

## Editorial review: Male circumcision, gender and HIV prevention in sub-Saharan Africa: a (social science) research agenda



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Sub-Saharan Africa is the part of the world which is the most affected by the HIV and AIDS pandemic, with 24.5 million people infected by the virus that causes AIDS. Adult HIV prevalence in southern Africa is estimated at 16%, at 6% in East Africa and at 4.5% in West and Central Africa (UNAIDS, 2006).

Ecological studies in sub-Saharan Africa have suggested a geographical association between areas of higher prevalence of HIV and lower prevalence of male circumcision (MC) (Drain, Halperin, Hughes, Klausner & Bailey, 2006). An initial short-term randomised controlled study on male circumcision led by the Agence nationale de recherche sur le sida (ANRS) at Orange Farm in South Africa revealed a reduction of 60%-75% in the risk of female to male transmission of HIV-1 in circumcised men (Auvert *et al.*, 2005). These studies, which were supported by the National Institutes of Health (NIH), were conducted in Kisumu in Kenya (Bailey *et al.*, 2007) and in Rakai in Uganda (Gray *et al.*, 2007). They demonstrated a risk reduction of around 58% and 53% respectively. On the 28th of March 2007 based on these studies, the WHO and UNAIDS issued a statement endorsing male circumcision (MC) as an additional strategy in HIV prevention, particularly in high HIV prevalence and low male circumcision countries (WHO/UNAIDS, 2007).

Ecological studies have shown that where male circumcision rates are low (less than 20%) HIV prevalence is above 10%, while where male circumcision is high (above 80%), HIV prevalence is under 10% (Halperin & Bailey, 1999). The transmission of HIV infection depends on various factors, and a multifactorial approach needs to be taken to interpret HIV prevalence and its association with male circumcision. Cultural and religious factors have

an important role to play in terms of their impact on behaviour (Dixneuf & Poncier, 2007).

Male circumcision is common in most of West Africa. In many countries, the procedure is considered to be almost universal among the adult population. However, male circumcision seems not to be traditionally practised in some areas such as central-eastern Cote d'Ivoire, central Ghana, and southwest Burkina Faso (28% among the Lobi in southwest Burkina Faso; while the national prevalence is 90%). Many countries in Central and Eastern Africa have at least 50% male circumcision among their adult population: the prevalence varies from approximately 2 and 5% in Burundi and Rwanda to 70% in Tanzania, 84% in Kenya and 93% in Somalia. In southern Africa, the MC prevalence is the lowest: around 15% in several countries (Namibia, Swaziland, Zambia, Zimbabwe) although higher in others (Malawi 21%, Botswana 25%, South Africa 35%, Lesotho 48%, Mozambique 60%, Angola 66% and Madagascar 80%). The cultural history of male circumcision varies: in many countries it is described as a very ancient practice. In some areas, it has been abandoned after centuries of practices. Historians believe in Botswana, southern Zimbabwe and parts of South Africa and Malawi, circumcision was stopped by European missionaries and colonial administrators. In Zululand and Swaziland male circumcision was abandoned during wars in the early 19th century, presumably because of the difficulty of holding the circumcision schools during the continual fighting (UNAIDS, 2007a).

African countries given priority to scale up MC include those with an HIV prevalence of above 5% and a MC prevalence of less than 80%. Such countries include in East and Central Africa: Central African Republic, the Congo, Kenya (Nyanza Province),

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Uganda and Tanzania, and in Southern Africa: Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia, and Zimbabwe (see Table 1).

### Theoretical framework

The complexity of the issues around male circumcision in Africa is often obscured by the question of the frequency of male circumcision and of its association with HIV. There are very few attempts to understand the conceptual and philosophical aspects and the broader social and cultural dynamics involved. Thus strictly biomedical approaches may encounter problems of acceptability and of sustainability in local cultures. It could also lead to the misconception of MC as a sort of a “magic bullet” against HIV, which could have an adverse effect on other preventive methods.

Male circumcision in most of Africa is a holistic concept with multiple and interconnected dimensions – religious, spiritual, social, biomedical, aesthetic and cultural. The traditional male rite precedes marriage, typically entails physical brutality, seclusion, testing, esoteric knowledge, death and rebirth imagery, name changes, dance, masked costumes, and dietary and sexual taboos. The rite fuses Islam with local traditions,

mediates intergroup relations, and integrates the sociocultural system (Silverman, 2004).

Thus, in order to be successful, the promotion of male circumcision (as HIV prevention) should certainly leave the narrow realm of biomedical paradigms to be integrated into global, socio-cultural approaches. In many ethnic groups in Africa, male circumcision means the removal of the whole foreskin of the penis. But in some other groups (in southern Africa as well as in West Africa), male circumcision refers to any ritual operation on the foreskin. Thus, for example, the Balante or Balanta Brassa people in Guinea Bissau make a distinction between “small circumcision” (*Foo ntiula*) and “large circumcision” (*Foo or Fanadoo Garandi*). Large circumcision is the removal of the whole foreskin, whereas small circumcision is an incision made on the foreskin. It takes place when the man is 18-20 years of age. Small circumcision is a “would-be” circumcision and is considered as a kind of preparation for the large circumcision, which occurs at age 30 to 40, and with which it shares the same ontological meaning. The small circumcision socially allows sexual relations only with a woman who has already had sexual relations only with a circumcised man. The understanding of local taxonomies of

TABLE 1: MC PREVALENCE (HALPERIN & BAILEY, 1999; MEASURE DHS, 2006; WILLIAMS ET AL., 2006) AND HIV PREVALENCE (UNAIDS, 2006), IN PERCENT

West Africa			East & Central Africa			Southern Africa		
Country	MC	HIV	Country	MC	HIV	Country	MC	HIV
Benin	84	1.8	Burundi	2	3.3	Botswana	25	24.1
Burkina Faso	89	2.0	Rwanda	9	3.1	Malawi	21	14.1
Cameroon	93	5.4	Central African Republic	67	10.7	Namibia	15	19.6
Côte d'Ivoire	93	7.1	Chad	64	3.5	Swaziland	<15	33.4
Equatorial Guinea	86	3.2	Ethiopia	76	?	Zambia	16	17.0
Gabon	93	7.9	Sudan	47	?	Zimbabwe	10	20.1
The Gambia	90	2.4	Tanzania	70	6.5	Lesotho	48	23.2
Ghana	95	2.3	Uganda	25	6.7	Mozambique	56	16.1
Guinea	83	1.5	The Congo	70	5.3	South Africa	35	18.8
Guinea-Bissau	91	3.8	Dem. Rep. Congo	70	3.2	Angola	66	3.7
Liberia	70	?	Djibouti	94	3.1	Comoros	>80	<.01
Mali	95	1.7	Eritrea	95	2.4	Madagascar	80	0.5
Mauritania	78	0.7	Kenya	84	6.1	Mauritius	>80	0.6
Niger	92	1.1	Somalia	93	0.9			
Nigeria	81	3.9						
Senegal	89	0.9						
Sierra Leone	90	1.6						
Togo	93	3.2						

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“circumcision” and operations around the penis seems to be crucial to tailoring promotion of the removal of the whole foreskin (Niang & Boiro, 2007).

Due to the importance of symbolism and of codification for body modifications, it seems important to avoid reducing the study of MC to quantitative approaches. Thus it appears important to integrate an hermeneutic approach, which could give voice to local people and help social scientists to analyse how male circumcision is conceptualised in connection with their own philosophical systems, social dynamics, gender relations and symbolic modes of learning and transmitting knowledge.

Male circumcision offers the opportunity to re-engage with religious and ethnic groups in HIV prevention. Because such practices carry major religious, social and cultural meaning for many of these groups, some of whom have not always been comfortable with HIV prevention, male circumcision as an HIV prevention strategy could provide new avenues for dialogue. Many groups with diverse social histories that practice male circumcision for religious and ethnic reasons exist worldwide. In mapping the context of existing practices and strategies for potential interventions, local religious institutions and leaders should be consulted and should occupy central roles in advocating for HIV prevention (Niang, 2006).

### Age and type of circumcision varies by country and ethnicity

There is considerable variation in the age at which circumcision takes place, which may have effects on HIV prevalence. Neonatal circumcision is common in West Africa, but is uncommon in East and southern Africa, where median age at circumcision varies from boyhood to the late teens or twenties. In several countries, prevalence of non-religious circumcision has undergone rapid increases and decreases, reflecting cultural mixing and changing perceptions of health and sexual benefits. Connolly, Simbayi, Shammugam and Nqeketo (in press) found in a national survey in South Africa that of 1067 men 15 years and older who had been circumcised, the majority (57.2%) had been circumcised traditionally and 42.8% medically. The vast majority of Whites (97.8%), Indians (92.8%) and Coloureds (87.4%) were circumcised medically, compared to only 21.8% of black Africans.

Neonatal circumcision is common in Ghana and Nigeria, where 83.9% of circumcisions are done in the neonatal period (Okeke, Asinobi & Ikuerowo, 2006), but in other countries median age at circumcision varies from boyhood (median age 5–7 years) in Burkina Faso, age 7–10 in Zambia, age 8–16 in Kenya, to the late teens or twenties, for example in parts of the United Republic of Tanzania and South Africa. Age at circumcision can also vary considerably within a country. For example in Burkina Faso, families of higher socio-economic status and education level, or living in urban areas, are more likely to circumcise their sons at a young age (UNAIDS, 2007a). In South Africa the median age of circumcision for black Africans is 18 years compared to 10 years for Coloureds, 2 years for Whites and 1 year for Indians (Connolly *et al.*, in press).

Among the Balante in Bissau Guinea, circumcision ceremonies are carried out by groups of villages every four to six years. But sometimes, villages can wait up to 16 years to organise a circumcision ceremony. In some areas in southern Senegal, the ceremony takes place every 30 years. In Balante society, male circumcision is at a late stage in life, the average age being around 40. Changes seem to take place concerning age and location of the procedure. For the Mandinga, Wolof, Sérér, the age at male circumcision is considered to have dropped from 20 years old to between 6 and 13 years. In the larger cities of Senegal, male circumcision is more and more often practised only by the family and more frequently performed in medical centres. Huge community circumcision ceremonies are tending to disappear. But the traditional system is still strong in the rural areas (Niang, 2006).

### Safety of MC

#### *Methods of male circumcision in non-clinical settings*

Male circumcision for religious or traditional reasons frequently takes place in a non-clinical setting, although in some cultures an increasing proportion now takes place in clinics (Bailey & Egesah, 2006; Doyle, 2005). The usual procedure, of which almost all ritual circumcisions are variants, involves pulling the foreskin forward and cutting through the prepuce above the level of the glans, sometimes using a shield to protect the glans. Among the Xhosa of South Africa, circumcision is carried out using a razor blade or penknife (Doyle, 2005), without anaesthesia (Mayatula & Mavundla, 1997). The wound is covered with

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eucalyptus leaves (Doyle, 2005) or often maize leaves (Naudé, 2002), and left in place for four weeks while the boys are in seclusion. Traditional circumcision can also be more painful than clinical circumcision, as use of anaesthetics is rare (Ozdemir, 1997), probably due to the perceptions of circumcision as a marker of bravery and endurance (Doyle, 2005).

### *Adverse events associated with male circumcision in non-clinical settings in Africa*

Accounts of serious complications or adverse events after infant, adolescent and adult circumcision in traditional settings in Africa are legion. There are reports listing adverse events from traditional circumcision generated from hospital records (e.g., Ahmed, Mbibi, Dawam & Kalayi, 1999; Mayatula & Mavundla, 1997; Mogotlane, Ntlangulela & Ogunbano, 2004); while the Eastern Cape provincial Department of Health in South Africa recorded 2262 hospital admissions, 115 deaths and 208 genital amputations for circumcisions between 2001 and 2006 (Meissner & Buso, 2007). Among the Babukusu ethnic group in western Kenya a more detailed examination of 298 adolescent boys at 45-96 days post-operation showed that traditional circumcision was associated with slower healing, more swelling, laceration and keloid scarring (Bailey & Egesah, 2006). Peltzer, Nqeketo, Petros and Kanta (submitted) found high rates of complications for 192 initiates physically examined by a trained clinical nurse at the 14th day after traditional circumcision: 20.8% had mild delayed wound healing, 16.2% had a mild wound infection, and 10.4% had insufficient skin removed.

### *Safety of male circumcision in clinical or medical setting*

In a review of 14 studies on MC acceptability in sub-Saharan Africa, Westercamp and Bailey (2007) have shown high acceptability for MC ranging from 60-80%. The highest acceptability of 80% was in mothers for their sons. Most people interviewed preferred to be circumcised at a low cost in a hospital by a trained medical person (ibid.). The adverse events report in the three randomised control trials was under 2%, in about 10,000 young men who were circumcised. The adverse events were all mild and reversible. In a non research setting, where over 1600 male circumcisions had been done, a similar adverse events rate of 2.5% was reported (Bowa & Lukobo, 2006).

### **Gender and sexuality**

One missing link in studies around the potential use of MC for HIV prevention seems to be the consideration of women and gender issues. Because of the feminisation of HIV in Africa, research on the status and social interactions of women in the process of male circumcision could be particularly useful. Gender has been identified as a key crosscutting issue in addressing the HIV and AIDS epidemic in sub-Saharan Africa. Thus, a gender analysis provides a transversal approach for the understanding of HIV and AIDS determinants as well as for development of responses. The definition of gender refers to social and cultural constructions that structure social relationships between and among men and women. The analysis of gender relations has brought to the fore the fundamental issue of power and decision making. In some traditional settings, women and mothers play important roles in the decision making process concerning MC and in the fabric of preparation and post operation processes. But prevailing studies do not seem to have included investigation of the role of women in decision making processes related to male circumcision; and neither have the effects of male circumcision on women and gender been studied. Scott, Weiss and Viljoen (2005) suggested that in South Africa women are likely to have only an indirect influence, through the male perception that women enjoy sex more with circumcised men. A different study from South Africa found that women had a strong influence on men's decision to circumcise, often scheduling the appointment for their boyfriends or husbands (Rain-Taljaard *et al.*, 2003). Thirteen percent of circumcised participants in another South African study (Lagarde *et al.*, 2003) reported undergoing circumcision because their partner expressly requested it.

Although randomised trials conducted in South Africa, Uganda and Kenya may suggest that an increased sexual risk behaviour may not occur, promotion of MC could have the undesired effect of encouraging practices of female genital mutilation, which could be based on the same ontological principles. Thus, analysing both male and female circumcision could help to foresee possible adverse effects (Niang, 2006; WHO/UNAIDS, 2007).

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### Body and stigma

Analysis of male circumcision cannot avoid consideration of cultural constructions of the penis and of the body, and the issue of how these are linked to constructions of masculinity and womanhood, which in turn raises issues of gender constructions. From a cultural analysis perspective, the body functions as a fundamental metaphor, an important surface on which the marks of social status, family position, tribal affiliation, age, gender and religious condition may be displayed or hidden. Rites of passage are often indicated by ritual and social transformation of the body. For many social scientists the body forms an implicit foundation of stigma. The symbolic significance of the body plays an important role in social interaction.

Discrimination and stigmatising practices (such as sexual and marriage taboo) have been documented in relation to non-circumcision in several parts of Africa. Such practices may extend to entire ethnic groups who do not traditionally practice circumcision. Interventions on the body, if not well constructed, can lead to perverse effects of stigma, in particular upon groups and social categories already stigmatised such as commercial sex workers and men who have sex with men (Niang, 2006).

### Building synergies between traditional and clinic settings

In many African regions, most circumcisions are done by traditional circumcisers. In Lesotho, for instance, traditional circumcisers perform about 8000 circumcisions a year, substantially outnumbering those done by the health-care system, which already has a shortage of physicians. Yet current WHO and UNAIDS guidelines emphasise male circumcision as a clinical practice within health delivery settings. We are now provided with the opportunity to re-assess this approach; this bias toward an already overwhelmed health system runs the risk of retarding scale-up of male circumcision and unnecessarily confining its benefits to those who have access to health care (Sawires *et al.*, 2006).

Studies also failed to investigate possibilities of synergy between traditional systems and clinic-based systems, in particular between the holistic nature of meaning and of the preparation for circumcision in many African traditional settings (with attention given to community

mobilisation, to the emotional, educational, social and philosophical aspects, and to relations with women) and the biomedical performances achieved in clinical settings (Grant *et al.*, 2004).

Constructing synergies could perhaps suggest improvements in technical procedures used in traditional settings. It could also lead to reflection on how the process of social control on the part of communities can take place. Systems of post-operative follow-up and of traditional initiation have been so little studied that they risk being in conflict with clinical approaches. Few studies pointed out lessons to be learned regarding traditional concepts surrounding cultural and social aspects of the circumcision after the operation: in many parts of Africa, male circumcision is perceived as the source of new social relations. Men who were circumcised in the same group are considered to be bound by undying closeness, even stronger than that with a parent. In some ethnic groups in Senegal, extramarital sex with the wives of men who were circumcised together is forbidden as a sexual taboo (Niang, 2006).

The post operative period is often constructed as a critical period for the transmission of (esoteric) knowledge and the codes needed to interpret the symbols and signs that constitute the messages they will be given. The initiates learn how to interpret the hidden meaning of words which, if analysed literally, may seem incoherent. The period of initiation also includes coded sexual education. Sexual reserve and control are stressed. The young circumcised men are told that they must avoid sexual relations for some time, otherwise their foreskins will grow back again, and they will have to undergo a new, even more painful circumcision (Niang & Boiro, 2007).

### Legal contextual factors

MC raises numerous human rights issues which relate to research as well as interventions and policies. In July 2006, President Thabo Mbeki of South Africa signed into law the Children's Act which contains a clause that no male under the age of 16 may be circumcised except when, "performed for religious purposes in accordance with the practices of the religion concerned", or "for medical reasons on the recommendation of a medical practitioner". Three of nine provinces in South Africa have enacted legislation, which pertains to the issue of circumcision. The

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relevant pieces of legislation are (1) Northern Province Circumcision Schools Act No. 6 of 1996; (2) Application of Health Standards in Traditional Circumcision Act No. 6 of 2001 (Eastern Cape), and (3) the Free State Initiation School Health Act No. 1 of 2004. These laws deal with 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. Parental consent is also provided for if the boy is below a prescribed age. Further, each prospective initiate must be examined by a medical doctor to ensure that he is “fit and healthy” to undergo circumcision and initiation into manhood (Province of the Eastern Cape, 2001).

The Government of Botswana also recently mandated that all mothers of newborn boys should be counselled on the potential health benefits of circumcision (Wilson & De Beyer, 2006). These two examples appear to reflect divergent views, with the South African law appearing to limit, and the Botswana law appearing to encourage informed access to MC. In those countries considering the introduction or expansion of male circumcision services, it is recommended that law, regulation and policy be developed to ensure that male circumcision services are accessible, acceptable, and provided safely and without discrimination. The development of such laws, regulations and policies requires the engagement of parliament; legal, health and regulatory authorities; and communities where male circumcision services will be implemented (UNAIDS, 2007b).

### We are advocating the following research agenda:

- To assess the situation of MC in various countries in Africa, its meanings and social and cultural factors associated with MC
- To analyse types of MC (in relation to age, type of procedures, traditional or clinical mode) in association with HIV/AIDS risk
- To analyse involvement of women and gender roles in MC decision making processes, as well as acceptability among women and marginalised groups such as commercial sex workers and men who have sex with men
- To analyse social effects and ways to mitigate/avoid adverse effects of MC
- Develop models for scaling up (including of

synergies between traditional and modern settings and including legal, structural responses)

- To determine when keratinisation occurs and when the protective effect of MC commences; and to determine easier and quicker MC techniques

**Research areas** (AIDS Vaccine Advocacy Coalition, 2007; Dam & Anastasi, 2000; UNAIDS, 2005; UNAIDS/CAPRISA, 2007)

### 1) Review prevalence of male circumcision by country (and region, province, ethnicity) with age of circumcision and cultural regions

Analyse HIV prevalence, MC prevalence and its associated factors (age, region, province, ethnicity, religion, socioeconomic status, level of education). Better data on the prevalence of MC (both medical and ritual) in Africa and on the age at circumcision, preferably at the sub-national level, are needed. Data are also needed on current circumcision practices, especially with regard to safety.

### 2) Assess perceptions and understanding of MC among both men and women (including CSW and MSM). Conduct descriptive behavioural studies in areas where MC is currently being done on adolescents and adult males, comparing pre-and post-circumcision sexual risk behaviours to estimate the net behavioural effect of MC. Acceptability studies of MC interventions amongst community leaders, religious leaders, government officials. Evaluate government education campaigns promoting male circumcision.

At present, little is known about how male circumcision affects or changes men's sexual identities and sexual experience at the individual level, and/or how these factors play into individual decisions to seek circumcision. Gathering this information is critical, as it will help inform communications campaigns that address assumptions, beliefs and desires underlying uptake of male circumcision. These issues will differ by community, sexual orientation, economic status and many other factors, and therefore must be addressed in multiple, localised projects. Education campaigns that explain interventions are nearly non-existent. The communication of concepts such as “partly effective” or “protection derived from combining interventions

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with condoms” needs social scientists working together with communities to help grasp the nature of risk and protection (Ayodo, 2007).

Communication approaches should occur at the national level, such as media campaigns that encourage safe male circumcision as part of a comprehensive approach to prevention, as well as local and inter-personal communication strategies. Information about safety, quality, and the need for a combination approach to male circumcision interventions is critical, especially for countries engaging in service delivery activities.

Studies are needed to determine whether there are modifications in perceptions and HIV risk behaviour over the longer term in men who are circumcised for HIV prevention and in their communities.

Circumcision could result in increased stigma for individuals who do or do not undergo the surgery. We also encourage a focus on stigma, as it is possible that male circumcision could have a beneficial effect on HIV and AIDS stigma. It will be important to repeat qualitative studies that shed light on these over time, as events change. The perspective of parents also needs to be included.

Regarding whether to speak of ‘before’ or ‘as’ we scale-up, we prefer ‘as’ rather than ‘before’, because some people suggest that we should first of all wait until we have all the evidence. We prefer learning as we go in the same manner as scaling-up of HAART has occurred. There were those who said we needed more information to start scaling up antiretroviral treatment programmes; another group said let us start and we will learn along the way. However, there has to be an acceptable minimum of information before we start scaling-up: we need high-quality social and behavioural research that prepares the ground, highlights potential pitfalls, and flags unanticipated consequences. We also need the courage to learn from experience (Imrie, Elford, Kippax & Hart, 2007).

**3) Develop and field-test a male circumcision training programme, including training and resource materials development, both for traditional circumcision and for integrated cultural and medical circumcision; test the feasibility of collaboration with the traditional or religious sectors and assess training needs**

Unacceptably high numbers of complications arising from traditional circumcisions in parts of sub-Saharan Africa are well documented. Complications are not limited to traditional circumcisions; poorly trained medical personnel are also responsible for such problems. Male circumcision offers the opportunity to re-engage with religious and ethnic groups in HIV prevention. Because such practices carry major religious, social, and cultural meaning for many of these groups, some who have not always been comfortable with HIV prevention, male circumcision as an HIV prevention strategy could provide new avenues for dialogue. Many groups with diverse social histories that practice male circumcision for religious and ethnic reasons exist worldwide. In mapping the context of existing practices and strategies for potential interventions, local religious institutions and leaders should be consulted and should occupy central roles in advocating for HIV prevention. Whether the procedure needs to be done by a physician, or whether nurses or others can do it, should be addressed immediately, and these discussions should include local authorities and community members. Basic competency levels must be established, together with mechanisms for certifying that personnel are able to meet these standards. Evaluation activities that track uptake, quality, approaches, adverse events, etc. are also needed.

**4) Develop and field-test a rapid assessment tool for the introduction of male circumcision; assess the acceptability of MC to health care workers, both in traditionally circumcising and non-circumcising communities; pilot MC intervention in a non-MC community; test the feasibility of different service delivery models, including the use of mobile clinics.**

Research on MC delivery models may include stand alone adult male circumcision units in hospitals, counselling component GPs, integration of medical MC into initiation into manhood, or the feasibility of rolling out infant circumcision, perhaps as part of antenatal care and packaged with programmes to prevent mother-to-child transmission (PMTCT).

MC delivery modalities could be researched and evaluated in terms of: (1) MC counselling modalities (What is the minimum counselling message for young men, for mothers with infants; MC pre-group counselling; one-to-one counselling with doctor/paramedical officer who performs surgery); (2)

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the counselling message (the limitations of MC as an HIV risk-reduction measure, i.e., MC reduces but does not eliminate HIV risk); (3) the ongoing need to use other methods of protection; HIV testing and prevention; postoperative instructions (e.g., danger signs, routine follow-up); and other reproductive health topics, as well as links or referrals to other services; and (4) MC follow-up appointments and counselling to ensure normal healing and to assess for complications.

### 5) Pilot HIV testing for men seeking medical male circumcision (outside initiation into manhood)

At pre-circumcision medical examination, VCT and HIV risk reduction counselling should be offered in selected sites and evaluated. Preparation guidelines on pre-circumcision assessment, including VCT male circumcision should be part of a comprehensive HIV prevention package, which includes the provision of HIV testing and counselling services; family planning counselling and treatment for sexually transmitted infections; the promotion of safer sex practices; counselling on behaviour change; a gender component that addresses male norms and behaviors; and the provision of male and female condoms and promotion of their correct and consistent use. Counselling of men and their sexual partners is necessary to prevent them from developing a false sense of security and engaging in high-risk behaviours that could undermine the partial protection provided by male circumcision. Further, "post-MC clubs" should be established for young men, to be able to come back after the procedure, talk about their new MC status, discuss the "ABCs" of prevention, get condoms, etc. This might help compensate for the absence of the group education and socialisation experience that occurs during the seclusion period of traditional initiation/rites of passage practices.

### 6) Post-circumcision (both medical and ritual) HIV risk reduction counselling

There should be testing and evaluation of post male circumcision HIV risk reduction counselling in a single 60 min individual or 3-hour group intervention during following MC. In the context of traditional MC, VCT should be offered at the post MC counselling session. The assessment of behavioural disinhibition among men who undergo male circumcision for HIV prevention is to be included (Agot *et al.*, 2007).

### 7) Randomised controlled studies

Randomised controlled studies indicated that most infections occurring in circumcised men occurred in the first 6 months following circumcision. One of the protective mechanisms postulated for the efficacy of MC is the keratinisation or thickening of the skin around the frenulum of the penis and the residual cuff of the coronal mucosa (Szabo & Short, 2000), which is a barrier to HIV transmission. It appears that this process takes some time to occur following circumcision. The exact time that this occurs will be important both in counselling and the determination of when sexual relationships can recommence following MC. The current estimates of the cost of a single circumcision is 59 USD per circumcision and a minimum duration of 30 minutes (Wilson & De Beyer, 2006). If cheaper techniques can be developed this will reduce the cost, the duration of the procedure, as well as the skill level of the providers, all of which will serve to increase acceptability.

### 8) Longer-term studies on cost, safety and outcomes of MC in the context of HIV prevention; input into national strategic plans

Research is needed into the development of national strategic plans for male circumcision for countries with the highest HIV prevalence, including assessment of current capacity, the development of a single sentinel surveillance and reporting mechanism, clear guidelines on basic standards of care, plans for complication triage, measurable targets, cost analyses, and specific assessment of internal ethnic group practices. The development of such plans should include traditional practitioners and religious groups. Research on the ethnic and cultural dynamics of MC scale-up is needed.

There should be development of regionally specific tool kits for ministries of health, that outline standards, triage, and surveillance techniques. These kits would include manuals and modules for training of practitioners as well as for the training of trainers. Training should proceed immediately in medical and nursing schools in resource-poor settings. This should be a priority for multilateral and government organisations. Regional centres of excellence should be established with responsibilities for training practitioners, monitoring quality, and assessing outcomes.

In the above an overview is provided on different MC implementation strategies, most African countries not



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**TABLE 2. OVERVIEW OF EXAMPLES ON MC IMPLEMENTATION STRATEGIES**

Country	Policy/Guidelines/Implementation strategy
Botswana (Wilson & De Beyer, 2006)	Took a policy decision to offer male circumcision as a routine part of antenatal care at all health facilities some years ago, but this has not been implemented
Kenya	MC incorporated in HIV prevention programmes Undergo modern MC by medical professionals
Malawi	The National AIDS Commission has been holding nationwide stakeholder meetings on MC and HIV. No decision has been made at policy level as to whether MC is to be adopted.
Rwanda (Musoni, 2007)	Embark on a sensitisation campaign to have males circumcised as one way of combating HIV and AIDS Mass male circumcision (initially target the army, police & higher education students) Upgrading the equipment in hospitals and health centres for safe MC Receive procedure at recommended medical centres from qualified medical workers
South Africa	The national strategic plan recommends that recent findings about the protective effects of male circumcision be translated into policies and programmes.
Swaziland (Brody, 2006)	Standardisation of all aspects of male circumcision is "high priority", and new formats for patient evaluations, consent, post-operative instructions and follow-up have been introduced for use in all Swaziland's circumcision facilities Training in public health sector in MC; country wide register for MC Mobile military hospitals should be established in villages to provide MC
Zambia (Bowa & Lukobo, 2006)	Improve the quality and accessibility of comprehensive MC and male RH services in Zambia Male reproductive health/male circumcision (RH/MC) service site at Lusaka's University Teaching Hospital (UTH) Standardisation of the MC procedure among providers performing it Development and standardisation of training and patient education materials

having embarked on any steps on MC implementation.

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