasts, rejecters and ‘neophytes’ (those with gaps in their knowledge who could potentially be persuaded to take up VMMC). Counsellors then received training and support on how to use simple questions to identify which type of man they were speaking to in order to tailor their approach. In addition, communications campaigns designed to address the different perspectives also ran.[60](#)

Uganda - the STAR-EC Project

In Uganda, the USAID-funded STAR-EC project worked from 2009-2016 to increase access to VMMC and other HIV prevention and treatment services in east central Uganda.

The project engaged village health teams, peer educators, civil society organisations, and ‘satisfied clients’ to promote VMMC through organised events such as fairs, market days, couples testing and counselling weeks and youth football competitions. It also used mobile surgical tents (often referred to as ‘camps’) to offer VMMC services in communities. These camps took place on weekends and on district, regional, and national commemoration days. Community resources were relied on to raise awareness about the benefits of VMMC and provide advance marketing for the outreach clinics.[61](#)

In addition to targeting single male clients, the project engaged couples and encouraged female involvement in their husbands’ decision-making around circumcision. This helped increase the cultural acceptability of, and demand for, circumcision in the region where the procedure was previously uncommon.[62](#)

By the end of the project, more than 408,000 men had been circumcised, increasing coverage

from 37% to 57% and preventing an estimated 21,000 new HIV infections.⁶³ Taking over from this is a five-year USAI-funded programme that aims to link VMMC to a broad variety of services including reproductive health, family planning, water and sanitation, and tuberculosis and malaria services. During its first year, the programme had circumcised more than 74,000 men.⁶⁴

Media involvement

In Tanzania, radio spots and print materials tailored to different regions feature the voices of 'satisfied customers' and local health experts.⁶⁵ As part of the VMMC awareness drive in Tanzania, TV drama 'Siri ya Mntungi' ('Secrets in the pot'), which focuses on the challenges that everyday Tanzanian families face, incorporated a VMMC storyline into a number of its episodes.⁶⁶

In Kenya, journalists have been trained to report accurately on the science behind VMMC, while Zambia has incorporated key VMMC messages into radio magazine broadcasts. ⁶⁷

Female involvement in VMMC

Women have been found to be able to influence their partner's decision to undergo VMMC and adhere to post-operative care, which includes abstaining from sex for six weeks after the procedure to enable the wound to heal.⁶⁸ For this reason, programmes to encourage women's involvement in supporting partners through VMMC have been implemented.

For example in Uganda, the ASSIST programme aimed to improve VMMC outcomes by involving female partners through increasing awareness about the procedure with women in a number of ways including when they came into contact with healthcare for other services such as maternal health. Between 2013 and 2016 ASSIST resulted in increased adherence to the WHO-recommended 48-hour (98%) and 7-day (96%) medical follow-ups and a decrease in adverse reactions to the procedure such as infection.⁶⁹

A study into adolescent females' involvement in VMMC decision-making in South Africa, Tanzania, and Zimbabwe found encouragement from females (both girlfriends and peers) was something that motivated 10-19 year old males to seek VMMC. Focus group discussion with women aged 16 to 19 in all three countries revealed broad support of VMMC, although some thought VMMC might increase the likelihood that men would be promiscuous.⁷⁰

HELP US HELP OTHERS

Avert.org is helping to prevent the spread of HIV and improve sexual health by giving people trusted, up-to date information.

We provide all this for FREE, but it takes time and money to keep Avert.org going.

Can you support us and protect our future?

Every contribution helps, no matter how small.

PLEASE DONATE NOW

The benefits and challenges of VMMC

VMMC is cost-effective

Male circumcision is a one-off procedure and therefore, unlike ART, has no ongoing costs. Once a man has undergone the procedure, he will benefit from the preventive effect for the rest of his life.

VMMC is also cost-effective as it averts new HIV infections, thereby reducing the number of people needing HIV treatment and care. The WHO estimates US\$ 16.5 billion could be saved in HIV treatment and care costs by 2025 if even 80% coverage is achieved in priority countries.⁷¹

A study in South Africa reported the cost of VMMC per person to be US\$132. Unlike previous studies, which calculated the cost of VMMC in South Africa to be around US\$49 per person, this analysis took indirect costs such as demand creation into account, as well as direct costs such as staff time. As the largest proportion of money spent on VMMC went on direct labour, accounting for 43% of costs, the study estimated that shifting the task from doctors to nurses could save at least US\$15 million a year.⁷²

Similarly, a study on VMMC services for young homeless men in Eldoret, Kenya found VMMC to be highly cost effective. The cost per person of VMMC was estimated at US\$108 per person (around US\$10 of this was the direct cost of the procedure itself, the rest was spent on indirect costs such as staffing and education programmes). The intervention was estimated to save US\$267 per person, based on the cost per disability adjusted life year, which describes one lost year of 'healthy' life, for each person. The intervention was also estimated to have averted around 8,500 new HIV infections among young men in the area over five years.⁷³

Effectiveness

While male circumcision has been found to reduce the female-to-male sexual transmission of HIV, circumcised men can still become infected with HIV, and if HIV-positive, can infect others. The WHO makes it clear that:

Male circumcision should never replace other known effective prevention methods and should always be considered as part of a comprehensive prevention package, which includes correct and consistent use of male or female condoms, reduction in the number of sexual partners, delaying the onset of sexual relations, and HIV testing and counselling. ⁷⁴

VMMC as an entry point to other health services

For many men, particularly in some parts of Africa, VMMC services often represent their first encounter with the healthcare system. This means VMMC presents an important opportunity for engaging young men in health services, and holds great potential for HIV prevention, treatment and care, although this opportunity is often missed. For example, a study among adolescent men in South Africa, Tanzania and Zimbabwe found those who agreed to VMMC received little information about

HIV prevention and care, and were rarely provided with condoms.⁷⁵

Voluntary medical male circumcision provides a much needed entry point for reaching men and boys with other HIV prevention and health services, which would in turn benefit women and girls. We cannot reach our goals without it.

- Michel Sidibé, UNAIDS Executive Director⁷⁶

Acceptability

Male circumcision is one of the oldest and most common surgical procedures worldwide. It is not only undertaken for medical reasons but also for religious, cultural and social ones.⁷⁷

A review of eight acceptability studies conducted in six sub-Saharan Africa countries in communities that do not traditionally circumcise found the median proportion of uncircumcised men who said they would be willing to be circumcised to be 65%.⁷⁸

In these studies, almost 70% of the women said that they would prefer that their partners be circumcised.⁷⁹ For example, in Nyanza province, Kenya, 77% of women preferred their sexual partner to be circumcised.⁸⁰ Likewise, in South Africa, 78% of women in the 2011 Youth Sex Survey preferred circumcised men.⁸¹

Two randomised controlled trials of male circumcision compared data on sexual function and sexual satisfaction before and after circumcision and also between men who had been circumcised and men who had not. Participants in the trial among 4,500 men in Rakai, Uganda, reported no meaningful changes in any area of sexuality studied (including sexual desire or satisfaction, erectile function, ability to achieve penetration, or pain with intercourse) pre- and post-circumcision. More than 98% of the men in both the intervention and the control groups rated their sexual satisfaction as "satisfied" or "very satisfied" six to 24 months after enrolling in the trial. ⁸²

In the trial conducted among 2,684 men in Kisumu, Kenya, there were no reported differences in sexual function between circumcised and uncircumcised men. 64% of the circumcised men who were available for follow-up at 24 months reported greater penile sensitivity after circumcision, and 54% reported enhanced ease in reaching orgasm.⁸³

While male circumcision is normal practice in many communities, many cultures have no tradition of male circumcision, and some are strongly opposed to it. For example, studies of traditionally non-circumcising communities have found that older married men do not consider themselves at risk of acquiring HIV and view circumcision as more appropriate for younger men.⁸⁴

In these settings, some argue that promoting circumcision as a modern medical procedure rather than as a cultural process, may increase uptake.⁸⁵

Age can also play a role in perceptions of VMMC, which again emphasises the need to tailor services

to suit the specific needs of different groups. A study comparing attitudes towards VMMC among younger (aged 10–14) and older (aged 15–19) adolescent males in South Africa, Tanzania, and Zimbabwe found the majority of males in both groups reported a strong desire for VMMC. Compared with older adolescents, younger adolescents were less likely to cite protection against HIV and other STIs as their motivation to undergo VMMC but were more likely to report being motivated by advice from others. Irrespective of age, the study found participant's main concern about undergoing VMMC was pain. Among younger adolescents, fear of pain was linked with a reduced desire to undergo VMMC.[86](#)

The effects on risk taking

Circumcision is mistakenly viewed by some as a fully protective measure against HIV transmission, and there are concerns that men who have been circumcised may be more inclined to engage in risky behaviours. For example, they may stop using condoms.[87](#)

However, to date, no significant links have been made between the provision of VMMC and a decline in condom use. A large-scale study carried out in 10 East and Southern African countries found no evidence of decreased condom use or increase in other risky behaviour by circumcised men.[88](#)

A study from South Africa sought to assess 'risk compensation' – an increase in sexual risk behaviours and a corresponding decrease in self-perceived HIV risk – among young men (16–24 years). It documented the sexual practices of around 500 circumcised and 500 uncircumcised young men in 42 secondary schools in a sub-district of KwaZulu-Natal, an area with a high HIV prevalence. The study found no significant difference between the two groups concerning HIV risk perception, the number of reported sexual partners and condom use. Significantly, only around 39% of young men in both groups reported using condoms consistently in the previous month, underscoring the need to view VMMC as a potential entry point for other HIV prevention and sexuality education interventions.[89](#)

Hazards of the procedure

Unlike other HIV prevention methods, male circumcision requires medical intervention. To carry out the procedure safely requires the right level of training and resources. Poorly performed male circumcision can lead to bleeding and damage to the penis. Moreover, if tools are not sterilised properly before each use, they can transmit HIV.[90](#)

The potential risk involved in medical interventions such as male circumcision is a concern for some as VMMC continues to be scaled up across much of sub-Saharan Africa.[91](#) [92](#)

Moreover, because newly circumcised men are advised to wait for six weeks for their wounds to heal before having sex, they are at greater risk of HIV infection from an HIV-positive partner if they don't abstain.[93](#)

Preventing the transmission of STIs

Male circumcision has been shown to reduce the transmission of other STIs. For example, a trial conducted in Rakai, Uganda, found that in addition to reducing the incidence of HIV infection, male circumcision also reduced the incidence of herpes simplex virus type 2 (HSV-2) and the prevalence of human papillomavirus (HPV) among adolescents and adult males.[94](#)

One of the largest and most comprehensive analyses of syphilis incidence in men and women and the effect of male circumcision found that male circumcision significantly decreased the incidence of syphilis by 42% in circumcised men compared with uncircumcised men. The protection impact of circumcision was found to be even greater for men with HIV with a reduction of 62%. The study also found male circumcision reduced female partner syphilis incidence by 59% overall. This breaks down to a 75% reduction in female partners without HIV and a 48% reduction in female partners with HIV.[95](#)

A 2017 literature review of studies from Africa, North America, South America, Asia, and Europe found evidence that male circumcision results in increased protection for women against cervical cancer, cervical dysplasia, HPV type 2, chlamydia and syphilis.[96](#)

Male circumcision and perceptions of female genital mutilation (FGM)

In communities where FGM is practiced and VMMC is offered, some incorrectly believe that FGM can also reduce the risk of HIV transmission.[97](#)

One survey of 494 women from communities in Kenya, Namibia, South Africa, Eswatini and Uganda found that almost one in four thought FGM could protect women from HIV.[98](#)

FGM has no health benefits and does not protect against HIV. In fact, FGM increases a woman's risk of HIV transmission.[99](#)

Photo credit: Photo by Corrie Wingate for Avert

-
1. Auvert, B et al. (2005) '[Randomized, controlled intervention trial of male circumcision for reduction of HIV infection risk: the ANRS 1265 Trial](#)' Vol 2, Issue 11,;e298
 2. World Health Organization (WHO) (2012) '[Voluntary medical male circumcision for HIV prevention](#)'
 3. UNAIDS (2018) '[Miles to go: global AIDS update 2018](#)', p.57 [pdf]
 4. WHO (2014) '[WHO Progress Brief - Voluntary medical male circumcision for HIV prevention in priority countries of East and Southern Africa](#)' (accessed January 2019)
 5. World Health Organization (WHO) (2012) '[Factsheet: Voluntary medical male circumcision for HIV prevention](#)' (accessed January 2019)
 6. WHO (2018) '[Progress Brief: Voluntary Medical Male Circumcision for HIV Prevention, July 2018](#)', p1 [pdf]
 7. UNAIDS (2018) '[Miles to go: global AIDS update 2018](#)', p.38 [pdf]
 8. UNAIDS (2018) '[Miles to go: global AIDS update 2018](#)', p.55 [pdf]
 9. WHO/UNAIDS (2016) '[A framework for voluntary medical male circumcision: effective HIV prevention and a gateway to improved adolescent boys' & men's health in Eastern and Southern Africa by 2021](#)', p.7 [pdf]
 10. UNAIDS (2018) '[Miles to go: global AIDS update 2018](#)', p.55 [pdf]
 11. Njeuhmeli, E et al. (2018) '[Scaling Up Voluntary Medical Male Circumcision for Human Immunodeficiency Virus Prevention for Adolescents and Young Adult Men: A Modeling Analysis of Implementation and Impact in Selected Countries](#)', Clinical Infectious Diseases, Vol 66, Issue 3,

p.166-172.

12. Masese, RJ, Chimango, JL and Mbirimtengerenji, ND (2017) 'Overcoming Barriers to Uptake of Voluntary Medical Male Circumcision in a Traditionally Circumcising Community in Machinga District, Malawi', World Journal of AIDS, Vol 7, p.40-58. Hatzold, K et al. (2014) 'Barriers and Motivators to Voluntary Medical Male Circumcision Uptake among Different Age Groups of Men in Zimbabwe: Results from a Mixed Methods Study', PLoS One, Vol 9, Issue 5, e85051.
13. World Health Organization (WHO) & UNAIDS (2007) 'New Data on Male Circumcision and HIV Prevention: Policy and Programme Implications', p. 8 [pdf]
14. World Health Organization (WHO) & UNAIDS (2007) 'New Data on Male Circumcision and HIV Prevention: Policy and Programme Implications', p.8 [pdf]
15. WHO/UNAIDS (2016) 'A framework for voluntary medical male circumcision: effective HIV prevention and a gateway to improved adolescent boys' & men's health in Eastern and Southern Africa by 2021', p.7 [pdf]
16. UNAIDS (2016) 'Prevention Gap Report', p54 [pdf]
17. World Health Organization (WHO) & UNAIDS (2007) 'New Data on Male Circumcision and HIV Prevention: Policy and Programme Implications', p.4-16 [pdf]
18. WHO/UNAIDS (2016) 'A framework for voluntary medical male circumcision: effective HIV prevention and a gateway to improved adolescent boys' & men's health in Eastern and Southern Africa by 2021', p.7 [pdf]
19. UNAIDS (2016) 'Prevention Gap Report', p42 [pdf]
20. Njeuhmeli Emmanuel, MD et al. (2014) 'Lessons Learned From Scale-Up of Voluntary Medical Male Circumcision Focusing on Adolescents: Benefits, Challenges, and Potential Opportunities for Linkages With Adolescent HIV, Sexual, and Reproductive Health Services' JAIDS Journal, Vol 66, p.193-199. Lane, C et al. (2018) 'Adolescent Male Circumcision for HIV Prevention in High Priority Countries: Opportunities for Improvement', Clinical Infectious Diseases, Vol 66, Issue 3, p.161-5.
21. UNAIDS (2016) 'Prevention Gap Report', p44 [pdf]
22. Chilimampungu, C et al. (2017) 'Acceptability and feasibility of early infant male circumcision for HIV prevention in Malawi', PLOS One, Vol 12, Issue 14, e0175873.
23. Chilimampungu, C et al. (2017) 'Acceptability and feasibility of early infant male circumcision for HIV prevention in Malawi', PLOS One, Vol 12, Issue 14, e0175873.
24. Mavhu, W et al. (2017) 'Unpacking early infant male circumcision decision-making using qualitative findings from Zimbabwe', BMC International Health and Human Rights, Vol 17, Issue 2.
25. UNAIDS (2016) 'Prevention Gap Report', p42 [pdf]
26. UNAIDS (2018) 'Miles to go: global AIDS update 2018', p.56 [pdf]
27. UNAIDS (2018) 'Miles to go: global AIDS update 2018', p.56 [pdf]
28. ibid
29. UNAIDS (2016) 'Prevention Gap Report', p.40 [pdf]
30. National AIDS Control Council of Kenya (2014) 'Kenya AIDS Response Progress Report 2014: Progress towards Zero', p15 [pdf]
31. Kenya Ministry of Health (2014) 'End-Term Review of Kenya's Voluntary Medical Male Circumcision Programme (2008-2013)', p.vi-vii

32. Kenya Ministry of Health (2015) '[National Voluntary Medical Male Circumcision Strategy 2014/15 - 2018/19](#)' [pdf]
33. Clearing House on Male Circumcision '[In the News: Kenyan programme surpasses goal: Coast Week, 4 March, 2015](#)' (accessed January 2019)
34. UNAIDS '[AIDSinfo](#)' (accessed December 2018)
35. USAID (2010) '[Lesotho Demographic and Health Survey 2009](#)', p.237 [pdf]
36. Ministry of Health, Government of Lesotho (2015) '[Global AIDS response progress report 2015: Lesotho country report](#)', p.22 [pdf]
37. UNAIDS (2015) '[On the Fast-Track to end AIDS by 2030: Focus on location and population](#)', p.188 [pdf]
38. Ministry of Health, Government of Lesotho (2015) '[Global AIDS response progress report 2015: Lesotho country report](#)', p.22 [pdf]
39. PEPFAR (2016) '[Lesotho Country Operational Plan \(COP\) 2016: Strategic Direction Summary](#)', p.23 [pdf]
40. UNAIDS '[AIDSinfo](#)' (accessed January 2019)
41. PEPFAR (2017) '[Lesotho Country Operational Plan \(COP/ROP\) 2017: Strategic Direction Summary](#)', p.23 [pdf]
42. Kikaya, V et al. (2016) '[Scale-Up of Early Infant Male Circumcision Services for HIV Prevention in Lesotho: Review of Facilitating Factors and Challenges](#)' *Glob Health Science Practice*, Vol 4, No 1 p.S87-S96
43. *ibid*
44. i-base (1 October, 2011) '[Orange Farm circumcision results dispel concerns about risk compensation](#)' (accessed January 2019)
45. UNAIDS (2015) '[On the Fast-Track to end AIDS by 2030: Focus on location and population](#)' [pdf]
46. CHAPS '[CHAPS: Facts and Figures: Statistics](#)' (accessed January 2019)
47. UNAIDS (2015) '[On the Fast-Track to end AIDS by 2030: Focus on location and population](#)' , p.50-56 [pdf]
48. Kikaya, V et al. (2014) '[Voluntary Medical Male Circumcision Programs Can Address Low HIV Testing and Counseling Usage and ART Enrollment among Young Men: Lessons from Lesotho](#)' *PLOS One*, Vol 9, Issue 5, e83614.
49. World Health Organization (WHO) (2010) '[Considerations for implementing models for optimizing the volume and efficiency of male circumcision services](#)', p.12 [pdf]
50. Plotkin, M. et al (2013) '["Man, what took you so long?" Social and individual factors affecting adult attendance at voluntary medical male circumcision services in Tanzania](#)' *Global Health: Science and Practice*, Vol 1, Issue 1, p.108-116.
51. UNAIDS (2018) '[Miles to go: global AIDS update 2018](#)', p.56 [pdf]
52. Sgaier, SK et al. (2014) '[Achieving the HIV Prevention Impact of Voluntary Medical Male Circumcision: Lessons and Challenges for Managing Programs](#)' *PLOS Medicine*, Vol 11, Issue 5, e10001641.
53. UNAIDS (2016) '[Prevention Gap Report](#)', p.43 [pdf]
54. PrePex.com '[Device overview](#)' (accessed January 2019)

55. PREPEX '[PrePex locations](#)' (accessed January 2019)
56. Galukande, M et al. (2017) '[Long term post PrePex male circumcision outcomes in an urban population in Uganda: a cohort study](#)', *BMC Res Notes*, Vol 10, Issue 522.
57. Sgaier, SK et al. (2015) '[Toward a Systematic Approach to Generating Demand for Voluntary Medical Male Circumcision: Insights and Results From Field Studies](#)' *Global Health: Science and Practice*, Vol 3, Issue 2, p.209-229.
58. Downs, JA et al (2017) '[Educating religious leaders to promote uptake of male circumcision in Tanzania: a cluster randomised trial](#)', *The Lancet*, Vol 389, Issue 10074, p.1124-1132.
59. UNAIDS (2018) '[Miles to go: global AIDS update 2018](#)' p.58 [pdf]
60. AVAC (2018) '[No prevention, no end: 2018 Annual Report](#)', p.11 [pdf]
61. JSI/USAID '[STAR-EC Technical Brief: Scaling up voluntary medical male circumcision in East Central Uganda](#)' [pdf]
62. *ibid*
63. UNAIDS (2018) '[Miles to go: global AIDS update 2018](#)', p.58 [pdf]
64. *ibid*
65. Clearinghouse on Male Circumcision (2014) '[JHU-CCP Printed Materials and Radio Spots](#)'
66. JSI/Johns Hopkins Bloomberg School of Public Health (2014) '[Promising Practice: Tanzania JHU/CCP: Printed Materials and Radio Spots](#)'
67. Clearinghouse on Male Circumcision (2013) '[Kenya: Internews Journalist Training](#)', Clearinghouse on Male Circumcision (2015) '[Communications Support for Health](#)'
68. PEPFAR (2014) '[Involving Women in VMMC in Uganda: Presentation by John Byabagambi](#)', p.7 [pdf]
69. USAID '[Gender Integration in VMMC to Improve Outcomes: Involving Female Partners](#)' [pdf]
70. Kaufman, MR et al. (2018) '[Females' Peer Influence and Support for Adolescent Males Receiving Voluntary Medical Male Circumcision Services](#)', *Clinical Infectious Diseases*, Vol 66, Issue 3, p.183-188.
71. World Health Organization (WHO) (2012) '[Factsheet: Voluntary medical male circumcision for HIV prevention](#)' (accessed January 2019)
72. Tchuente M, Palmer E, Haté V, Thambinayagam A, Loykissoonlal D, et al. (2017) '[Correction: The Cost of Voluntary Medical Male Circumcision in South Africa](#)' *PLOS ONE*, Vol 12, Issue1, e0169710.
73. Galárraga O et al. (2018) '[Cost and cost-effectiveness of voluntary medical male circumcision in street-connected youth: findings from an education-based pilot intervention in Eldoret, Kenya](#)', *AIDS Research and Therapy*, Vol 15, Issue 24.
74. World Health Organization (WHO) & UNAIDS (23 February, 2007) '[WHO and UNAIDS Secretariat welcome corroborating findings of trials assessing impact of male circumcision on HIV risk](#)' (accessed January 2019) [pdf]
75. Kaufman, MR et al. (2017) '[Voluntary medical male circumcision among adolescents: a missed opportunity for HIV behavioral interventions](#)', *AIDS*, Vol 31, p.233-241.
76. UNAIDS (17 October, 2016) '[Feature story: Voluntary medical male circumcision: a core campaign to reach the Fast-Track Targets](#)' (accessed January 2019)
77. UNAIDS (2007) '[Male circumcision: global trends and determinants of prevalence, safety and acceptability](#)' [pdf]

78. Clearinghouse on Male Circumcision '[Social and behavioural research](#)' (accessed January 2019)
79. *ibid*
80. Riess TH et al. (2014) '[Women's beliefs about male circumcision, HIV prevention, and sexual behaviors in Kisumu, Kenya](#)', PLOS ONE, Vol 9, Issue 5, e97748.
81. Praekelt Foundation (2011) '[YoungAfricaLive Youth Sex Survey](#)' (accessed January 2019)
82. Clearinghouse on Male Circumcision '[Social and behavioural research](#)' (accessed January 2019)
83. Clearinghouse on Male Circumcision '[Social and behavioural research](#)' (accessed January 2019)
84. Macintyre, K et al. (2014) '[Attitudes, perceptions and potential uptake of male circumcision among older men in Turkana County, Kenya using qualitative methods](#)' PLoS ONE, Vol 9, e83998.
85. Sgaier, S.K. et al (2014) '[Achieving the HIV Prevention Impact of Voluntary Medical Male Circumcision: Lessons and Challenges for Managing Programs](#)', PLoS Medicine, Vol 11, Issue 5, :e1001641.
86. Patel, EU et al. (2018) '[Age Differences in Perceptions of and Motivations for Voluntary Medical Male Circumcision Among Adolescents in South Africa, Tanzania, and Zimbabwe](#)', Clinical Infectious Diseases, Vol 66, Issue 3, p.173-182.
87. POZ (29 July, 2014) '[Male Circumcision Doesn't Raise Sexual Risk-Taking in Zambia](#)' (accessed January 2019)
88. Shi, CF et al. (2017) '[Evidence that promotion of male circumcision did not lead to sexual risk compensation in prioritized Sub-Saharan countries](#)', PLOS One, doi.org/10.1371/journal.pone.0175928.
89. Govender, K et al. (2018) '[Risk Compensation Following Medical Male Circumcision: Results from a 1-Year Prospective Cohort Study of Young School-Going Men in KwaZulu-Natal, South Africa](#)', International Journal of Behavioral Medicine, Vol 25, Issue 1, p.123-130.
90. World Health Organization (WHO) (2012) '[Factors associated with the safety of voluntary medical male circumcision in Nyanza province, Kenya](#)'
91. Underhill, K (2013) '[Study designs for identifying risk compensation behavior among users of biomedical HIV prevention technologies: balancing methodological rigor and research ethics](#)' Social Science and Medicine 94:115-123
92. Wamai, R.G. (2011) '[Male circumcision for HIV prevention—current evidence and implementation in sub-Saharan Africa](#)', JAIDS, Vol14, Issue49.
93. Aidsmap(12 March, 2007) '[Women may be at heightened risk of HIV infection immediately after male partner is circumcised](#)' (accessed January 2019)
94. Tobian, AA. et al. (2009) '[Male circumcision for the prevention of HSV-2 and HPV infections and syphilis](#)', The New England Journal of Medicine, Vol360, Issue13, p.1298-1309.
95. Tobian, ARA and Quinn, TC (2014) '[Prevention of syphilis: another positive benefit of male circumcision](#)', The Lancet Global Health, Vol 2, No. 11, e623-e624.
96. Morris, BJ and Hankins, CA (2017) '[Effect of male circumcision on risk of sexually transmitted infections and cervical cancer in women](#)', Lancet Global Health, Vol 5, Issue 11, e1054-e1055.
97. Women's HIV Prevention Tracking Project (2010) '[Making medical male circumcision work for women](#)', p4 [pdf]

98. Women's HIV Prevention Tracking Project (2010) '[Making medical male circumcision work for women](#)', p4 [pdf]

99. Womenshealth.gov (2009) '[Female genital cutting fact sheet](#)' [pdf]

Last full review:

07 January 2019

Next full review:

06 January 2020