Desktop Review of Male Circumcision Research and Services in South Africa

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Desktop Review of Male Circumcision Research and Services in South Africa

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LIST OF ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ART	Anti-Retroviral Therapy
BCC	Behaviour Change Communication
CBE	Community Based Educators
CBO	Community Based Organisation
HIV	Human Immuno-Deficiency Virus
HCT	HIV Counselling and Testing
IEC	Information, Education and Communication
MC	Male Circumcision
MMC	Medical Male Circumcision
NGO	Non Government Organisation
NMC	Neonatal Male Circumcision
M & E	Monitoring and Evaluation
PLWHA	People Living With HIV & AIDS
PMTCT	Prevention of Mother to Child Transmission
STI	Sexually Transmitted Infection
THPC	Traditional Health Practitioners Council
UNAIDS	Joint United Nations Programme on HIV & AIDS
WHO	World Health Organization

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SUMMARY

In the past decade, the number of people infected with HIV in South Africa [SA] has risen dramatically. South Africa, with 0.7% percent of the world's population, is now home to 17 % of all people living with HIV infection globally. Currently an estimated 5.7 million people, (16.9% of the population) are living with HIV & AIDS[1]. Despite relatively high levels of HIV awareness, and various prevention efforts, a further 1 500 new infections occur daily.

The World Health Organization (WHO) recommended medical male circumcision (MMC) as an HIV prevention measure in 2007 after it was proven to reduce the risk of HIV infection through heterosexual transmission by up to 60% [2]. Furthermore, findings from male circumcision (MC) trials conducted in South Africa [139] and Uganda [140] showed that circumcision offers men partial protection against human papillomavirus and herpes simplex virus type 2 according to an editorial in the *New England Journal of Medicine* [141]. These data add to the already compelling arguments for supporting MC in SA with a high prevalence of heterosexually transmitted HIV and low use of condoms. South Africa combines high HIV prevalence with relatively low prevalence of MC. On the basis of current evidence, promotion of MMC in HIV infected men is not recommended except for medical indications.

There is strong political commitment and leadership for introduction of MMC as an HIV prevention strategy in SA, as well as encouragement from US and other development partners. The South African National Department of Health [NDoH] is adopting implementation of MMC as part of a package of HIV prevention interventions, after extensive consultations with the South African National AIDS Council [SANAC], civil society and traditional leaders. At the national level, there is a coordinated multi-sectoral national response to developing MMC guidelines, with SANAC primarily responsible for coordination.

South Africa's MMC policy is being finalised and guidelines have been drafted to guide and regulate the practice of male circumcision in SA. Hence, the SANAC Research Sector Coordinating Committee on MC commissioned this desk review of existing local data on MC as part of a situational analysis to inform implementation of MMC as part of the South African HIV prevention programme.[3] This review consolidates the local data on circumcision as at the end of 2009 to inform finalisation of policy and programming. Information was collated on the current

levels of MC in the country, capacity to scale-up MMC and the resources that will be required, cost-effectiveness of introducing MMC as a strategy; whether MMC is more effectively delivered as a stand-alone service or as part of a prevention package; the current demand for MC; public awareness of the benefits of MC; and the misconceptions around MC.

MC is not widely practised in South Africa except among subpopulations such as the Xhosa and Sotho ethnic groups, and members of Jewish and Islamic religious groups. According to calculations carried out by UNAIDS (2007) [2], at least 52.5% coverage is required to significantly reduce HIV infection rates, hence the provision of MC needs to be scaled-up considerably. In the Eastern Cape, where most men are circumcised, the HIV prevalence rate is slightly lower than in KwaZulu-Natal [KZN], where most men are not circumcised[4]. In North Western Province which also has the lowest HIV prevalence rates (7%) in the country, MC has been traditionally practiced While these findings are not incompatible with evidence from trials showing that circumcision reduces the risk of HIV transmission, they demonstrate that there are far more important factors affecting HIV spread than the absence of circumcision.

Actuarial modelling showing the impact that mass circumcision might have in South Africa provides an estimate of a modest 9% reduction in the incidence of HIV cases over the next 10 years i.e. (an average risk reduction of <1% a year)[5].

The scaling-up of MMC in South Africa will require an expansion of service provision to meet an expected dramatic increase in the demand. Realistically, MMC could not be rolled-out to every public sector health facility in South Africa, given the potential increase in costs and strain on currently over-stretched health services. Only about 1/3 of health centres currently have adequate facilities, equipment and staff to conduct MMCs. The majority of primary health clinics do not have the capacity to perform MMC procedures. MMC services would need to be concentrated in larger facilities such as district level hospitals with facilities for minor surgical procedures, reliable supplies of water and electricity and sufficient appropriately trained staff to conduct the procedure and follow-up counselling.

The shortage of trained service providers and other constraints facing in the public sector will impact negatively on the ability to rapidly implement MMC. There is a well known shortage of skilled human resources in the SA health service sector - it is difficult to attract and retain

medical staff given the inequalities in government service and private sector employment. This is aggravated by the migration of health workers to developed countries.

Currently only medical doctors are authorised to perform MMCs in South Africa. In order to scale-up the provision of MMC, nurse clinicians will need to be given the authorisation and training to conduct MMC. Most medical doctors and all professional nurses will need additional training in order to undertake MC surgical procedures and follow-up. This will require an extensive programme involving not only initial training, but also ongoing mentoring and supervision to minimise the occurrence of surgical complications and adverse effects. Whilst the equipping of Nurse Clinicians could greatly extend the provision of MMC in rural areas, many of these facilities would also need upgrading.

MMC requires trained medical practitioners, but also competes for the scarce supply of trained counselors, health educators, and field personnel who are the backbone of other HIV prevention and treatment modalities. There is a need, therefore, to ensure that MMC services for HIV prevention do not unduly disrupt other health care programmes, including other HIV/AIDS interventions. In order to both maximise the opportunity afforded by MMC and ensure longer-term sustainability of services, MMC should, wherever possible, be integrated with other services.

The lack of capacity in the health services is further complicated by other programmes impacting on the health system such as antiretroviral treatment (ART) and prevention of mother-to-child transmission [PMTCT]. Scale-up of safe MMC on a large scale would require greater investments not only in training, but also in equipment, facilities and the recruitment of more health professionals.

Two studies have estimated the cost-effectiveness of MC for HIV prevention in Africa. The cost-effectiveness of expanding MMC services will depend on many factors, including the costs of the surgery and of averted HIV treatment. The first study to be published assumes full coverage of MC in Gauteng Province, South Africa (location of the randomised controlled trial), which has an adult male HIV incidence of 3.8%. Based on the cost per circumcision in the trial of $47, the authors estimated that 1000 circumcisions would avert an estimated 308 (95% CI = 189–428) infections over 20 years. The cost was $182 (80% CI = $117–306) per HIV infection averted, and net savings would be $2.4million (80% CI = $1.3–3.6 million) [9].

The total cost of scaling-up MMC in order to achieve minimal coverage (52.5%) which could effectively reduce HIV prevalence is approx. 125.9 million ZAR from 2008 to 2020. This would cost R9.6 million annually[2]. This investment would have an impact of reducing one HIV infection for every 6.1 MCs performed. Therefore the cost per infection averted would be R2 136.00. This is potentially cost effective compared to the cost of lifelong antiretroviral treatment; and the effectiveness of other prevention measures [2].

Currently very few MMCs are performed in SA Government health facilities, the majority are conducted by private doctors and non-government agencies. A significant expansion of MMC in South Africa will necessitate the participation of key private and non-government health institutions in scaling-up of the services. However, fees at private surgeries and clinics range from R600.00 to R1700.00. Costs will need to be subsidised considerably in order for men from poorer households to be able to access MMC services for prevention purposes unless public sector access is improved considerably.

A national consultation was held in 2009 to consider integrating MMC as part of a national HIV prevention strategy. There was general agreement that, in order to achieve a significant reduction of HIV infections, MMC needs to be provided as part of a comprehensive package of HIV prevention services and interventions that includes consistent, correct condom use, delaying sexual debut, promoting sexual and gender equality, access to HIV Counselling and Testing (HCT), reduction of sexual partners and multiple concurrent partnerships, and STI treatment[6]. Only when combined with preventative measures such as the above, can MMC become effective in reducing the rate of HIV infection in South Africa.

Promotion of the availability of services that are provided in non-stigmatised settings is key to ensuring their uptake. Findings from this desktop analysis indicate that a large part of the South African population, particularly in the rural areas, are not aware of the benefits of MMC for reducing the risks of STI and HIV infection. This is due to the fact that insufficient information on MMC has been made available to the public through health facilities or other agencies to date.

A national awareness campaign is necessary to increase both public understanding and demand for MMC. There is also a need to promote and clarify the health benefits of MMC as well as the protective effect of MMC for reduction of HIV and STIs. Careful and responsible communication

that targets men, as well as women as partners and mothers was identified as a critical factor in ensuring public understanding around MMC and HIV prevention.

The importance of clear communication and messaging to stress that MMC offers only partial protection is of paramount importance. This will need to address the misperception prevalent amongst South African young men that circumcision renders one completely safe from HIV infection. This belief, if not addressed could result in abandonment of other prevention measures, and sexual disinhibition and nullify the potential benefits of MMC. Given the advantages of neonatal MMC, an educational campaign should also target parents to promote the benefits of having their sons circumcised at a young age, long before the risks of HIV and sexually transmitted infections arise.

Religion and ethnicity are strongly associated with MC in SA. Findings from this report indicate that there is still confusion within communities about the role of MMC and traditional initiation. It is crucial that the major role of MMC be clarified (as that of reducing the risk of STIs and HIV infection) through greater cooperation with traditional leaders, initiators, healers and/or providers to ensure that MMC can complement and not compete with cultural rites of passage. Ensuring the buy-in of traditional leaders will therefore be essential to a successful national MMC programme.

Key challenges facing SA in implementation of the National MMC programme therefore include integration with existing overburdened and resource constrained health systems; integration of MMC with the existing HIV prevention package; 'reciprocal linking' of health services with traditional MC; coordination of donor and other stakeholder activities; managing gender implications whilst ensuring protection for both men and women.

In order to achieve the required protective effect over a short period of time, intensive efforts to scale up access and availability of safe, quality MMC services are required. The following recommendations from this review should be taken into consideration in expanding, promoting and integrating MMC into existing health services:

- A plan for introduction of voluntary neonatal MMC services within the provisions of the Children's Act of 2005, and integration of neonatal MMC into existing maternal, women, neonatal and child health programmes be drawn up.

- MMC must be delivered as part of a recommended minimum package which includes counselling about risks and benefits of MC, counselling around risk reduction, HIV counselling and testing, couple counselling, condom promotion and provision, and STI management.

- A plan for reciprocal linking of traditional and medical MC is required. MC in traditional settings should include standards for infection control, pain management, and counselling on HIV prevention, sexual and reproductive health and rights of women and mechanisms to train traditional MC providers are urgently required. In addition, messaging around reduction of stigma and discrimination for males who opt for circumcision in clinical settings and before the age of traditional initiation is necessary.

- A forum be set up to ensure structured coordination and communication of activities and resources of donors and other stakeholders including policymakers, technical teams, private and public sector health providers.

- A culturally sensitive communications strategy for promoting acceptability and access to both adult and neonatal MMC and for dissemination of consistent and correct packaging of messages targeted at both men and women around MMC is critical.

- In order to address human resource challenges, service integration, task sharing, standardisation of methods and equipment, large scale training programmes for health providers and integration of private sector health providers must be undertaken.

- The need for existing mechanisms to monitor and evaluate the impact of the proposed national MMC guidelines and the quality of care, such as indicators for monitoring and evaluation, and quality assurance standards must be urgently addressed.

- Consideration should be given to the expansion of dedicated sexual and reproductive health services in SA, targeted at young men. This could include MMC as well as counselling on sexual health, substance abuse etc.

OBJECTIVES

- To systematically review, summarise and assess all relevant evidence in South Africa on provision of MMC services associated with improved health outcomes (intermediate and ultimate) including: factors influencing uptake, acceptability, reduction of STIs and HIV, improved health and wellbeing.
- To identify where and how MMC services could be made available.
- To gather country specific information on the scale of MC services and the nature and capacity of these services.
- To identify trends in MC rates.
- To review the policy environment.
- To inform political and resource decision- making.
- To inform scaling up of safe MMC in the SA context i.e. where and how MMC services can best be implemented rapidly.

METHODS

A regional MC toolkit developed by the WHO provided a framework and tools that were adapted and utilised to guide this desktop analysis of MC research and services in South Africa [156]. Although the Toolkit focuses on the formal health sector it, was adapted for review of traditional MC in South Africa.

The review is based on documentary sources, news reports, studies, reviews, technical reports, policy documents, commentaries, opinion papers and position papers that were available at the beginning of 2010. These articles or reports included systematic reviews; randomised controlled

trials; case-control studies; cohort studies (prospective and retrospective); cross-sectional studies; policy documents/technical reports; methodological papers; and reviews, commentaries opinion pieces, and newspaper articles. Studies and reports which were published more than 5 years ago seemed irrelevant and were not included. The study team extracted data from full reports or papers of all included studies. In a few instances, the full text could not be accessed and the study was assessed on the abstract only. The search was restricted by country of origin and language (where access to translation was an impediment within the review timeframe). The search was conducted by the authors and a postgraduate student intern.

Media sources were restricted to South African media coverage within a two and a half year time-frame (May 2007- December 2009) that was available electronically. Many of the major publications in South Africa are available online. The following computerised archives were searched: Independent Online, Mail & Guardian online, Health Systems Trust and *PlusNews*. A search entering the key words "MC" was conducted. While this is not likely to be an exhaustive search, many similar articles were found indicating a level of saturation.

Websites including Reproductive Health Gateway, Development Gateway, WHO, Family Health International, Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs, UNFPA, Global Health Council were searched for relevant studies reviews, reports, commentaries, opinion papers and position papers. Reference lists of all identified publications were searched for other relevant literature.

Requests for unpublished studies, studies not found in the databases, conference proceedings, reports, opinion papers and position papers were through personal communications and through electronic lists e.g. Health Systems Trust's 60 percent.

The findings from this information are presented below detailing the extent of MMC, the provision of services, current trends, influencing factors, and the policy and legal environment.

RESULTS

1. Key Determinants of Male Circumcision

The determinants for MC in SA, i.e. decisive influences on why males are circumcised or not vary across different groups within the country.[9]

1.1 Ethnic group

Acceptability of MMC remains a significant concern in SA, due to strong cultural values regarding circumcision status and practices. According to the SADHS, 2003, the vast majority of those who are circumcised in SA are African men (50.4%); fewer than 25% of Coloured, Indian and White males are circumcised[118]. The largest ethnic group, the Zulus, have generally not practiced it since the early 19th century, when it was abandoned due to protracted warfare [149]. In recent months the Zulu King Goodwill Zwelithini has publicly proclaimed his support of MC and called for Zulus to embrace the procedure.

1.2 Age

Currently, the majority of clients electing to access MMC at SA health facilities are adults. Most males accessing traditional MC are adolescents. Neonatal circumcision is uncommon in Southern Africa, where the median age at circumcision varies from boyhood to the late teens or twenties [151]. Neonatal MC is recommended by health professionals as the ideal age for MMC due to: (i) simpler surgical procedure involved, (ii) less risk of complications, (iii) much quicker healing process, and (iv) reduced HIV risk secured prior to any initiation of sexual behaviour. Circumcision in infants has the additional benefit of reduced risk of urinary tract infection.

No medical association globally recommends non-therapeutic, routine infant circumcision. Like the American Academy of Pediatrics (AAP) and the Canadian Paediatric Society, the South African Medical Association (SAMA) has formally stated that there is no justification for routine

circumcision of male babies or children and has classified infant circumcision as an "elective procedure to be performed at the discretion of the parents." There is an ethical debate around neonatal MC. The British Medical Association (BMA) states, "We do not believe that parental preference alone constitutes sufficient grounds for performing a surgical procedure on a child unable to express his own view." Routine circumcision of baby boys is rare in Europe, but common in the US, with around 55% of boys being circumcised. It's also widely practised in Australia, with 10%-15% of Australian infant boys being circumcised. It is traditional in Jewish culture to circumcise male infants.

Some African cultures in South Africa circumcise boys in their teens as a rite of passage. Hence, a communications strategy to promote voluntary neonatal MMC and to address discrimination against boys who have been circumcised prior to the age of traditional MC will have to be undertaken.

1.3 Religion

South Africa is predominantly a Christian country. Most males in SA (76.7%) are affiliated to Christian churches .The Bible states that "in Christ Jesus, neither circumcision nor uncircumcision count for anything' (Galatians 5:6). In 1442 the Roman Catholic Church stated that MC was unnecessary. Focus group discussions on MC in sub-Saharan Africa found no clear consensus on compatibility of MC with Christian beliefs. Some Christian churches in South Africa oppose the practice, viewing it as a pagan ritual, while others require circumcision for membership. Others believe Christians should practice circumcision since Jesus was circumcised. Generally in SA, Christians are not bound by MC tradition and it is therefore seldom found amongst male Christians [162; 163].

A minority of South Africans are of Islamic faith (1.5%), have African traditional beliefs (0.3%) or subscribe to Judaism (0.2%) [159]. Islamic and Jewish males are usually circumcised during the first week of life. An alternative source estimates that there are about 500 000 South African males of Islamic faith in a nation of 48 million [150.]

1.4 Cost of procedure

As elective MMC is only available through private sector providers currently, and is not covered by medical aids, those who elect to have the procedure would have to pay between R600.00 to R1700.00 to have the procedure at a day clinic or doctor's surgery. This cost would be prohibitive to the vast majority of potential candidates for the procedure and costs would need to be subsidised considerably in order for men from poorer households to be able to access MC services for prevention purposes through private providers.

1.5 Culture

MC has strong cultural connotations in SA, hence the need to deliver services in a manner that is culturally sensitive. Cultural perceptions of circumcision complicate efforts to improve access to safe and voluntary MMC services in sub-Saharan Africa.

The Xhosa ethnic group practice traditional circumcision of boys as a rite of passage into manhood. After several young Xhosa boys died from circumcision-related complications, then-President Thabo Mbeki signed a bill banning (with some religious and medical exceptions) circumcision in boys under 16 years of age. There are concerns that the deaths associated with traditional MC have prevented expansion of the programme in South Africa, but others argue that offering clean, safe medical circumcision to these communities could be lifesaving.

In the majority of these cultures, circumcision is an integral part of a rite of passage to manhood, although originally it may have been a test of bravery and endurance[152]. Circumcision is also associated with factors such as masculinity, social cohesion with boys of the same age who become circumcised at the same time, self-identity and spirituality. Among the Xhosa in South Africa, men who have not been circumcised can suffer extreme forms of punishment, including bullying and beatings [153.]

1.6 Sexual Factors

Perceived improvement of sexual attraction and performance can also motivate demand circumcision. In Westonaria district, South Africa, about half of men said that women preferred circumcised partners[125].

2. Media Coverage of Male Circumcision

The media are very influential, regardless of whether what they say is true or false. Media coverage can be the source of common 'understandings' and is one of the most important forces for change or resistance to change. This section reviews South African media coverage of MC between May, 2007 and December, 2009. Media coverage of MC is analysed thematically including a description of the media source carrying the story, the messages in the story and any anticipated impact related to the coverage.

Background

The South African Advertising Research Foundation *All Media and Products Survey for 2008* indicates that an increasing number of individuals in South Africa are accessing the media, particularly among the 16-24 year age group. Newspapers are the most popular source of media and reach over 15.1 million readers – over 48% of the adult population. South Africa has approximately 20 daily and 13 weekly newspapers. Most of these publications are in English. One of the fastest growing newspapers is *The Daily Sun*, which now has over five million readers. Other media reaching high proportions of South African adults are television (84%), and radio (18%). Internet usage continues to grow, with 8% of the adult population (> 2.4 million people, accessing the internet weekly). This growth is largely as a result of more adults aged 16 - 24 years accessing the internet [10].

Independent Online

Independent Newspapers, owned by the Independent News and Media (South Africa) Limited, publishes 14 daily and weekly newspapers in the country's three major metropolitan areas and reports sales of 2,8 million copies in Gauteng, KwaZulu-Natal and the Western Cape.

Independent Online (http://www.iol.co.za) is an electronic repository of newspaper articles carried in their publications.

Mail & Guardian Online

The Mail & Guardian Online is reportedly South Africa's biggest online newspaper. Over 530,000 people visit their website every month and 20,000 people receive their daily newsletter.

Health Systems Trust

This organisation, founded in 1992, focuses on health systems in South Africa and collates media articles related to health topics on their website (http://www.hst.org.za).

Health-e News

Health-e is a news agency that produces news and in-depth analysis for the print and electronic media focusing on HIV and public health (http://www.health-e.org.za).

Plus News

Plus News is a news service hosted by IRIN, the humanitarian news and analysis service of the UN Office for the Coordination of Humanitarian Affairs focusing on HIV. This is available at www.plusnews.org.

A total of 106 articles were identified. They are divided into 11 key themes. Table 1 shows the breakdown of the articles reviewed.

Themes:

2.1 Scientific evidence for circumcision

Knowledge of the outcomes of the MC research trials is already in the public domain, 22 articles focused on the scientific evidence for MC. This included stories supporting MMC for HIV prevention and those calling for a more cautious approach.

Articles advocating for MC included an article on the Health Systems Trust's website that highlighted Halperin's views on the effectiveness of MC as an HIV prevention strategy[11]. Another

article cited Halperin's work supporting the reduction of multiple concurrent partners and the implementation of MC[12]. More widely, articles also argued that insufficient attention was being paid to HIV and AIDS in general and that there has been a failure to implement effective HIV prevention strategies, including MC [13; 14; 15; 16; 17]. This included opinion pieces on the failure of HIV prevention programmes to implement known prevention methods such MMC and the need for microbicides and vaccines; and also the failure of resources to be used effectively for scientifically proven HIV prevention strategies such as MMC.

In contrast, opposing voices included those of Green[11] who argued that "the incorporation of MC as an additional HIV prevention strategy is based on "incomplete evidence, and is premature and ill-advised" and an article by Quinlan in the Sunday Times that argued that the scientific evidence for MC did not justify rolling out a programme for HIV prevention [18; 19].

In addition, media coverage of conferences such as the South African AIDS conference [20; 21; 22], International AIDS Conference [23] and the International AIDS Society [24] highlighted research from studies on MMC contributed to informing the public of the latest advances in the field.

Articles also highlighted the need for a policy on MC[25] and speculation on whether MMC would become policy [26].

As scientific evidence accumulated, media coverage moved to include endorsements of MC as a HIV prevention strategy by various agencies. For example, an article indicating UN agencies support for MC[27] and the announcement by the Cochrane Centre that MC definitely reduces the risk of HIV infection among men [28].

Articles describing the science of MC as a HIV strategy and recommending MMC can inform the public and increase the demand for MMC. However, unless the public sector is able to meet this demand, this may result in dissatisfaction.

Newspaper stories such as one in the *Young Communist League* calling for compulsory MC [29] may result in perceptions that MMC programmes will not be voluntary and may make the implementation of programmes challenging.

2.2 Opposing Views on Circumcision from within South African Government

HIV is often covered in the media as a political issue. Much has been made of the South African Government's response to HIV and this is true also for coverage of MC. The Department of Health initially called for more research on MC, stating that evidence on MC was not yet 'overwhelming' and that there was a need to study the socio-cultural impacts of rolling out a circumcision plan [30]. Media reports in particular focused on the then Minister of Health's stance on MC. Several articles covered Dr Manto Tshabala Msimang's comments on circumcision. For example, an article on Health24 reported that despite evidence, the Health Minister believed that the WHO was incorrect in calling for a widespread MC programme; and that MC is a cultural practice [30]. Similarly, another article, quotes the ex-health minister as saying that "Circumcision is a cultural practice and should not be used as a preventative measure in the fight against HIV and AIDS" at a meeting with traditional healers in Limpopo. She went on to add that "role-players (need) to guard against sending confusing messages encouraging people to get circumcised with the hope of not getting HIV infected" [32]. Another article reported no immediate plans to implement a national MC programme and that the minister stated that matters such as MC were "usually not discussed by women and by foreigners" [33].

Whether this earlier media coverage influenced people's perceptions of MC, now that the South African Government is in favour of implementing a policy on MMC is unclear.

2.3 Cost of Medical Male Circumcision

Six articles in the media (four in the *Mail & Guardian*, and two in *Plus News* focused on issues relating to the cost of MMC and created a perception of high cost. These articles raised concerns about the accessibility of MMC services and the funding for these programmes. This included an article on South Africa's largest medical aid insurance company, Discovery Health, which does not cover the cost of voluntary MMC despite evidence that MC is the most effective HIV prevention strategy currently available [34]. The second article in the Mail & Guardian focused on the shortage of funds for the antiretroviral treatment programme and argued that funding

should also be made available for proven HIV prevention strategies such as MMC [35]. An article in Plus News argued that the costs of MC programmes in Sub-Saharan Africa would mean that these services would take a significant amount of time to roll out in the region and hence limit their availability [36]. Similarly another article in the Mail & Guardian cited the cautious approach by international agencies such as UNAIDS despite randomised trials in three countries indicating the protective effect of MC. Concerns expressed included the cost of the programmes that would be required [37] and the impact of cost on safety [38].

These articles could contribute to creating a demand for services which the SA Department of Health is currently unable to meet.

2.4 Traditional/Non-Medical Circumcision

The largest number of articles in the media during the review period was on traditional or non-medical circumcision, predominantly in the Eastern Cape.

Three articles covered the national broadcaster pulling a documentary on traditional circumcision off air at very late notice. The South African Broadcasting Corporation's response was the documentary was not reviewed by an advisory body on cultural and traditional issues. The investigative journalism programme, *Special Assignment* documented the case of the death of a 25 year old student and focused on informal initiation schools and the potential dangers of traditional circumcision [39; 40; 41].

Several other common issues were covered in articles on traditional circumcision. By far the largest number of articles, sixteen in total, reported on deaths or hospitalisation as a result of traditional circumcision in the Eastern Cape. Deaths were largely as a result of septicaemia and dehydration [42; 43; 44; 45; 46; 47; 48; 49; 50; 51; 52; 53; 54; 55; 56; 57; 58]. One article reported on six boys who had to have their penises amputated after undergoing traditional circumcision [59]. IOL also covered the story of three boys running away from an illegal circumcision school [60]. Six articles reported on the arrest of traditional surgeons and nurses for illegal circumcisions, traditional surgeons being given bail or being out on bail after court proceedings [61; 62; 63; 64; 65; 66]. One article reported on an illegal initiation school being closed down and the traditional surgeon was fined R300 [67].

One article questioned the safety of traditional circumcision [68] and another reported on the Democratic Alliance's call for a 'crack down' on initiation schools in Gauteng and the need to regulate traditional circumcision as has been done in the Eastern Cape [69]. Two articles covered the case of a man who claimed he was forcibly circumcised and took the case to court claiming the traditional circumcision was against his religious beliefs as a Christian [70; 71]. Other articles mentioning circumcision included a story on the KwaZulu-Natal government stopping funding for a traditional Reed Dance Ceremony that mentioned in passing the National Children's Act of 2005 that prohibits the circumcision of children under 16 without their consent; with the exception of for medical or religious reasons [72]. Three articles reported that parents would be held liable and potentially prosecuted if their children were circumcised illegally. The law stipulates a fine of R1, 000 or 6 months in jail [73; 74]. One article reported on the death of a 16 year old boy who was circumcised by his older brother [75].

These articles may contribute to negative perceptions of circumcision, particularly traditional circumcision and may polarise public opinion on the matter.

One article raised a concern about the risk of HIV infection after traditional circumcision in the Eastern Cape. The surgeon involved was arrested for not being registered after circumcising two boys. The article quoted a Department of Health spokesperson as stating that the chances are that a number of [those] boys have been infected with HIV" [76]. Clearly efforts to ensure that traditional circumcision is undertaken under safe and hygienic conditions are required.

One article reported a reduction in the number of deaths arising from traditional circumcision in the Eastern Cape as a result of the 'safe circumcision campaign' costing R4.5 million. The Eastern Cape Department of Health said only four deaths had been reported in comparison with over 20 during the same period in the preceding years. The campaign also worked closely with traditional leaders in the area [77]. Interventions to make traditional circumcision safer will be essential to implementing a national MMC programme.

2.5 Traditional Leaders & Circumcision

SA Traditional Leaders have also spoken out about MC, expressing a diverse range of views. At a National Heritage Council Conference, traditional leaders felt that minorities viewed traditional practices such as circumcision as “barbaric” and that there was a need to respect African belief systems and culture [78]. Media coverage of a meeting between the Department of Health and traditional leaders on MC reported that Inkatha Freedom Party leader, Mangosuthu Buthelezi, supported MC for HIV prevention despite the fact that it is no longer practiced under Zulu culture. The article goes on to state that "there were giggles amongst the audience when Buthelezi said that Zulu King Shaka had banned the circumcision practice because he thought it was a waste of time given that there were wars to be fought… He felt that initiates were taking too long to recover... as he needed them for his campaigns" [79].

An article on the corruption of African traditions cited the commercialisation of circumcision as a money making industry as an example of how culture has changed as a result of Western influences [80]. The same theme appeared in another article, quoting the spokesperson for the North West Provincial government as saying that government did not intend to interfere with traditional practices and customs, but that human rights had to be respected. He also condemned the commercialisation of initiation schools [81].

There was also one article entitled ‘White boy undergoes black ritual’ where a school boy from East London had chosen to undergo the Xhosa circumcision ritual. The article reported that he was the second boy to do have done so that year [82]. Ensuring the buy-in of traditional leaders will be essential in a successful national MMC policy.

2.6 Circumcision & Gender

Four articles focused on circumcision and gender, including coverage of a press statement on UNGASS’s goals which supports increasing research to explore the impact of MC on women [83], and the failure to include women’s views on circumcision in the debate, particularly before any policy is developed [84]. Other concerns raised were the role of women actively participating in initiation ceremonies including the promotion of alcohol resulting in unsafe sexual behaviour [85] and that MC may hold few benefits for women [86]. More research on the impact of MC on women is needed.

2.7 Masculinity & Circumcision

Fourteen articles focused on masculinity and circumcision. This included an article on a man being stabbed to death during an argument over what a 'real man' was, and whether men circumcised medically were considered to be 'real men' in this regard [87]. Four articles focused on a publicised argument between Helen Zille, the leader of the Democratic Alliance, and Julius Malema from the ANC Youth League. The argument started when Zille challenged Malema on the basis of him not being circumcised and called him a boy in isiZulu – an "*inkwenkwe*" and "wet behind the ears". Articles reported on the argument including commentary from traditional leaders on whether women were allowed to discuss whether a man was circumcised [88; 89; 90; 91]. Another story receiving a fair amount of coverage (reported in seven articles) was the traditional circumcision of ex-ANC Youth League president Fikile Mabulala at age 37. Articles included reports on the ceremony, commentary on whether the ceremony had been conducted in accordance with tradition and three articles featured comments from traditional leaders on how being circumcised would improve Mabulala's ability to be a leader [92; 93; 94; 95; 96; 97; 98]. A final story reported on real men not needing pain killers for the traditional ritual in rural Uganda [99].

Articles such as these may create the impression that only traditionally circumcised males are 'real men' and may result in tragic consequences. The articles also raised questions about who is allowed to speak about MC and may have implications for HIV programmes where many service providers are women.

An opinion piece in the Mail & Guardian cautioned against rushing into a mass MC programme citing several examples of potential threats as a result of the link between circumcision and manhood. Sayagues warns of the potential of messages endorsing discrimination and exclusion particularly with regards to certain terminology in isiZulu. She also mentions the case where three men were shot and killed in a bar in Durban after an argument about the size of one man's penis. She warns that marketing MC as something 'real men' do could result in prejudice and in tensions between Zulu and Xhosa speakers [100].

Clearly, messaging around MC will have to be developed in collaboration with a range of stakeholders and tested on a variety of audiences if the promotion of MMC is to be successful.

2.8 Circumcision & Sexual behaviour

Two articles focused on circumcision and sexual behaviour. The first article in The Daily News reported on risks factors associated with HIV transmission, which included low levels of MC. A survey conducted by Soul City in ten countries in Africa, including South Africa found that "multiple and concurrent sexual partnerships, associated with low consistent condom use and low levels of MC, were pervasive in the 10 countries in which the study was done" [101]. Another article questioned whether circumcision could harm a man's sex life. The article reported on two contradicting studies published in the New Scientist. The first study conducted in Canada found no difference in penile sensation between 20 circumcised and 20 uncircumcised men. The second study conducted at Michigan State University found the penises of circumcised men were less sensitive in five key areas, especially those in the folds exposed during an erection [102].

It is not clear whether media coverage of MC will result in uncircumcised men being associated with an increased risk of HIV infection. In addition fears about sexual performance after circumcision may also affect individual's choices to be circumcised.

2.9 Circumcision & Psychological Trauma

One article on IOL, based on the PhD thesis of a medical anthropologist linked circumcision to mental illness. She found five men had experienced acute psychotic episodes after undergoing traditional initiation ceremonies. She argues that the stress experienced during the ceremony may have contributed to the onset of psychological illness in the young men and that the fact that the father of the men did not participate in the ceremony seemed to be a key factor in this anxiety. The young men suffered from schizophrenia, bipolar disorder or cultural bound syndrome (a disorder brought on by cultural pressures) [103].

Articles such as the one referred to above may make it more difficult to promote MMC as an HIV prevention strategy in SA.

2.10 Circumcision in SADC region

Eleven articles focused on coverage of SADC countries and circumcision. This included articles on Uganda focusing on the acceptability of MC, [104] and the increasing demand for circumcision [105], in Kenya where MC could potentially result in stigma and the implications of circumcision among non-circumcising cultures [106; 107], in Swaziland focusing on the potential for disinhibition as a result of MC [108] and the drivers of the epidemic which included low numbers of circumcised men [109] ;an article about Roger Moore's visit to the country where he highlighted the circumcision programme [110] and in Malawi covering a debate on implementing MC as national policy [111]. Coverage also included SADC resolutions on MMC; this included a debate held at a SADC meeting [112] and calls for SADC to support MMC [113]. Hence, there is considerable regional support for MMC programmes that SA can draw on for implementation practices and challenges to implementation of MMC programmes.

3. Male Circumcision Rates in South Africa

It is difficult to determine the trends in MC in South Africa, given that no routine statistics are kept currently. MC is not widely practiced in SA, except amongst certain ethnic groups (largely Xhosas and Sothos) and for religious reasons amongst the Muslim and Jewish communities.

The only currently available data on country–wide MC rates is from 2003. According to this South African Demographic Health Survey [118], the overall rate of MC in men 15-59 years in SA was 44.7%. Provincial rates were as follows: Gauteng: 25%; KZN: 27%; Eastern Cape: 44%; Western Cape: 68%; and Free State: 71%. Rates of MC were similar in urban (43%) and rural (49%) areas and MC was reported more commonly in older men. However, these rates were probably over-reported as it has been shown that men do not identify themselves accurately as being circumcised: Of 28% of men who reported that they were 'circumcised'. 45% were not [120]. Hence, current trends in MC can only be estimated by the opinion of various stakeholders.

It is perceived that there has been a general decline in the number of men being circumcised at initiation schools, due to the declining influence of traditional culture upon young men.

Historical data suggest that the MC rate has decreased over time in SA; Zulus were circumcised 200 years ago but are not commonly today [136, 137].

In recent years, as young men have become increasingly aware of the health benefits of MC for reducing the risk of STI and HIV infections, they have been approaching health centres in increasing numbers for safe MMC. [Table 2 summarises results of SA MC studies; Table 3 summarises the percentage of men that are circumcised and HIV positive [123] ;and Table 4 summarises variations in circumcision setting (clinical or traditional) by ethnic group. [125]]

4. Medical Male Circumcision in Public Sector Health Facilities

Very few MMC procedures are conducted each year in government health facilities. The service is provided to both adults and children only for medical indications following recommendation or referral by a doctor and is free of charge. MMC cannot be obtained on demand. Only doctors are currently authorised to perform MMCs. The availability of MMC in the public sector is confined to district hospitals and, for many in the rural areas, access to district hospitals is limited and involves several hours' travel at a cost that many low income groups can seldom afford. Data on the safety of the procedure and rates of adverse events is currently not collected through existing public sector monitoring and evaluation processes.

5. Medical Male Circumcision in Non-Government Health Facilities

Currently South Africans can only access MMC services on demand, without recommendation from a health provider, through private providers if they cover the cost of the procedure themselves. MMC procedures may be obtained for both elective and medical indications at private sector non-government health facilities and faith-based facilities. The number of MMCs carried out per annum at non –government facilities is difficult to estimate as only ad hoc information is available.

The majority of South Africans access elective circumcisions through private medical practitioners for cash payment. The cost of MMC at private sector general practitioner day clinics under local anaesthesia ranges from R600.00 to R1700.00. Currently, if a patient is admitted to a private hospital for MMC conducted by a specialist surgeon or urologist, the cost is approximately R9000.00 (including doctor and general anaesthesia fees).

In 2007, a committee of scientists, advocates and others advising the South African government recommended offering circumcisions as quickly as possible, possibly by contracting private doctors whilst public health workers were trained.

About a fifth of South Africans (5 million) belong to approximately 100 medical aid schemes in SA. The cost of elective circumcision is excluded by most medical aids as it is deemed an unnecessary cosmetic procedure. Medical aids only approve payment of MC for medical indications. South Africa's largest medical aid, Discovery Health does not cover voluntary circumcision, however, two large medical schemes Bonitas and the Government Employees Medical Scheme (GEMS) are currently funding the procedure [34]. In addition, Anglo Medical Scheme covers the procedure as a result of its benefits in terms of HIV prevention [115].The average number of circumcisions performed per medical aid is 64 per annum, an estimated 6 400 cases each year.

Islamic religious organisations commonly offer neonatal MC, often at subsidised or minimal cost (in the region of R350.00). Islamic neonatal MC is generally conducted by experienced generalist medical practitioners in private medical practices. There is no documented evidence of the safety of the procedure or on rates of adverse events in the private sector although anecdotal reports of almost no adverse reports exist.

The *Bophelo Pele* MC centre in Orange Farm township, Gauteng is the only facility in South Africa offering MMC without charge. Costs are covered through donor funding. The MC service is comprehensive and includes HIV prevention counselling, MC counselling, and the offer of HIV testing and CD4 counts if appropriate. Men are counselled to continue using condoms post-circumcision. The procedure is conducted under local anaesthetic. The WHO MOVE model that is used is simple, safe, quick and cost-effective and is now being replicated at facilities across the region. Population Services International, an NGO that provides counselling at the Orange Farm clinic, is implementing the practice in Zimbabwe in collaboration with the Health Ministry

and is the recipient of $50 million from the Bill and Melinda Gates Foundation to work with the governments of Zambia and Swaziland to circumcise 650,000 men in these two countries [137].

Bophelo Pele circumcised a reported 12,000 men between January, 2008 and December, 2009 demonstrating that mass MMC is a feasible and cost-effective HIV prevention strategy [137]. Each circumcision costs between US$25 and $37 (approximately R300.00), depending on the number of procedures performed that day. Of this; $17 is for a surgical kit, the rest is spent on staff, operating costs, and an extensive MMC outreach campaign that aims to reach every household in the township. A study of the cost-effectiveness of the operation suggested that, if scaled up to 25,000 procedures a month at $47 (£31) each, more than $60m in antiretroviral treatment costs could be saved over eight years. This analysis also suggests that MC, at $181 in programme cost per HIV infection prevented and cost saving when adjusted for averted medical costs, is amongst the most economically efficient of HIV prevention strategies in sub-Saharan Africa.

Marie Stopes International, a government- approved NGO that focuses on family planning and women's reproductive health services now offers MMC services; [114] 200 MC procedures are performed annually at a reduced cost [138].

The SA private sector, especially general medical practitioners has significant untapped capacity and expertise to deliver MC services and the public sector needs to look at creating a forum through which this resource can be harnessed to support overburdened public health services.

6. Male Circumcision in Non- Medical Settings

The estimated number of MCs carried out per year in circumstances other than in health facilities, including in traditional settings is difficult to estimate. Approximately 101 000 Xhosa men between 15-25 years are circumcised annually in the Eastern Cape, generally under cultural conditions or "rite of manhood". Lagarde et al, 2003 reported that more than a quarter of Xhosa men and almost a fifth of Sotho men who were circumcised had the procedure conducted in traditional settings (Table 4). In ritual adult circumcision the procedure is usually conducted by a traditional surgeon, and is usually of the 'guillotine type; where the foreskin is pulled forward and chopped off.

Eastern Cape Provincial Health Department spokesman Sizwe Kupelo told Reuters news agency that boys as young as 11 had died as thousands of young men went into the bush alone, without water, to attend initiation schools each year. There is concern around the considerable number of deaths arising from illegal circumcision in the Eastern Cape.

The cost of MC through illegal initiation schools ranges from R150- R1500. A law was recently introduced requiring initiation schools to be licensed and only allowing circumcisions to be performed on youths aged ≥18 years. Cultural issues related to traditional circumcision include the high rate of adverse outcomes of some traditional circumcision; attitudes towards having traditional circumcision performed surgically, and contentious issues around potentially being treated by women health care providers for surgical procedures.

7. Specific Male Circumcision Programmes (SA National Defence Forces)

In May 2007 the Institute of Security Studies hosted a seminar examining the implications of 'rolling out' mass male circumcision and how this was likely to affect members of the Military and the Police. The ongoing research has shown challenges of cultural inhibitions, differences in religious influences as well as raising concerns around the possibility of diluting the 'condomise message' that appears to have become accepted [160]. All these findings were shared amongst policy makers and practitioners, effectively contributing to policy formulation.

Challenges faced in implementing MMC for the armed forces include the fact that military personnel often live in isolated areas. As with the general public, there is low MC awareness in the defence. Other policy challenges in implementing MMC in the military include deciding who is to be targeted: new recruits or all members of active service. Second, issues of human rights have to be considered, as well as concerns about coercing personnel to participate in circumcision programmes

HIV/AIDS programmes in the military are resourced by direct military budgets but efforts are increasingly made to draw from the national health budget. SA may need to mobilise resources from outside the country to implement such programmes in the defence forces.

Mandatory circumcision of military personnel would violate their rights under Article 2, Section 12 of the Constitution of South Africa. This action, therefore, is prohibited to the armed forces [164].

Consolidating advocacy and policy support for MMC within the SA Armed Forces would require systematically targeting senior officers and the army's leadership with awareness and information sharing workshops, seminars and meetings, as well as addressing the concerns of activist groups [165].

8. Conditions under which Male Circumcision is carried out

A UNAIDS fact sheet notes that "where health professionals have been trained and equipped to perform safe MMCs," postoperative complications occur in 0.2 to 2 percent of cases [143]. When the procedure is carried out under correct conditions, the risk of adverse events among adult men (mainly bleeding, infection and swelling) are about 2%, and these are readily treatable. In many parts of South Africa, however, MC takes place under conditions that are less ideal than these, including circumcision by "traditional surgeons" associated with rituals of initiation into manhood. There are many reports of adverse outcomes of traditional circumcision of boys and young men, including sepsis, haemorrhage, dehydration and death [125]. HIV transmission may be another consequence, especially where the same instruments may be used for multiple circumcisions [125]. Ritual adult circumcision, performed as part of the traditional initiation into manhood in some cultures, is certainly not free of complications. Due to the high level of secrecy surrounding the process, as well as a reluctance to seek conventional medical assistance should problems arise, it is difficult to ascertain the true extent of complications. State hospitals in the Eastern and Western Cape regions of South Africa see numerous young men with complications from ritual circumcisions. The most common complication is wound infection, which can usually be resolved with standard medical care. Unfortunately some patients only attend hospital once they are in serious trouble and every year a few young men lose part or all of their penises, and some even lose their lives.

There are no guidelines regarding the choice of anaesthesia for circumcision. Either local or general anaesthesia can be administered and both are in current practice. The choice usually lies with the patient or depends on his co-morbid diseases and risk factors [148].

However, in this review we have highlighted the dangers associated with MC when undertaken in unhygienic, ill-equipped settings by inexperienced providers. There is an urgent need to establish national policies to maximise the safety of MC provision. Expansion and initiation of MC services must ensure that the procedure is carried out safely, under conditions of informed consent and without discrimination.

9. Trend in rate of Male Circumcision

Demand for MMC has already increased in East and southern Africa, the region of the world with highest HIV incidence among the general population. It is estimated that the trend in MC rates is increasing in SA. Table 5 summarises estimated trends for the Rate of MC.

10. Government Policies & Laws that relate to Male Circumcision

There are a number of South African Government policies and laws which relate to and could impact on the availability and accessibility of MC practices in South Africa:-

10.1 HIV/AIDS and STI Strategic Plan for South Africa (2007-2011)

South Africa has a stringent, but supportive policy stance on MC. The South African *HIV and AIDS and STI Strategic Plan (DoH, 2007-2011*) states that there should be support for and monitoring of research on MC and HIV prevention. It recommends that a mechanism be developed to translate recent findings about the protective effects of MMC into policies and programmes.

10.2 The National Health Act of 2003 (No. 61)

At a broad level, **the National Health Act, No. 61 (of 2003),** specifies that: *The Minister may, in the interests of the health and wellbeing of persons attending an initiation school and subject to the provisions of any other law, prescribe conditions under which the circumcision of a person as part of an initiation ceremony may be carried out.*

10.3 The Children's Act

The Children's Act (No. 38 of 2005), in section 12, on social, cultural and religious practices specifies that circumcision of male children under the age of **16** is prohibited, except when-

(a) circumcision is performed for religious purposes in accordance with the practices of the religion concerned and in the manner prescribed; or

(b) circumcision is performed for medical reasons on the recommendation of a medical practitioner.

Circumcision of male children older than **16** may only be performed –

(a) if the child has given consent to the circumcision in the prescribed manner;

(b) after proper counselling of the child; and

(c) in the manner prescribed.

Taking into consideration the child's age, maturity and stage of development, every male child has the right to refuse circumcision. Hence, it is illegal for circumcision to be performed on boys under 16 years without their written informed consent, even when the circumcision is done as a traditional rite, which suggests that parents cannot circumcise infants. Therefore, elective circumcision on neonates and children under 16 years could be prohibited. This Act also has specific consent forms *"Consent to Religious Circumcision*", and "*Consent to Medical Circumcision*". The 2005 Children's Act prohibits MC for males aged under 16 years except for medical or religious reasons, Hence, routine infant circumcision is a criminal act, unless performed for religious reasons [145]. Regarding **consent** to surgical operation/s**,** the **Children's Act (2005**) (section 129) states that:

A child may consent to the performance of a surgical operation on him or her or his or her child if: *(a) the child is over the age of 12 years; and*

(b) the child is of sufficient maturity and has the mental capacity to understand the benefits, risks, social and other implications of the surgical operation; and

(c) the child is duly assisted by his or her parent or guardian.

The South African Children's Act, No. 38 (2005) [167] prevents circumcision of minors without clear and immediate medical justification. Prophylactic justification is not the same as medical justification. [168] South Africa has also ratified a number of international treaties aimed at protecting children against harmful cultural practices such as the United Nations 3 Convention on the Rights of the Child (CRC), the African Charter on the Rights and Welfare of the Child.

10.4 HPCSA Guidelines

The HPCSA (2007) has guidelines on consent (but none on MC).

In cases where the child is of insufficient maturity or unable to understand, or the treatment is urgent/life threatening, other people may make this decision on behalf of the child, as follows:

The parent or guardian of a child may, subject to section 31, consent to a surgical operation on the child if the child is-

(a) Under the age of 12 years; or

(b) Over that age but is of insufficient maturity or is unable to understand the benefits, risks and social implications of the operation.

The superintendent of a hospital or the person in charge of the hospital in the absence of the superintendent may consent to the medical treatment or a surgical operation on a child if-

(a) The treatment or operation is necessary to preserve the life of the child or to save the child from serious or lasting physical injury or disability; and

(b) The need for the treatment or operation is so urgent that it cannot be deferred for the purpose of obtaining consent that would otherwise have been required.

The Minister may consent to the medical treatment of or surgical operation on a child if the parent or guardian of the child –

(a) Unreasonably refuses to give consent or to assist the child in giving consent;

(b) Is incapable of giving consent or of assisting the child in giving consent;

(c) Cannot readily be traced; or

(d) Is deceased

The Minister may consent to the medical treatment of or surgical operation on a child if the child unreasonably refuses to give consent. A High Court or children's court may consent to the medical treatment of or a surgical operation on a child in all instances where another person that may give consent in terms of this section refuses or is unable to give such consent

No parent, guardian or care-giver of a child may refuse to assist a child in terms of subsection (3) or withhold consent in terms of subsections (4) and (5) by reason only of religious or other beliefs, unless that parent or guardian can show that there is a medically accepted alternative choice to the medical treatment or surgical operation concerned.

10.5 Nursing Legislature

The Nursing Act of 2005, the Health Professions Act of 1978 and the South African Nursing Council (SANC) Scope of Practice does not refer to circumcision practices for nurses registered or enrolled under the Nursing Act of 1978 has no specifications regarding circumcision practices.

10.6 Provincial Laws

There are three **provincial laws** dealing with **traditional circumcision**, in the Eastern Cape, Northern Province, and the Free State (Northern Province Circumcision Schools Act of 1996 (Act No. 6).; Application of Health Standards in Traditional Circumcision (Eastern Cape) Act of 2001 (Act No. 6); Free State Initiation School Health Act of 2004 (Act No. 1). These laws cover the observation of health standards in traditional initiation schools, the granting of permission for the operation of circumcision schools and, generally, with the granting of permission to conduct circumcision"[133]. Eastern Cape legislation requires parental consent for boys below the

prescribed age, and that prospective initiates are examined by a medical doctor to ensure that they are "fit and healthy" to undergo circumcision and initiation into manhood [133]. Furthermore, this legislation requires traditional surgeons to get permission from designated health officers to perform circumcision on each child (i.e. a doctor should see the initiate prior to commencement of the procedure. In addition, surgeons should be certified for doing so, failing which they could face arrest [147]. The instrument and procedure used to perform the circumcision must be approved: An instrument used to perform a circumcision on one initiate must not be used again to perform a circumcision on another initiate, and the traditional surgeon must use clean instruments at all times before a circumcision, and shall use only substances prescribed by a medical officer for the sterilisation of instruments. Each traditional nurse must get permission to nurse each initiate in the circumcision school. Permission to hold a circumcision school must be obtained from a health officer and from the traditional leader, e.g. chief, and/or ward councillor; Designated health officers have a right to inspect every circumcision school, and to institute whatever remedial action is necessary if the health of the initiates is at risk. Penalties are stipulated for transgression of any aspect/clause of the act described above [133]. Traditional surgeons and nurses are now supposed to undergo training.

SANAC's Civil Society [6] has developed a position paper on MC as an HIV prevention strategy, which recognises that "MMC is not a stand-alone prevention and that the mainstay of HIV prevention must be on ensuring access to a comprehensive package of prevention services and interventions". In addition, they specify that "it *must be combined* with appropriate messaging and risk counselling to ensure that people who are circumcised understand the need to continue practicing safer sex". In addition, SANAC respects traditional circumcision practices and proposes that it be made safer. SANAC civil society makes the following recommendations:

Therefore, civil society believes that government, and the Department of Health in particular, should:

- *Recognise MC as a complementary strategy for HIV prevention.*
- *Introduce guidelines and a policy on MMC that takes into account the different approaches that may be necessary in different medical, cultural and religious settings.*
- *Take ownership of the strategy, and ensure that SANAC and the DOH pursue one strategy.*

- *Communicate widely and accurately to the South African public about the benefits and risks of MMC. This communication must be simple, accessible and translated into all official languages.*

- *Improve and promote male sexual health services and devise a visible campaign that encourages men to take responsibility for their sexual health.*

- *Ensure that messages about MC talk to women and girls as well as men and adolescent males. Women and girls should understand the benefits of MMC to men – for their own benefit and that of their children – and be aware that it does not protect them or do away with the need for consistent and correct condom use.*

- *Provide services that offer safe circumcision for men who choose to undergo circumcision in a health facility.*

- *Strengthen and continue a dialogue with traditional leaders and traditional healers on MC.*

- *Work with traditional and religious leaders to help them prevent the rise of fly-by-night practices and the proliferation of ill-experienced practitioners who would undermine their authority and bring hygienic and healthy traditional practices into disrepute.*

- *Meet with traditional and religious leaders to discuss the way forward on infant and early-adolescent circumcision and the implications this holds for initiation practices.*

11. Training of Doctors and Nurses on Male Circumcision

Enquiries at the eight medical schools in South Africa showed that undergraduate training for doctors at medical schools on performing MMC is usually ad hoc and under the auspices of surgical departments. Enquiries at nursing schools linked to universities found that there was no specific module on MMC in the curriculum of general nursing degrees. Nursing schools include MMC in modules on STIs and male genito-urinary system conditions, usually as part of the management of other conditions such as phimosis and paraphimosis. Management of complications arising from traditional circumcision is also covered, as is pre- and post-operative

care [155]. The Health Professions Council of South Africa (HPCSA) and South African Nursing Council (SANC) websites do not provide any details about MC training.

South Africa does not allow nurses to perform circumcision operation (although doctor can be assisted by nurses. One surgeon assisted by five nurses (task sharing) can perform between six and ten circumcisions per hour at a cost of about R340 per procedure so training nurses to carry out the surgery would mean more men could be circumcised [166]at a reduced cost and should be investigated .

12. Training of Traditional Healers in Male Circumcision

Information on training of traditional healers on MC in South Africa could only be found for the Eastern Cape. The Eastern Cape Province promulgated a law in 2001 specifying that traditional surgeons and nurses should undergo circumcision training. A training programme was developed, implemented and evaluated in this region in conjunction with the Eastern Cape Department of Health [157];[158],[133].

The content areas of the training include the following:

- Introduction into initiation rites
- The roles of parents, surgeons, nurses and traditional leaders
- Traditional Community Regulation
- Statutory regulation of Traditional MC and Initiation into Manhood
- Role of the Eastern Cape Department of Health as the monitoring body of initiation schools, and sanctions that could be applied against those who violate the rules
- Structure and Function of the male sex organs
- Procedure of safe circumcision, and infection control
- Signs and symptoms of sexually transmitted infections, including HIV/AIDS
- After-care of the initiate including wound management

- Detection and early management of common complications of circumcision
- Referral issues (e.g. when to refer an initiate to hospital/clinic including, dehydration or excessive bleeding)
- Nutrition and Fluid Management
- Code of conduct and ethics for Traditional Health Practitioners
- Sexual health education

In addition, traditional surgeons are provided with surgical blades and handles, latex hand gloves, sterilisation instruments, and paper towels during the training. Traditional nurses receive the same excluding the scalpels.

Peltzer et al (2008)[133] summarised four recommendations for training traditional surgeons and nurses: (1) Curriculum should have a careful design adapted for traditional surgeons and nurses; (2) Principles of adult education should be used; (3) Attention should be paid to critical areas of knowledge and attitude; (4) Training should be ongoing, with additional supportive trainings to promote cognitive, attitudinal and behavioural change.

13. Other Training of Health Care Providers

A manual for trainers entitled ***"MMC under Local Anaesthesia: Course notebook for trainers"*** has been developed by UNAIDS [161]. This manual outlines 3 methods of adult and adolescent circumcision, the forceps-guided method, the dorsal slit method and the sleeve method. The Forceps-Guided Method, which can be performed without assistance and is suitable for implementation in resource-limited settings has been used extensively in the Orange Farm, Soweto site and is recommended for scale-up of MMC in SA.

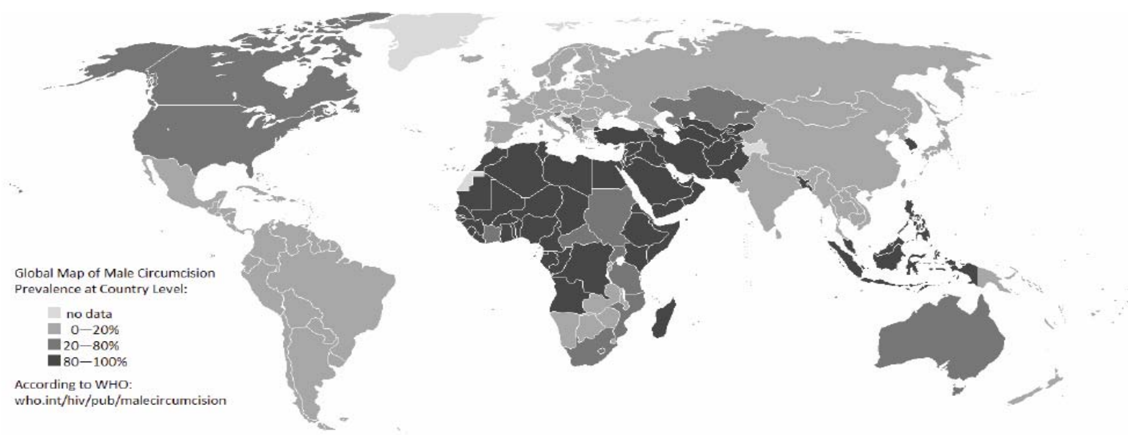
In order to implement MMC into public sector services in SA, in addition to training on the surgical procedure, other cadres of health provider such as counsellors and PHC nurses will require additional training in pre MMC screening and post MMC follow up.

14. Non-Government Male Circumcision Training for clients/service users

Marie Stopes International, a government- approved NGO that focuses on family planning and women's reproductive health services launched a pilot programme in Durban, KwaZulu-Natal in October, 2008 to bring men into clinics and provide them with HIV testing and counselling and MMC. Two community based educators (CBE's) at grass roots level teach the community about the benefits of MC, and thereby create demand for MMC. The CBE's visit schools, taxi ranks, police stations, supermarkets, and other public areas where they can engage men. The CBE's try to convince people to return to the clinic where they are offered reduced cost circumcisions. If this pilot is successful, with proper funding, it could be adopted and rolled out by 28 other Marie Stopes clinics across South Africa, as all have procedure rooms and nurses who can administer local anaesthetic [138].

Marie Stopes CBE's promote MMC through HIV education, community discussions, gender specific forums and discount vouchers on the procedure: 15,000 individuals received information and education on MMC, sexual health and reproduction.;5,000 MMC and sexual health educational pamphlets and materials were distributed; and 1,000 males given access free/discounted family planning services through a discounted voucher scheme [138].

15. Map of Male Circumcision prevalence



16. Groups opposing Male Circumcision

Although MC is a practical medical prevention effort that yields results to a point, it does little to address the root of the problem of HIV transmission. MC itself does nothing to address social systems and norms that so strongly affect this epidemic—Violence against Women, condom negotiation for women, and even meanings of masculinity (which affects both men and women).

It is difficult to define partial protection and it has the implication of non-use of male condoms. The point of increasing access to female condoms as well as cultural sensitivity is also critical to the promotion of MMC.

Groups opposing circumcision include women's groups (e.g. the debate on the list serve '60 percent'). If the benefits of MC for women are not articulated clearly, they will result in the further stigmatisation of women, and could result in funding being diverted from programmes benefiting women. Women's groups may oppose MC efforts unless they are included in policy development and programme implementation.

Other religious and traditional factions may also oppose the use of MC as an HIV prevention strategy, e.g. some Christian churches in South Africa oppose circumcision, viewing it as a pagan ritual [170] .

There is also opposition from groupings such as the South African branch of the human rights group 'National Organisation of Circumcision Information Resource Centers', NOCIRC of South Africa (NOCIRC-SA), which has issued a press release calling MC as an HIV prevention strategy dangerous and unethical. The group acts against MC for all groups of men – adult, adolescent, neonates and infants. The group highlights an extraordinarily high rate of complications, long term side effects, and the sexual disinhibition that circumcision induces, resulting in greater risk taking among circumcised men [116]. The group urges AIDS policy makers to halt MC rollout, calling the plan exorbitant, dangerous and unethical [169].

Other international groups such as the Child Rights Information Network (International Coalition for Genital Integrity) and Doctors Opposing Circumcision (International Group) who oppose MC for various reasons may exert their influence over Southern Africa.

17. Male Sexual and Reproductive Health Programmes

Although there is much literature calling for the need for male programmes to be put in place in South Africa, there is little in the policies/programmes that have specific guidelines for male sexual and reproductive health services. Male reproductive health services with or without circumcision services are largely absent in public sector health services in South Africa. Men do not use health facilities as often as women and often only seek help when it is too late. MMC is a rare opportunity to get men into the health care system. In South Africa MMC has to be placed within the context of male sexual and reproductive health. Men attending health facilities can be provided with combined circumcision/ behaviour change messages, as well as messages around HIV testing and counselling services, condom provision, STI screening and treatment, and links to reproductive health and other gender-related matters.

There are a number of information, education and communications materials produced around male sexual and reproductive health, e.g. counselling around sexual relations, staying healthy, means of contraception, and substance abuse (alcohol, drugs). Information, education, and communication need to be tailored to male audiences. Men respond to messages that promote positive role models, appeal to their economic interests, use personal testimonials, improve their self-image, and are funny. The messages can be delivered through interpersonal, community-based, and mass media approaches.

Male reproductive health services can be provided at primary health care facilities, maternal and child health/family planning clinics, male-only clinics, STD clinics, mobile units, and military hospitals. The link between bringing in men for MC and then linking them to other prevention services is well known.

18. Youth /Adolescent Programmes

Schools have the potential to reach large numbers of adolescents - the overwhelming majority of South African adolescents attend school; 97% of those aged 10 to 14 years and 83% of those aged 15 to 19 years attend school. This widespread access to schools stands in contrast to limited access to health facilities for many South Africa [171].

There has been considerable progress since 1994 in the provision of health services at schools. Approximately half of all provincial departments of health and education have developed policy documents regarding school health. In most provinces there is collaboration between Departments of Health and Education in developing programmes for school-aged young people. In almost all the provinces, school health programmes are currently being implemented in secondary schools. Such programmes include counselling, mental health interventions, feeding programmes, education regarding the environment and sexuality and life skills. Skills building does not appear to be a priority in sites such as health facilities, workplaces and the street. Out of school adolescents and youth, for example, are not potentially exposed to this strategy

The following needs have been identified:

- Establish/strengthen peer-counselling programmes for both in and out of school adolescents

- Provide training in sexuality counselling for adults who have contact with adolescents and youth, especially educators and health workers providing counselling to pregnant teenagers on parenting skills

- Improve availability of substance-related counselling services at key sites (e.g. schools, health facilities, prisons, streets).

Input on sexual and reproductive health in schools is erratic rather than systematic and does not cover important areas. At present, SRH education is at secondary school level. There is little or no primary level education that addresses pre-adolescent SRH questions and needs. Although there is some opposition to primary school children being taught sexual and reproductive health, very young people are engaging in sex, illustrating the need to start age appropriate

education at a younger age. In settings where SRH education has been addressed to younger children, there has been a delay in age of sexual debut, people have had fewer sex partners and more have used contraception [172].

The mass media (TV and radio) is an important tool in sexual reproductive health information dissemination and almost all young people have access to this form of communication [173].

Based on WHO recommendations (1996) schools must enable youth at all levels to learn critical health and life skills and must serve as an effective entry point for health promotion and prevention [174]. Although school-based life skills education is a key component of South Africa's HIV/AIDS prevention strategy, existing research indicates only marginal success of school programmes in influencing sexual risk-taking and health-seeking behaviours among youth [175].

Since August 2008, the University of Zambia has offered voluntary MMC since free of charge for students registered at the university [117]. This could be a model for implementation at South African universities although funding will have to be raised.

19. Standard Medical Male Circumcision Package

There is no standard MMC package in SA currently. The procedure is often conducted with minimal counselling and without HIV testing. Local anaesthetic is administered and pain killers are provided. A post procedure check-up is generally conducted within a week of the procedure.

It is recommended that the supply of MMC services be in the context of a core package that includes routine offering of HIV testing, counselling about HIV, counselling on the need to adopt or maintain safer sex practices following circumcision, and the need to abstain from sex for six weeks, provision of condoms, post-circumcision care, examination for STIs and treatment if necessary; and the procedure itself.

HIV testing should be recommended for all males seeking MMC, but should not be mandatory. Counselling should cover ensuring that both women and men are protected, the issues of risk and protection for both men and women. Counselling messages should emphasise partial protection, continued use of condoms, abstinence for recommended duration (6 weeks), and

the lack of conclusive evidence of any direct benefit for women. Partners of men undergoing MC should be included where possible i.e. couples counselling. Advancing respect for women and women's right should be an integral part of counselling and programmes on MC. In over-burdened health systems, this means allocating resources and training for staff, including existing counsellors, so that they can incorporate these additional messages effectively into their work.

20. Translation of Male Circumcision in Local Languages

Circumcision in Xhosa tradition is part of the "initiation sacrifices" category (one of the stages a person goes through in his/her life – a life cycle ritual). The term "*ukwaluka*" refers to the passage of boys from youth to manhood – it is a process which every boy must go through in his life. It appears that in this context, circumcision has positive connotations. The "*ukwaluka*" ritual involves three ritual performances: *ngcamisa, ojisa* and *buyisa/ukubuya*.

The *Ngcamisa* ritual is performed one day before a youth undergoes circumcision. *Ngcamisa* is derived from *ukucamagusha* (to implore blessings from the ancestors). *Ukubuya* (to return) marks the end of the initiation period. Its emphasis is on admonishing and advising "newly created men" on what it means to be a man, as well as celebrating their development into adulthood [178]. Thus, the translation of MC in Xhosa appears positive as it is part of their cultural rite of passage and thus, something to be celebrated rather than shunned.

Opinions are divided on the way in which culturally sensitive topics should be translated. There are two conflicting views, one which priorities cultural sensitivity when translating controversial concepts, and the other which prioritises the message [146].

In South Africa, HIV/AIDS materials are translated from English into the other official languages. The conduct of AIDS education campaigns is a more controversial and sensitive issue in Sepedi than in English. For instance, certain terms that are perceived to be taboo in Sepedi, are often regarded as humorous in English. In Sepedi, sex related discourse is condemned as unethical, illegal or at least immoral.

Figurative translation (there are terms preferred in the idiomatic translation method in an

attempt to deal with sexual taboos. These terms are euphemistically or figuratively translated to minimise the degree of their sensitivity to the audience). In Sepedi, circumcision is figuratively translated as: *Go bolotša/ Go wela.*

The literal translation (which reflects alternative of the figurative term as a direct and literal translation – it does not take into consideration the established societal norms but rather endeavours to make communication as clear as possible to the target audience). In Sepedi this is: *Go tloša letlalo la ka pele la mapele a lesogana* (cutting off of the foreskin of the penis).

Thus, it appears that euphemism is a feature of those cultures where a direct/literal translation of a sensitive topic such as circumcision is a direct contradiction to sensitive/taboo topics in the culture.

CONCLUSIONS

MMC is one of the most effective interventions we have for preventing HIV. MMC services must be integrated with existing HIV prevention and treatment interventions. There are reports that demand for safe, affordable MMC is already increasing in Southern Africa [154]. Urgent consideration must be given to the need to provide increased access to safe, affordable MC services on a large scale, embedded within a comprehensive package of proven HIV prevention measures.

Not unsurprisingly, this systematic review has failed to find large quantities of high quality evidence on existing medical MC services and their implementation in South Africa. The implementation of MMC has to be handled in a very 'balanced' way with very clear messaging and extensive consultation and counselling.

With the implementation of a large scale MMC programme in SA, funding will be required to ensure that support for other HIV prevention strategies are increased to counteract shifts in power balances. New and sustained allocation of resources for male and female condoms from existing and potential funders; responsibility is on government and other donors to

counterbalance MC funding with funds to ensure that other prevention strategies and primary health care activities are not weakened as MC rolls out, and that the programmes are introduced in the context of funded efforts that integrate MC into existing services and strengthen health systems more broadly. MC programmes must effectively link HIV positive men and women with HIV treatment and care and services. Scaling up MMC must include public information or mass media programmes, and/or school-based programmes.

RECOMMENDATIONS

The following recommendations from this review should be taken into consideration in expanding, promoting and integrating MC into existing health services:

- Future expansion of circumcision services must be embedded within comprehensive HIV prevention programming, including informed consent, confidentiality, a stigma free environment, HIV counselling and testing and risk-reduction counselling.

- MC programmes should be designed to increase uptake of HCT and partner disclosure, as well as counselling to minimise MC in HIV positive men; priority should be placed on pairing MC roll-out with successful/innovative approaches (such as home-based testing, integration of HCT with family planning clinics, male-oriented services).

- A plan for introduction of voluntary neonatal MC services within the provisions of the Children's Act of 2005 and integration of neonatal MC into existing maternal, women, neonatal and child health programmes must be drawn up.

- MC must be delivered as part of a recommended minimum package which includes counselling about risks and benefits of MC, counselling around risk reduction, HIV counselling and testing, couple counselling, condom promotion and provision, and STI management.

- A plan for reciprocal linking of traditional and medical MC is required. MC in traditional settings should include standards for infection control, pain management, and counselling on HIV prevention, sexual and reproductive health and rights of women and mechanisms to train traditional MC providers are urgently required. In addition, messaging around reduction of stigma and discrimination for males who opt for circumcision in clinical settings and before the age of traditional initiation is necessary.

- A forum be set up to ensure structured coordination and communication of activities and resources of donors and other stakeholders including policymakers, technical teams, private and public sector health providers.

- A culturally sensitive communications strategy for promoting acceptability and access to both adult and neonatal MMC and targeting both men and women for dissemination of consistent and correct packaging of messages around MC is critical.

- In order to address human resource challenges; service integration, task sharing, standardisation of methods and equipment, large scale training of health workers and integration of private health providers must be undertaken.

- The absence of existing mechanisms to monitor and evaluate the impact of the proposed national MC policy such as indicators for monitoring and evaluation, and quality assurance standards must be urgently addressed.

- Consideration should be given to the expansion of dedicated sexual and reproductive health services in SA, targeted at young men through schools and health facilities which could include MC as well as counselling on sexual health, substance abuse etc.

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TABLES

Table 1: Breakdown of articles reviewed

Number of articles	Key Theme
21	Scientific evidence for circumcision
4	Opposing views against circumcision from within Government
6	Cost of MMC programmes
38	Traditional circumcision & human rights
5	Circumcision & culture
4	Gender & circumcision
13	Masculinity & circumcision
2	Circumcision & sexuality
1	Circumcision & psychological trauma
11	MC in SADC countries
1	Organisations providing MMC

Table 2: Summaries of MC study results for SA

STUDY TITLE	DESCRIPTION	CONCLUSIONS
Factors associated with HIV sero-positivity in young, rural South African men.	Jewkes et al. (2006)[123]. Rural Eastern Cape province; ethnically homogeneous group (Xhosa). 1277 men between 15-26 years interviewed	Logistical regression model shows risk of HIV reduced for men who are circumcised. Large PAF score (27.6%) for non-circumcised suggests circumcision important protective factor in this age group.
The acceptability of MC as an HIV intervention among a rural Zulu population, KZN, South Africa.	Scott et al. (2005)[123]. Rural Zulu – Hlabisa and Mtubatuba 100 men and 44 women 2 male focus groups: ascertain circumcision preferences Four in-depth interviews: feasibility of promoting MMC	13% circumcised 87% uncircumcised 51% men willing to be circumcised Main predictors: sexual pleasure, pain, STI acquisition Barrier to circumcision: Fear

		and death Low condom up-take
Acceptability of MC as a tool for preventing HIV infection in a highly infected community in South Africa.	Lagarde et al. (2003)[125]. 482 men aged 19-29 yrs (143 circumcised), 302 women aged 14-25 yrs Westonaria, South Africa Mainly Sotho, Tswana and Xhosa	30.8% circumcised (24-29yrs) Most (64.8%) in initiation schools Variations by ethnic group involved number of circumcisions in traditional settings (see Table 2) 50.8% willing to be circumcised in future 72.5% willing if protective against HIV/STD
Demographic and Health Survey.	South Africa (2003)[126].	45% men circumcised Highest circumcision prevalence among men over 30 years (53%).
The potential impact of MC on HIV in sub-Saharan Africa.	Williams et al. (2006)[127]. Based on Orange Farm study – estimates impact of increasing MC coverage on HIV incidence, prevalence and related deaths over next 30 years.	Reduction in incidence = 0.71% per year where MC = 35% and HIV prevalence = 24.6%
MC for HIV prevention: from evidence to action?	Weiss et al. (2008)[128]. Estimations based on RCT research.	South Africa trial showed an increase in number of sex acts for those newly circumcised. Greatest efficacy among men at higher risk – 70% risk reduction (Uganda)
Estimating the resources needed and savings anticipated from roll-out of MMC in Sub-Saharan Africa.	Auvert et al. (2008)[120]. →Useful background information in terms of circumcision rate but more useful for question 10 (see below)	Uncircumcised adults = 26.1% Adult prevalence of HIV = 24.6%

Table 3: Percentage of men circumcised and HIV positive [123]

Age	n	% Circumcised	% HIV +
15-17	231	29.40	0.87
18-19	541	43.80	1.12
20-21	367	71.70	2.49
22-26	148	90.50	6.16
TOTAL	**1,287**	**54.50**	**2.04**

Table 4: Variations in circumcision setting by ethnic group [125]

	Sotho	Tswana	Xhosa	Other
Proportion not circumcised	73.9	87.1	67.3	74.1
Proportion circumcised in clinical settings	7.2	7.0	6.7	12.3
Proportion circumcised in traditional settings	18.9	5.9	26.0	13.6

Table 5: Estimated Trend for the Rate of Male Circumcision

Trend for clinical MMC	Reasons
1. With major roll-out of MC it could have drastic effect on HIV infection and mortality rates:	According to Williams et al. (2006)[127]: In South Africa, **2.4 million** new HIV infections and **2 million** deaths could potentially be averted with roll-out of MC in the country over the next **30 years.** This is a **50% reduction** in incident cases, and a **36% reduction** in mortality in South Africa. 35% prevalence MC in SA, 24.6% prevalence of HIV → reduction in incidence per year = 0.71% therefore **174,000** new infections averted with MC roll-out.
2. INCREASING	According to Lagarde et al. (2003)[125] – if protective effect of MC in HIV transmission is demonstrated - 72.5% of non-circumcised men would like to be circumcised with overall rate of **78%**. Not clear whether this is in clinical or traditional setting – but study showed that acceptability will increase even though adverse effects of MC well known.
3. To achieve maximum MC prevalence over next 5 years:	Auvert et al. (2008)[120]: will need **10 circumcisions** performed each day by **2282 circumcisers** in a 230 working day year. Achieve saturation at 85%. Based on assumption from other acceptability studies that a high fraction of men will accept circumcision – especially if shown to be preventative against HIV/AIDS and other STI's.
4. Will DECREASE if:	According to Gray et al. (2003)[129], using stochastic simulation models – showed that if newly circumcised men were to increase the number of **sexual partners** by an average of **more than 25%**, this would **offset any beneficial effect** of circumcision- even assuming **efficacy of 60% -** possibly due to false sense of security (Gray et al. 2007)[130] This study done in Uganda so may not be generalisable to South Africa where literature differs: Lagarde et al. (2003)[125] report strong association between **no. of lifetime partners** and circumcision status whereas Weiss et al (2008)[128] report **increase in sexual action** but not

	increase in sexual partners.
5. REMAINING THE SAME/potential increase (depending on contextual factors)	Scott et al. (2005)[7]: 51% of uncircumcised participants willing to be circumcised if procedure conducted **safely** and with **little pain** at **low cost.** Higher % circumcised in urban areas where men are employed and have a higher education level. Westercamp & Bailey (2007)[131] showed that urbanization, ethnic mixing and exposure to other cultures and religious are conducive to higher acceptability of circumcision in traditionally non-circumcising ethnic groups. Scott et al. (2005)[124] also reported that individual interviews showed culture to be a greater barrier against circumcision than originally noted – but fear, pain and death were the primary barriers against being circumcised. Lagarde et al. (2003)[125] showed that variations in circumcision rate by ethnic group involved mainly number of circumcisions done in the traditional setting, with **clinical setting remaining relatively constant.** Only **28.7%** reported being circumcised in clinical settings – but if intensive roll-out this number could increase – especially if look at Scott et al. (2005)[124]. The study also showed that adverse effects associated with traditional circumcision far outweighed those associated with clinical circumcision thus, it seems that clinical circumcision is associated with much less risk (25% reported adverse outcomes as opposed to 47.6% in traditional). Therefore acceptability of circumcision may increase if clinical settings are expanded/improved – less chance of adverse outcomes/safer setting.
6. Possibility for increase in SA for the majority of citizens will not be affected for religious reasons (and possibly cultural	In the Lagarde et al. (2003)[125] study, 38% of circumcised and 31.6% of non-circumcised participants said that circumcision is forbidden by religion.

too)	UNAIDS (2007)[132] shows that of the 98.5% of South Africans not circumcised for religious reasons (ie. Not Muslim or Jewish), 35% are circumcised already – therefore potential for circumcision to expand to other populations that don't circumcise. UNAIDS (2007)[132] showed that the determinants of MC in traditionally circumcising populations such as cultural identity **did not** appear to be major barriers to circumcision in non-circumcising communities.
7. Increase	Peltzer et al. (2008)[133] reported that 72% of men were satisfied with their appearance after circumcision. Scott et al. (2005)[124] showed an important association with circumcision and sexual pleasure. They also reported that men who did not have particular beliefs regarding health/sexual aspects of circumcision were least likely to be willing to be circumcised. These findings could potentially result in an increase in desire to be circumcised (and potentially even more so if complications are lessened) therefore need to improve services to decrease healing time and therefore risk.
8. Increase	Weiss et al. (2008)[128] reported that from thirteen acceptability studies from nine countries in sub-Saharan Africa, 62% of uncircumcised men wished to become circumcised, 64.5% of women favoured circumcision for their partners, and 70% of men and women would circumcised their sons.
	Predictions for MC effects in Soweto suggested by Mesesan et al. (2006)[134] shows the effect of MC on HIV infections over the next 20 years. 4% reduction in HIV prevalence and 53000 infections prevented (with increase in MC by 20%) but shows if there is a 30% increase in risk behaviour this will drop to 2% and 18000 respectively.

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