

## **Male Circumcision and HIV/RH Summary Points**

**USAID Offices of HIV/AIDS and Population, Revised Sept. 2002**

### **A Large and Growing Body of Data Links the Lack of Male Circumcision to Increased HIV Risk:**

- As reviewed in Lancet in 1999, over 35 studies from 10 countries, mostly in Africa and also India, USA, etc., have found a significant association, from 2 to 8-fold greater HIV risk, due to lack of male circumcision (MC) ([hivinsite.ucsf.edu/InSite.jsp?doc=2098.4613](http://hivinsite.ucsf.edu/InSite.jsp?doc=2098.4613)). These include 8 cohort studies, most recently by Johns Hopkins researchers in Rakai, Uganda (N Engl J Med 2000;342:921-9), who analyzed risk factors for HIV infection in married couples where only one partner was initially infected. Among 137 uncircumcised, uninfected men at baseline, 40 seroconverted during the two-year study. Among the 50 circumcised men (including 14 non-Muslims), *none* became infected during the same period - regardless of their female partners' viral load levels.
- A systematic review and meta-analysis conducted by the London School of Hygiene and Tropical Medicine (AIDS 2000;14:2361-70), after controlling for potentially confounding socio-cultural, religious or other factors, found a significant association between lack of MC and HIV infection in all 15 (adjusted) African studies. MC was associated with a 58% decrease in risk for men in general population and 71% among higher-risk men. (A recent meta-analysis of the estimated HIV risk reduction from STD treatment was 22%.)
- In a July 11, 2000 San Francisco Chronicle report of a special session on MC held at the Durban AIDS Conference, Dr. Anthony Fauci, Director of the National Inst. of Health's main HIV Research Division, was quoted saying "the link between male circumcision and lower HIV infection rates is now an absolute fact."\*

### **A Principal Determinant of Regional Differences in HIV Prevalence Across Africa:**

- An extensive UNAIDS multi-site study by leading European researchers investigated numerous behavioral and other potential factors for the large disparities in HIV prevalence across different African regions (AIDS 2001;15:S15-30). Lack of MC (and genital herpes, which is more common in uncircumcised men) emerged as the principal determinant for the pervasive, continuing differences in HIV rates found in sub-Saharan Africa.
- As the Lancet study found, most countries in West Africa (except Cote d'Ivoire and Burkina Faso, which are the only two West African countries with significant numbers of uncircumcised men) continue to report HIV levels under about 5%, and in many cases below 2-3%, despite the presence of other classic risk factors for heterosexual HIV (multiple sexual partnering, low condom use, prevalence of other STDs, etc.). Prevalence in the South and Southeast Asian countries where nearly all men circumcised (Philippines, Indonesia, Pakistan, Bangladesh) remains extremely low, despite similar HIV/STD risk factors found elsewhere in the region.

### **Biological Reasons for MC's Apparent Protective Effect against Heterosexual HIV Infection:**

- The inner foreskin is much less keratinized than other genital mucosa, so its numerous Langerhans and other immune cell targets are unusually susceptible to HIV infection. In an *in vitro* study, viral uptake in this tissue was 7 times more efficient than in cervical tissue ([kaisernetwork.org/daily\\_reports/rep\\_index.cfm?DR\\_ID=11427](http://kaisernetwork.org/daily_reports/rep_index.cfm?DR_ID=11427)).
- In addition to the highly vascularized foreskin mucosa being prone to tearing or bleeding during intercourse (especially with the "dry sex" practices particularly common in Southern Africa), ulcerative STDs like HSV-2, chancroid and syphilis, which further facilitate HIV infection, are more prevalent in uncircumcised men.

### **Protection for Women, Including for Cervical Cancer:**

- If fewer men are infected with HIV, fewer women (and children) would subsequently be infected as well. Also, the JHU researchers in Rakai found male-to-female transmission was directly correlated with MC. Among 47 couples in which the circumcised male partner was HIV+ at baseline (and whose viral load was <50,000 particles, which was the case in most couples), none of their female partners were infected after two years, compared to 26 women seroconverting among the 143 partners of uncircumcised, HIV-infected men.

- A New Engl. J. Med. (2002;346:1105-12) multi-country study found HPV infection was lower in circumcised men and, as long suspected, cervical cancer rates were higher in the female partners of uncircumcised men.

\* Reports from the Durban MC session: [sfgate.com/cgi-bin/article.cgi?file=/chronicle/archive/2000/07/11/MN19580.DTL](http://sfgate.com/cgi-bin/article.cgi?file=/chronicle/archive/2000/07/11/MN19580.DTL)  
[washingtonpost.com/wp-dyn/articles/A16754-2000Jul10.html](http://washingtonpost.com/wp-dyn/articles/A16754-2000Jul10.html)    [nytimes.com/library/world/africa/071100safrica-aids.html](http://nytimes.com/library/world/africa/071100safrica-aids.html)

### **Other Health Benefits of Circumcision:**

- Studies have consistently found that MC eliminates or greatly reduces the risk of invasive penile cancer (extremely rare among circumcised men, yet the second leading cancer killer among males in some developing countries), urinary infections, phimosis, balanitis and various other foreskin-related conditions.

### **Apparent Growing Demand among Eastern and Southern African Men for Safe MC Services:**

- Surveys and qualitative studies in 6 African countries have found considerable interest among young as well as older men, ranging from 45% of men in Harare to over 80% in a large Botswana survey (Harvard AIDS Institute, 2001) reporting -- if safely and affordably available -- they would elect to undergo circumcision.
- Few men surveyed believe that MC can actually prevent AIDS. Their main interest is related to hygiene, infection control and, in addition, some say that MC makes condom use easier. This suggests that if MC becomes more commonly available, widespread behavioral “disinhibition” (riskier sex) may be unlikely.

### **Clinical Trials to Confirm the Efficacy of MC in Reducing HIV Transmission:**

- The existing data suggesting a strong association between lack of MC and reduced risk of HIV transmission is observational in nature. Randomized controlled trials (RCT) are the ultimate test of an intervention’s efficacy.
- In Feb. 2002, an RCT (among 2,750 men ages 18-24) began in Kisumu, western Kenya, funded by NIH and the Canadian Govt. The NIH recently funded JHU to conduct a similar MC trial in Rakai, Uganda, and in South Africa a French-funded clinical study is also underway. Findings due within next 3-5 years. Although observational studies have found that some prevention strategies, like MC, appear to be effective, to date no HIV intervention has been proven by RCTs to reduce adult transmission; if confirmed, MC would be the first.

### **Not a Magic Bullet:**

- MC (like microbicides and probably a vaccine) would not provide full protection for HIV, and little or none against urethral STDs such as gonorrhea and chlamydia, and obviously does not prevent unwanted pregnancies. Effective behavior change programs will still be needed to comprehensively address these risks.
- A number of issues require further exploration, including concerns related to bioethical/informed consent procedures, safety and complication rates, training of practitioners, cost effectiveness, relation to FGM advocacy, the potential for behavioral disinhibition, neonatal/child circumcision, cultural sensitivities, etc.

### **Policy Issues and New USAID Initiatives (Co-funded by Offices of HIV/AIDS and Population):**

- Many international organizations (e.g., WHO, UNAIDS, USAID, CDC, UNICEF, Internat. AIDS Conf., FHI, PSI, Popul. Council) have conducted meetings, reports, panels or studies on MC’s potential for reducing HIV.
- In March 2002, 13 internationally recognized scientists from the University of California, London School of Hygiene and Tropical Med., University of Paris, Australia National Univ, etc. concluded (AIDS;16(5):810-2):

*The responsible dissemination of information on the risks and benefits of MC and the development of affordable services for safe, voluntary circumcision should be integrated, on a pilot basis in appropriate locales, with existing HIV/STD prevention and reproductive health programs. Such efforts must commence now, lest the opportunity for a potentially important prevention measure be further delayed.*

Currently, USAID has no plans to actively promote MC, but is developing observational and pilot feasibility studies to assess potential acceptability and operational issues involved in implementing MC services, e.g.:

- May-June 2002 eval. by AIDSMARK (PSI, MSH, PATH) of existing MC clinical services in western Kenya.
- MC evidence and policy summit meeting to be held in Wash. DC, Sept. 18, 2002, involving other Donors, AID Missions, researchers, NGOs and other stakeholders, to review existing data, discuss outstanding issues.
- A limited number of developing country sites are being assessed for a possible MC/male RH demonstration pilot. USAID Missions potentially interested in participating in an assessment for a safe MC and male RH pilot program (funded mainly by Global Health core funds) are welcome to contact us ([dhalperin@usaid.gov](mailto:dhalperin@usaid.gov)).