Quarterly Research Digest
on Voluntary Medical Male Circumcision for HIV Prevention

1 October 2015

The Clearinghouse on Male Circumcision for HIV Prevention is pleased to introduce this quarterly research digest. The digest provides abstracts of articles from the peer-reviewed literature on male circumcision, with a focus on voluntary medical male circumcision for HIV prevention. Links are provided to the full text of articles that are open access. This digest includes articles published from 1 July to 30 September 2015.

Abstracts

1. Lebina, L., et al. (2015). "**Piloting PrePex for adult and adolescent male circumcision in South Africa - pain is an issue**." PLoS One **10**(9): e0138755.

BACKGROUND: The World Health Organisation and the Joint United Nations Programme on HIV/AIDS have recommended the scale-up of Medical Male Circumcision (MMC) in countries with high HIV and low MMC prevalence. PrePex device circumcision is proposed as an alternate method for scaling up MMC. OBJECTIVE: Evaluate safety and feasibility of PrePex in South Africa. DESIGN: A multisite prospective cohort PrePex study in adults and adolescents at three MMC clinics. Participants were followed-up 8 times, up to 56 days after PrePex placement. RESULTS: In total, 398 PrePex circumcisions were performed (315 adults and 83 adolescents) their median ages were 26 (IQR: 22-30) and 16 years (IQR: 15-17), respectively. The median time for device placement across both groups was 6 minutes (IQR: 5-9) with the leading PrePex sizes being B (30%) and C (35%) for adults (18-45 years), and A (31%) and B (38%) for adolescents (14-17 years). Additional sizes (size 12-20) were rarely used, even in the younger age group. Pain of device application was minimal but that of removal was severe. However, described pain abated rapidly and almost no pain was reported 1 hour after removal. The Adverse Events rate were experienced by 2.7% (11/398) of all participants, three of which were serious (2 displacements and 1 self-removal requiring prompt surgery). None of the Adverse Events required hospitalization. The majority of participants returned to work within a day of device placement. CONCLUSION: Our study shows that PrePex is a safe MMC method, for males 14 years and above. PrePex circumcision had a similar adverse event rate to that reported for surgical MMC, but device removal caused high levels of pain, which subsided rapidly.

Available online:

http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0138755

2. Osaki, H., et al. (2015). "'**If you are not circumcised, I cannot say yes': the role of women in promoting the uptake of voluntary medical male circumcision in Tanzania**." PLoS One **10**(9): e0139009.

Voluntary Medical Male Circumcision (VMMC) for HIV prevention in Tanzania was introduced by the Ministry of Health and Social Welfare in 2010 as part of the national HIV prevention strategy. A qualitative study was conducted prior to a cluster randomized trial which tested effective strategies to increase VMMC up take among men aged >/=20 years. During the formative qualitative study, we conducted in-depth interviews with circumcised males (n = 14), uncircumcised males (n = 16), and

participatory group discussions (n = 20) with men and women aged 20-49 years in Njombe and Tabora regions of Tanzania. Participants reported that mothers and female partners have an important influence on men's decisions to seek VMMC both directly by denying sex, and indirectly through discussion, advice and providing information on VMMC to uncircumcised partners and sons. Our findings suggest that in Tanzania and potentially other settings, an expanded role for women in VMMC communication strategies could increase adult male uptake of VMMC services.

Available online:

http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0139009

3. Qian, H. Z., et al. (2015). "**Lower HIV risk among circumcised men who have sex with men in China: Interaction with anal sex role in a cross-sectional study**." J Acquir Immune Defic Syndr Sept. 21 [Epub ahead of print]

BACKGROUND: Voluntary medical male circumcision reduces the risk of HIV heterosexual transmission in men, but its effect on male-to-male sexual transmission is uncertain. METHODS: Circumcision status of men who have sex with men (MSM) in China was evaluated by genital examination and self-report; anal sexual role was assessed by questionnaire interview. Serostatus for HIV and syphilis was confirmed. RESULTS: Among1155 participants (242 known seropositives and 913 with unknown HIV status at enrollment), the circumcision rate by self-report (10.4%) was higher than confirmed by genital examination (8.2%). Male circumcision (by exam) was associated with 47% lower odds of being HIV seropositive (adjusted odds ratio [aOR], 0.53; 95% confidence interval [CI], 0.27-1.02) after adjusting for demographic covariates, number of lifetime male sexual partners, and anal sex role. Among MSM who predominantly practiced insertive anal sex, circumcised men had 62% lower odds of HIV infection than those who were uncircumcised (aOR, 0.38, 95%CI, 0.09-1.64). Among those whose anal sex position was predominantly receptive or versatile, circumcised men have 46% lower odds of HIV infection than did men who were not circumcised (aOR, 0.54, 95%CI, 0.25-1.14). Compared to uncircumcised men reporting versatile or predominantly receptive anal sex positioning, those who were circumcised and reported practicing insertive sex had an 85% lower risk (aOR, 0.15; 95%CI, 0.04-0.65). Circumcision was not associated clearly with lower syphilis risk (aOR, 0.91; 95%CI, 0.51-1.61). CONCLUSIONS: Circumcised MSM were less likely to have acquired HIV, most pronounced among men predominantly practicing insertive anal intercourse. A clinical trial is needed.

4. Ndagijimana, A., et al. **"PrePex male circumcision: follow-up and outcomes after the first two years of implementation at the Rwanda Military Hospital."** PLoS ONE **10**(9): e0138287.

Background: PrePex Male Circumcision (MC) has been demonstrated as an effective and scalable strategy to prevent HIV infection in low- and middle-income countries. This study describes the follow-up and outcomes of clients who underwent PrePex MC between January 2011 and December 2012 with weekly follow-up at the Rwanda Military Hospital, the first national hospital in Rwanda to adopt PrePex. Methods: Data on570 clients age 21 to 54 were extracted from patient records. We compared sociodemographic and clinical characteristics, the operator's qualification, HIV status, pain before and after device removal, urological status, device size and follow-up time between clients who were formally discharged and those who defaulted. We reported bivariate associations between each covariate and discharge status, number of people with adverse events by discharge status, and time to formal discharge or defaulting using life table methods. Data were entered into Epidata and analyzed

with Stata v13. Results: Among study participants, 96.5% were circumcised by non-physician operators, 85.4% were under 30years, 98.9% were HIV-negative and 97.9% were without any urological problems that could delay the healing time. Most (70.7%) defaulted before formal discharge. Pain before ($p<0.001$). Conclusion: Given that all socio-demographic and most clinical characteristics were not associated with defaulting, we hypothesize that clients stopped returning once they determined they were healed. We recommend less frequent follow-up protocols to encourage clinical visits until formal discharge. Based on these results and recommendations, we believe PrePex MC is a practical circumcision strategy in Rwanda and in sub-Saharan Africa.

Online at:

http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0138287

5. Mahler, H., et al. **"Covering the last kilometer: using GIS to scale-up voluntary medical male circumcision services in Iringa and Njombe regions, Tanzania."** Glob Health Sci Pract. 2015; **3**(3): 503-15.

BACKGROUND: Based on the established protective effect of voluntary medical male circumcision (VMMC) in reducing female-to-male HIV transmission, Tanzania's Ministry of Health and Social Welfare (MOHSW) embarked on the scaleup of VMMC services in 2009. The Maternal and Child Health Integrated Project (MCHIP) supported the MOHSW to roll out VMMC services in Iringa and Njombe, 2 regions of Tanzania with among the highest HIV and lowest circumcision prevalence. With ambitious targets of reaching 264,990 males aged 10–34 years with VMMC in 5 years, efficient and innovative program approaches were necessary. PROGRAM DESCRIPTION: Outreach campaigns, in which mobile teams set up temporary services in facilities or nonfacility settings, are used to reach lesser-served areas with VMMC. In 2012, MCHIP began using geographic information systems (GIS) to strategically plan the location of outreach campaigns. MCHIP gathered geocoded data on variables such as roads, road conditions, catchment population, staffing, and infrastructure for every health facility in Iringa and Njombe. These data were uploaded to a central database and overlaid with various demographic and service delivery data in order to identify the VMMC needs of the 2 regions. FINDINGS: MCHIP used the interactive digital maps as decision-making tools to extend mobile VMMC outreach to ''the last kilometer.'' As of September 2014, the MOHSW with MCHIP support provided VMMC to 267,917 men, 259,144 of whom were men were aged 10–34 years, an achievement of 98% of the target of eligible males in Iringa and Njombe. The project reached substantially more men through rural dispensaries and non-health care facilities each successive year after GIS was introduced in 2012, jumping from 48% of VMMCs performed in rural areas in fiscal year 2011 to 88% in fiscal year 2012 and to 93% by the end of the project in 2014. CONCLUSION: GIS was an effective tool for making strategic decisions about where to prioritize VMMC service delivery, particularly for mobile and outreach services. Donors may want to consider funding mapping initiatives that support numerous interventions across implementing partners to spread initial start-up costs.

Online at:

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4570020/

6. Brito, M. O., et al. (2015). **"A clinical trial to introduce voluntary medical male circumcision for HIV prevention in areas of high prevalence in the Dominican Republic."** PLoS One **10**(9): e0137376.

BACKGROUND: Voluntary Medical Male Circumcision (VMMC) is an effective strategy to reduce the risk of HIV infection. Studies conducted in the Dominican Republic (DR) suggest that acceptability of VMMC among men may be as high as 67%. The goal of this clinical trial was to assess the acceptability, uptake and safety for VMMC services in two areas of high HIV prevalence in the country. METHODS: This was a single-arm, non-randomized, pragmatic clinical trial. Study personnel received background information about the risks and benefits of VMMC and practical training on the surgical technique. A native speaking research assistant administered a questionnaire of demographics, sexual practices and knowledge about VMMC. One week after the surgery, participants returned for wound inspection and to answer questions about their post-surgical experience. RESULTS: 539 men consented for the study. Fifty seven were excluded from participation for medical or anatomical reasons and 28 decided not to have the procedure after providing consent. A total of 454 men were circumcised using the Forceps Guided Method Under Local Anesthesia. The rate of adverse events (AE) was 4.4% (20% moderate, 80% mild). There were no serious AEs and all complications resolved promptly with treatment. Eighty eight percent of clients reported being "very satisfied" and 12% were "somewhat satisfied" with the outcome at the one-week postoperative visit. CONCLUSIONS: Recruitment and uptake were satisfactory. Client satisfaction with VMMC was high and the rate of AEs was low. Roll out of VMMC in targeted areas of the DR is feasible and should be considered. TRIAL REGISTRATION: ClinicalTrials.gov NCT02337179.

Online at:

http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0137376

7. Byabagambi, J., et al. (2015). **"Improving the quality of voluntary medical male circumcision through use of the continuous quality improvement approach: a pilot in 30 PEPFAR-supported sites in Uganda."** PLoS One **10**(7): e0133369.

BACKGROUND: Uganda adopted voluntary medical male circumcision (VMMC) (also called Safe Male Circumcision in Uganda), as part of its HIV prevention strategy in 2010. Since then, the Ministry of Health (MOH) has implemented VMMC mostly with support from the United States President's Emergency Plan for AIDS Relief (PEPFAR) through its partners. In 2012, two PEPFAR-led external quality assessments evaluated compliance of service delivery sites with minimum quality standards. Quality gaps were identified, including lack of standardized forms or registers, lack of documentation of client consent, poor preparedness for emergencies and use of untrained service providers. In response, PEPFAR, through a USAID-supported technical assistance project, provided support in quality improvement to the MOH and implementing partners to improve quality and safety in VMMC services and build capacity of MOH staff to continuously improve VMMC service quality. METHODS AND FINDINGS: Sites were supported to identify barriers in achieving national standards, identify possible solutions to overcome the barriers and carry out improvement plans to test these changes, while collecting performance data to objectively measure whether they had bridged gaps. A 53-indicator quality assessment tool was used by teams as a management tool to measure progress; teams also measured client-level indicators through self-assessment of client records. At baseline (February-March 2013), less than 20 percent of sites scored in the "good" range (>80%) for supplies and equipment, patient counseling and surgical procedure; by November 2013, the proportion of sites scoring "good" rose to 67 percent, 93 percent and 90 percent, respectively. Significant improvement was noted in post-

operative follow-up at 48 hours, sexually transmitted infection assessment, informed consent and use of local anesthesia but not rate of adverse events. CONCLUSION: Public sector providers can be engaged to address the quality of VMMC using a continuous quality improvement approach.

Online at:

http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0133369

8. Chemtob, D., et al. (2015). **"Impact of male circumcision among heterosexual HIV cases: comparisons between three low HIV prevalence countries."** Isr J Health Policy Res **4**: 36.

BACKGROUND: Studies performed in high-HIV prevalence countries showed a strong epidemiological association between male circumcision (MC) and the prevention of HIV transmission. We estimated the potential impact of MC on the general heterosexual population in low-HIV prevalence countries. METHODS: Cross-national comparisons, including data on newly diagnosed HIV cases among heterosexuals living in Israel (where almost all males undergo MC), to similar data from the Netherlands and France (where <10 % of males are circumcised) were performed. National data from HIV registers and Bureaus of Statistics for the period of 2004-2010, global rates, rates by sex, age, and year of HIV-diagnosis were compared. MC and potential biases were examined. RESULTS: Annual rates of new HIV diagnoses per 100,000 were significantly lower in Israel compared to the Netherlands and France (for men: 0.26-0.70, 1.91-2.28, and 2.69-3.47, respectively; for women: 0.10-0.34, 1.10-2.10 and 2.41-3.08, respectively). Similarly, HIV-rates were much lower in Israel when comparing by age groups. Although Gross National Income per capita in 2010 was lower in Israel compared to the Netherlands and France, access to HIV testing and treatment were not different between countries. Also, the number of sexual-partners and condom-use in the general population showed a high similarity between the countries. CONCLUSIONS: The lower rate of HIV among heterosexuals in Israel compared to the Netherlands and France might be explained by MC routinely practiced in Israel, since other parameters of influence on HIV transmission were rather similar between the countries. However, recommendation for systematic MC in low HIV prevalence countries requires further investigations.

Online at:

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4524174/

9. Chikutsa, A. and P. Maharaj (2015**). "Social representations of male circumcision as prophylaxis against HIV/AIDS in Zimbabwe."** BMC Public Health **15**: 603.

BACKGROUND: The World Health Organisation recommended the scale-up of voluntary medical male circumcision (VMMC) as an additional HIV prevention method in 2007 and several countries with high HIV prevalence rates including Zimbabwe have since adopted the procedure. Since then researchers have been preoccupied with establishing the level of knowledge and acceptability of circumcision in communities that did not traditionally circumcise. Despite evidence to suggest that knowledge and acceptability of voluntary medical male circumcision is high, there is also emerging evidence that suggest that uptake of circumcision among men has been below expectations. The purpose of this study was thus to investigate people's representations of male circumcision that may influence its uptake. METHODS: Data for this study was collected through focus group discussions with men and women aged

between 18 and 49 years. This age group was selected because they are still very sexually active and are within the target population of the upscale of voluntary medical male circumcision programme. Women were included in the study because they would be directly involved in a decision to have their son(s) get circumcised for HIV prevention. The study was carried out in Harare, Zimbabwe. Obtained qualitative data was analysed using thematic content analysis. RESULTS: Results suggest that circumcision is perceived as an alien culture or something for "younger" men or "boys" who are not yet married. The findings also suggest that there are beliefs that circumcision maybe associated with satanic rituals. The issue of condom use after circumcision was also discussed and it was found that some men do not see the need for using condoms after getting circumcised. CONCLUSIONS: There is an urgent need for the development of communications that directly address the misconceptions about voluntary medical male circumcision. There is need for communication that encourages circumcised men to continue using condoms.

Online at:

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4489047/

10. Cremin, I., et al. (2015). **"Seasonal PrEP for partners of migrant miners in southern Mozambique: a highly focused PrEP intervention."** J Int AIDS Soc **18**(4 Suppl 3): 19946.

INTRODUCTION: To be used most effectively, pre-exposure prophylaxis (PrEP) should be prioritized to those at high risk of acquisition and would ideally be aligned with time periods of increased exposure. Identifying such time periods is not always straightforward, however. Gaza Province in southern Mozambique is characterized by high levels of HIV transmission and circular labour migration to mines in South Africa. A strong seasonal pattern in births is observable, reflecting an increase in conception in December. Given the potential for increased HIV transmission between miners returning in December and their partners in Gaza Province, PrEP use by the latter would be a useful means of HIV prevention, especially for couples who wish to conceive. METHODS: A mathematical model was used to represent population-level adult heterosexual HIV transmission in Gaza Province. Increased HIV acquisition among partners of miners in December, coinciding with the miners' return from South Africa, is represented. In addition to a PrEP intervention, the scale-up of treatment and recent scale-up of male circumcision that have occurred in Gaza are represented. RESULTS: Providing time-limited PrEP to the partners of migrant miners, as opposed to providing PrEP all year, would improve the cost per infection averted by 7.5-fold. For the cost per infection averted to be below US$3000, at least 85% of PrEP users would need to be good adherers and PrEP would need to be cheaper than US$115 per person per year. Uncertainty regarding incidence of HIV transmission among partners of miners each year in December has a strong influence on estimates of cost per infection averted. CONCLUSIONS: Providing time-limited PrEP to partners of migrant miners in Gaza Province during periods of increased exposure would be a novel strategy for providing PrEP. This strategy would allow for a better prioritized intervention, with the potential to improve the efficiency of a PrEP intervention considerably, as well as providing important reproductive health benefits.

Online at:

http://www.jiasociety.org/index.php/jias/article/view/19946

11. Devieux, J. G., et al. (2015). **"Knowledge, attitudes, practices and beliefs about medical male circumcision (MMC) among a sample of health care providers in Haiti."** PLoS One **10**(8): e0134667.

BACKGROUND: Haiti has the highest number of people living with HIV infection in the Caribbean/Latin America region. Medical male circumcision (MMC) has been recommended to help prevent the spread of HIV. We sought to assess knowledge, attitudes, practices and beliefs about MMC among a sample of health care providers in Haiti. METHODS: A convenience sample of 153 health care providers at the GHESKIO Centers in Haiti responded to an exploratory survey that collected information on several topics relevant to health providers about MMC. Descriptive statistics were calculated for the responses and multivariable logistic regression was conducted to determine opinions of health care providers about the best age to perform MMC on males. Bayesian network analysis and sensitivity analysis were done to identify the minimum level of change required to increase the acceptability of performing MMC at age less than 1 year. RESULTS: The sample consisted of medical doctors (31.0%), nurses (49.0%), and other health care professionals (20.0%). Approximately 76% showed willingness to offer MMC services if they received training. Seventy-six percent believed that their male patients would accept circumcision, and 59% believed infancy was the best age for MMC. More than 90% of participants said that MMC would reduce STIs. Physicians and nurses who were willing to offer MMC if provided with adequate training were 2.5 (1.15-5.71) times as likely to choose the best age to perform MMC as less than one year. Finally, if the joint probability of choosing "the best age to perform MMC" as one year or older and having the mistaken belief that "MMC prevents HIV entirely" is reduced by 63% then the probability of finding that performing MMC at less than one year acceptable to health care providers is increased by 35%. CONCLUSION: Participants demonstrated high levels of knowledge and positive attitudes towards MMC. Although this study suggests that circumcision is acceptable among certain health providers in Haiti, studies with larger and more representative samples are needed to confirm this finding.

Online at:

http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0134667

12. Feldblum, P. J., et al. (2015). **"Longer-term follow-up of Kenyan men circumcised using the ShangRing device."** PLoS One **10**(9): e0137510.

OBJECTIVES: To ascertain clinical sequelae, client satisfaction and sexual behavior 2+ years after male circumcision using the ShangRing device. METHODS: We enrolled 199 men from the Kenya sites (Homa Bay district) participating in a 2012 study of the ShangRing device used in routine male circumcision services (N = 552). We enrolled men who had had the ShangRing placed successfully, and over-sampled men who had had an adverse event and/or were HIV-positive during the field study. In the present study, each participant was examined and interviewed by a study clinician, and penile photographs were taken to document longer-term cosmetic results and any abnormal findings. RESULTS: 194 men were included in the analysis. The mean and median times between circumcision and the longer-term follow-up visit in this study were 31.8 and 32 months, respectively. Four men (2.1%) had signs/symptoms of a sexually transmitted infection (STI). Virtually all (99.5%) of the men were very satisfied with the appearance of their circumcised penis, and all would recommend a ShangRing circumcision to friends or family members. The most prevalent reported advantage of the circumcision was the ease of bathing and enhanced cleanliness of the penis (75.8%). 94.3% of the men did not cite a single negative feature of their circumcision. 87.5% of men reported more sexual pleasure post-MC, the most common reason

being more prolonged intercourse. The majority of men (52.6%) reported one sexual partner post-MC, but more than a quarter of the men (28.1%) reported an increased number of partners post-MC. Less than half of the men (44.3%) reported using condoms half of the time or more, but the great majority of condom users stated that condom use was much easier post-MC, and 76.9% of users said they used condoms more after circumcision than before. CONCLUSIONS: This study supports the safety and acceptability of ShangRing male circumcision during 2-3 years of follow-up. It should allay worries that the ShangRing procedure could lead to delayed complications later than the observation period of most clinical studies. TRIAL REGISTRATION: ClinicalTrials.gov NCT01567436.

Online at:

http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0137510

13. Homfray, V., et al. (2015). **"Examining the association between male circumcision and sexual function: evidence from a British probability survey."** AIDS **29**(11): 1411-1416.

OBJECTIVE: Despite biological advantages of male circumcision in reducing HIV/sexually transmitted infection acquisition, concern is often expressed that it may reduce sexual enjoyment and function. We examine the association between circumcision and sexual function among sexually active men in Britain using data from Britain's third National Survey of Sexual Attitudes and Lifestyles (Natsal-3). Natsal-3 asked about circumcision and included a validated measure of sexual function, the Natsal-SF, which takes into account not only sexual difficulties but also the relationship context and overall level of satisfaction. METHODS: A stratified probability survey of 6293 men and 8869 women aged 16-74 years, resident in Britain, undertaken 2010-2012, using computer-assisted face-to-face interviewing with computer-assisted self-interview for the more sensitive questions. Logistic regression was used to calculate odds ratios (ORs) to examine the association between reporting male circumcision and aspects of sexual function among sexually active men (n = 4816). RESULTS: The prevalence of male circumcision in Britain was 20.7% [95% confidence interval (CI): 19.3-21.8]. There was no association between male circumcision and, being in the lowest quintile of scores for the Natsal-SF, an indicator of poorer sexual function (adjusted OR: 0.95, 95% CI: 0.76-1.18). Circumcised men were as likely as uncircumcised men to report the specific sexual difficulties asked about in Natsal-3, except that a larger proportion of circumcised men reported erectile difficulties. This association was of borderline statistical significance after adjusting for age and relationship status (adjusted OR: 1.27, 95% CI: 0.99-1.63). CONCLUSION: Data from a large, nationally representative British survey suggest that circumcision is not associated with men's overall sexual function at a population level.

Online at:

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4502984/

14. Lau, F. K., et al. (2015). **"Understanding the socio-economic and sexual behavioural correlates of male circumcision across eleven voluntary medical male circumcision priority countries in southeastern Africa."** BMC Public Health **15**(1): 813.

BACKGROUND: Male circumcision (MC) has been demonstrated to be effective and cost-effective for HIV/AIDS prevention. Global guidance to adopt this intervention was announced in 2007 for countries with high HIV/AIDS prevalence and low MC prevalence. However, scale up of voluntary medical male circumcision (VMMC) programs in MC priority countries have been slow. Many of these countries have

particular cultural barriers that impede uptake of this effective intervention. This analysis explored correlates of MC status among men and their socio-economic, health and sexual behaviour factors using DHS data (2006-2011) from 11 MC priority countries. METHODS: Our analysis included univariate unadjusted analyses for individual countries and the region (by combining all countries into one dataset) and a multiple logistic regression model. RESULTS: Individual country results vary widely but alignment was mostly found between unadjusted analyses and multiple logistic regression model. The model found that men who are of the Muslim faith, reside in urban areas, have higher or secondary education attainment, hold professional occupations, and be in the richest wealth quintile are more likely to be circumcised. Circumcision is also positively correlated with lower reports of STIs, safe sexual behaviour, and HIV/AIDS prevention knowledge. CONCLUSIONS: Since the data collected predate VMMC program launch in these countries, results can only indicate baseline associations. However, characteristics of these existing circumcision practices may be utilized for better population targeting and program management to achieve higher impact with this effective prevention strategy.

Online at:

http://www.biomedcentral.com/1471-2458/15/813

15. Mangenah, C., et al. (2015). **"Estimating the cost of early infant male circumcision in Zimbabwe: results from a randomized noninferiority trial of AccuCirc device versus Mogen Clamp."** J Acquir Immune Defic Syndr **69**(5): 560-566.

BACKGROUND: Safe and cost-effective programs for implementing early infant male circumcision (EIMC) in Africa need to be piloted. We present results on a relative cost analysis within a randomized noninferiority trial of EIMC comparing the AccuCirc device with Mogen clamp in Zimbabwe. METHODS: Between January and June 2013, male infants who met inclusion criteria were randomized to EIMC through either AccuCirc or Mogen clamp conducted by a doctor, using a 2:1 allocation ratio. We evaluated the overall unit cost plus the key cost drivers of EIMC using both AccuCirc and Mogen clamp. Direct costs included consumable and nonconsumable supplies, device, personnel, associated staff training, and environmental costs. Indirect costs comprised capital and support personnel costs. In 1-way sensitivity analyses, we assessed potential changes in unit costs due to variations in main parameters, one at a time, holding all other values constant. RESULTS: The unit costs of EIMC using AccuCirc and Mogen clamp were $49.53 and $55.93, respectively. Key cost drivers were consumable supplies, capacity utilization, personnel costs, and device price. Unit prices are likely to be lowest at full capacity utilization and increase as capacity utilization decreases. Unit prices also fall with lower personnel salaries and increase with higher device prices. CONCLUSIONS: EIMC has a lower unit cost when using AccuCirc compared with Mogen clamp. To minimize unit costs, countries planning to scale-up EIMC using AccuCirc need to control costs of consumables and personnel. There is also need to negotiate a reasonable device price and maximize capacity utilization.

Online at:

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4508205/

16. Maughan-Brown, B., et al. (2015). **"What do people actually learn from public health campaigns? Incorrect inferences about male circumcision and female HIV Infection risk among men and women in Malawi."** AIDS Behav **19**(7): 1170-1177.

Qualitative studies and polling data from sub-Saharan Africa indicate that many individuals may mistakenly believe that male circumcision directly protects women from contracting HIV. This study examines whether individuals who learn that male circumcision reduces female-to-male HIV transmission also erroneously infer a reduction in direct male-to-female transmission risk (i.e. from an HIV-positive man to an uninfected woman). We used data on Malawian men (n = 917) randomized to receive information about voluntary medical male circumcision (VMMC) and HIV risk in 2008 and a random sample of their wives (n = 418). We found that 72 % of men and 82 % of women who believed that male circumcision reduces HIV risk for men also believed that it reduces HIV risk for women. Regression analyses indicated that men randomly assigned to receive information about the protective benefits of circumcision were more likely to adopt the erroneous beliefs, and that the underlying mechanism was the formation of the belief that male circumcision reduces HIV risk for men. The results suggest the need for VMMC campaigns to make explicit that male circumcision does not directly protect women from HIV-infection.

17. Mavhu, W., et al. (2015). **"Implementation and operational research: a randomized noninferiority trial of AccuCirc device versus Mogen Clamp for early infant male circumcision in Zimbabwe."** J Acquir Immune Defic Syndr **69**(5): e156-163.

BACKGROUND: Early infant male circumcision (EIMC) is a potential key HIV prevention intervention, providing it can be safely and efficiently implemented in sub-Saharan Africa. Here, we present results of a randomized noninferiority trial of EIMC comparing the AccuCirc device with Mogen clamp in Zimbabwe. METHODS: Between January and June 2013, eligible infants were randomized to EIMC through either AccuCirc or Mogen clamp conducted by a doctor, using a 2:1 allocation ratio. Participants were followed for 14 days post-EIMC. Primary outcomes for the trial were EIMC safety and acceptability. RESULTS: One hundred fifty male infants were enrolled in the trial and circumcised between 6 and 54 days postpartum (n = 100 AccuCirc; n = 50 Mogen clamp). Twenty-six infants (17%) were born to HIV-infected mothers. We observed 2 moderate adverse events (AEs) [2%, 95% confidence interval (CI): 0.2 to 7.0] in the AccuCirc arm and none (95% CI: 0.0 to 7.1) in the Mogen clamp arm. The cumulative incident risk of AEs was 2.0% higher in the AccuCirc arm compared with the Mogen Clamp arm (95% CI: -0.7 to 4.7). As the 95% CI excludes the predefined noninferiority margin of 6%, the result provides evidence of noninferiority of AccuCirc compared with the Mogen clamp. Nearly all mothers (99.5%) reported great satisfaction with the outcome. All mothers, regardless of arm said they would recommend EIMC to other parents, and would circumcise their next son. CONCLUSIONS: This first randomized trial of AccuCirc versus Mogen clamp for EIMC demonstrated that EIMC using these devices is safe and acceptable to parents. There was no difference in the rate of AEs by device.

Online at:

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4508202/

18. McMath, A. (2015). "**Infant male circumcision and the autonomy of the child: two ethical questions**." J Med Ethics **41**(8): 687-690.

Routine neonatal circumcision-the non-therapeutic circumcision of infant males-has generated considerable ethical controversy. In this article, I suggest that much of the disagreement results from conflicting ideas about the autonomy of the child. I examine two questions about autonomy. First, I ask whether we should be realists or idealists about the future autonomous choices of the child-that is, whether we should account for the fact that the child may not make the best choices in future, or whether we should assume that his future choices will reflect his best interests. Second, I ask whether the child has a right to autonomy with respect to circumcision, an interest in autonomy or neither-that is, whether respect for autonomy overrides considerations of interests, whether it counts as one interest among many or whether it counts for nothing. In response to the first question, I argue that we should be idealists when evaluating the child's own interests, but realists when evaluating public health justifications for circumcision. In response to the second question, I argue that the child has an interest in deciding whether or not to be circumcised, insofar as the decision is more likely to reflect his actual interests and his own values. Finally, I show how these findings may help to resolve some particular disputes over the ethics of infant male circumcision.

19. Milford, C., et al. (2015). **"Healthcare providers' knowledges, attitudes and practices towards medical male circumcision and their understandings of its partial efficacy in HIV prevention: Qualitative research in KwaZulu-Natal, South Africa."** Int J Nurs Stud.

BACKGROUND: Medical male circumcision has been shown to reduce HIV transmission to an uninfected male partner. In South Africa, medical male circumcision programs were rolled-out in 2010. OBJECTIVES: Prior to roll-out, we explored healthcare providers' knowledge, attitudes and practices about medical male circumcision and their understandings of partial efficacy for HIV prevention. DESIGN: We conducted qualitative research, using in-depth interviews. SETTING: Participants were from three rural and three urban primary healthcare clinics, randomly selected in eThekwini District, KwaZulu-Natal. PARTICIPANTS: 25 healthcare providers (including nurse managers, nurses and counselors) were purposively selected from the clinics. METHODS: In-depth interviews were recorded, transcribed and translated. Independent researchers reviewed the transcripts and developed a codebook based on emergent themes, using thematic analysis. NVivo 8 was used to facilitate data management, coding and analysis. RESULTS: Although most providers had heard that medical male circumcision can reduce risk of HIV acquisition in men, most did not have accurate scientific understandings of this. Some providers had misperceptions about the limited/partial protection medical male circumcision offers. Many had concerns that their communities would misunderstand it, causing increased risky sexual behavior. CONCLUSIONS: These data provide a baseline of providers' understandings of medical male circumcision prior to roll-out, and can be used to compare current data and ensure accurate messaging to clients. Healthcare provider messaging should build client understandings of the meaning of partially efficacious technologies.

20. Morris, B. J. and J. D. Klausner (2015). **"In developed countries male circumcision prevalence is inversely related to HIV prevalence."** Isr J Health Policy Res **4**: 40.

A study by Chemtob and co-workers found significantly lower prevalence of HIV amongst heterosexual men and women in Israel compared with the Netherlands and France. Risk factors for heterosexual HIV infection in these countries were similar, apart from one, namely, a strikingly higher prevalence of male circumcision (MC) in Israel compared with the Netherlands and France. It is now well established that MC protects heterosexual men against becoming infected with HIV during sexual intercourse with an infected woman. In epidemic settings, such as countries in sub-Saharan Africa, in which heterosexual contact is the primary driver for HIV infection, MC is being implemented to reduce HIV prevalence. The results of the new study by Chemtob and co-workers support the evidence and recent polices in the United States advocating MC to reduce the spread of HIV. While prevalence in developed countries is generally low, it is rising. In the long term, neonatal MC is the most desirable option, since not only is it simpler, safer, cheaper and more convenient than MC later, it provides immediate protection from infections, penile inflammation, genital cancers and physical problems. It is also cost-effective. European countries have not supported MC for its public health benefits. The new findings add to calls for European and other countries with low MC prevalence to consider developing evidence-based policies favoring MC in order to reduce HIV and other infections and diseases and at the same time reduce suffering, mortality and the cost of treating these.

Online at:

http://www.ijhpr.org/content/4/1/40

21. Ombere, S. O., et al. (2015). **"Wimbo: implications for risk of HIV infection among circumcised fishermen in Western Kenya."** Cult Health Sex **17**(9): 1147-1154.

Medical male circumcision has been shown to reduce the risk of heterosexual transmission of HIV infection in men by up to 60% in three randomised controlled trials. However, not much anthropological literature exists to provide a holistic understanding of sexual behaviour among migrating fishermen who have been circumcised. This qualitative study used cultural ecology theory and anthropological methods to develop a more holistic understanding of Luo fishermen's sexual behaviour after circumcision when they migrate (wimbo) to islands in western Kenya. Results from focus-group discussions show that during wimbo there is a deviation from community norms governing sexual expression, influenced by the belief that circumcision provides protection against HIV infection. Through the exchange of sex for fish, circumcised men access new sexual partners in the destination beaches and engage in risky sexual behaviours without any HIV prevention measures. The processes and practices associated with wimbo may therefore help explain why rates of HIV infection are increasing among fisherfolk despite new interventions to combat HIV. These results have relevant implications for HIV-related intervention and policy in sub-Saharan Africa.

Online at:

http://www.tandfonline.com/doi/abs/10.1080/13691058.2015.1018949?journalCode=tchs20

22. Pabalan, N., et al. (2015). **"Association of male circumcision with risk of prostate cancer: a meta-analysis."** Prostate Cancer Prostatic Dis.

BACKGROUND: Although early reports have suggested an association between circumcision and prostate cancer (PCa) development, results of subsequent epidemiological studies have been conflicting. Here we examine published articles that explore this association. METHODS: We searched MEDLINE through PubMed and Embase for articles reporting on the association between PCa and circumcision, and performed a meta-analysis of qualifying studies. RESULTS: On the basis of seven reports of case-control studies published from 1971 to 2014, overall findings showed nonsignificant reduced risk (odds ratio (OR) 0.88, P=0.19) of PCa in circumcised men compared with uncircumcised men, obtained under heterogeneous conditions (I2=65%). Heterogeneity and nonsignificance were erased when the overall effect was subjected to outlier treatment and three studies omitted (OR 0.90, P=0.04, I2=0%). Furthermore, subgroup analysis showed significantly reduced risks in the following subgroups: (i) post-PSA testing publications (OR 0.88, P=0.01), (ii) population-based studies (OR 0.84, P=0.05), (iii) studies that collected data by personal interview (OR 0.83, P=0.03) and (iv) studies in black race (OR 0.59, P=0.02). The strengths of these summary effects lie in the robustness revealed by sensitivity analysis. CONCLUSIONS: Stability of the reduced risks observed in key subgroups suggests that the protective feature of circumcision status against PCa is best seen in the context of the post-PSA testing and population-based studies as well as in the black race subgroup. Prostate Cancer and Prostatic Disease advance online publication, 28 July 2015; doi:10.1038/pcan.2015.34.

23. Toefy, Y., et al. (2015). **"'What do you mean I've got to wait for six weeks?!' Understanding the sexual behaviour of men and their female partners after voluntary medical male circumcision in the Western Cape."** PLoS One **10**(7): e0133156.

BACKGROUND: Several studies have shown that voluntary male medical circumcision (VMMC) reduces the incidence of the Type-1 human immunodeficiency virus (HIV) in heterosexual men by up to 60%. However, there is an increased risk of transmission of STIs, including HIV, in the immediate post-operative period after receiving VMMC. This study is to understand sexual practices of couples in the post-operative period in a Coloured population in the Western Cape Province of South Africa. METHODS: Coloured Males who had undergone VMMC in the previous six months in the Cape Town area and their partners participated in eight single-gender focus group discussions. The groups explored why the men decided to undergo VMMC, what kind of counselling they received, and how they experienced the 6-week post-operative period, including sexually. RESULTS: The primary motivation to VMMC uptake included religious injunction and hygiene reasons and protection against sexually transmitted infections not necessarily HIV. There was some exploration of alternative sexual practices. During the period immediately post operation the respondents spoke of pain and fear of any sexual arousal, but towards the end of the six week period, sexual desire returned. Both men and women felt that sex was important to maintain the relationship. Gaps were identified in the pre- and post-MC procedure counselling. CONCLUSIONS: There is a real risk that men in this population may begin sex before complete healing has occurred. VMMC counselling to encourage men to stay sexually safe in the wound-healing period, needs to take into account the real-life factors of the circumcised men. It is essential from a public health, and gender perspective that effective counselling strategies for the VMMC post-operative period, and the longer term, are developed and tested.

Online at:

http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0133156

24. Wachtel, M. S., et al. (2015**). "Countries with high circumcision prevalence have lower prostate cancer mortality."** Asian J Androl.

The present study determined the relationship of male circumcision (MC) prevalence with prostatic carcinoma mortality rate in the 85 countries globally for which data on each were available. MC prevalence in different countries were obtained from a WHO report and allocated to WHO categories of 81%-100%, 20%-80%, and 0%-19%. Prostatic carcinoma mortality data were from Globoscan, gross national income per capita as well as male life expectancy were from a World Bank report, and percentages of Jews and Muslims by country were from the Pew Research Institute and the North American Jewish Data Bank. Negative binomial regression was used to estimate prostatic carcinoma mortality rate ratios. Compared to countries with 81%-100% MC prevalence, prostatic carcinoma mortality rate was higher in those with MC prevalence of 0%-19% (adjusted OR [adjOR] =1.82; 95% CI 1.14, 2.91) and 20%-80% (adjOR = 1.80; 95% CI, 1.16, 2.78). Higher Muslim percentage (adjOR = 0.92 [95% CI 0.87, 0.98] for each 10% increase) and longer life expectancy (adjOR = 0.82 [95% CI 0.72, 0.93] for each 5 additional years) were associated with lower prostatic carcinoma mortality. Higher gross national income per capita (adjOR = 1.10 [95% CI 1.01, 1.20] for double this parameter) correlated with higher mortality. Compared with American countries, prostatic carcinoma mortality rate was similar in Eastern Mediterranean countries (adjOR = 1.02; 95% CI 0.58, 1.76), but was lower in European (adjOR = 0.60; 95% CI 0.50, 0.74) and Western Pacific countries (adjOR = 0.54, 95% CI 0.37, 0.78). Thus, prostate cancer mortality is significantly lower in countries in which MC prevalence exceeds 80%.

Online at:

http://www.ajandrology.com/preprintarticle.asp?id=159713

25. Warner, L., et al. (2015). "**Impact of health insurance type on trends in newborn circumcision, United States, 2000 to 2010**." Am J Public Health **105**(9): 1943-1949.

OBJECTIVES: We explored how changes in insurance coverage contributed to recent nationwide decreases in newborn circumcision. METHODS: Hospital discharge data from the 2000-2010 Nationwide Inpatient Sample were analyzed to assess trends in circumcision incidence among male newborn birth hospitalizations covered by private insurance or Medicaid. We examined the impact of insurance coverage on circumcision incidence. RESULTS: Overall, circumcision incidence decreased significantly from 61.3% in 2000 to 56.9% in 2010 in unadjusted analyses (P for trend = .008), but not in analyses adjusted for insurance status (P for trend = .46) and other predictors (P for trend = .55). Significant decreases were observed only in the South, where adjusted analyses revealed decreases in circumcision overall (P for trend = .007) and among hospitalizations with Medicaid (P for trend = .005) but not those with private insurance (P for trend = .13). Newborn male birth hospitalizations covered by Medicaid increased from 36.0% (2000) to 50.1% (2010; P for trend < .001), suggesting 390 000 additional circumcisions might have occurred nationwide had insurance coverage remained constant. CONCLUSIONS: Shifts in insurance coverage, particularly toward Medicaid, likely contributed to decreases in newborn circumcision nationwide and in the South. Barriers to the availability of

circumcision should be revisited, particularly for families who desire but have less financial access to the procedure.

Online at:

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4539816/

26. Yan, W. L., et al. (2015). "**Parental factors affecting the circumcision of non-Muslim Chinese boys include education and family history**." Acta Paediatr. Jul 28 [Epub ahead of print]

AIM: This study investigated the prevalence of circumcision among non-Muslim schoolboys in Urumqi, China, and how acceptable their parents found the practice. METHODS: A convenient cluster sample of non-Muslim schoolboys (n=3,614) aged six to 15 years of age and 873 mothers and 927 fathers completed self-administered questionnaires. We compared the consistency of the circumcision status reported by students and their parents and analysed the factors that influenced the parents to have their child circumcised. RESULTS: The mean age at circumcision was 8.3 years and the adjusted prevalence was 46.2%. Up to 45.4% of fathers and 66% of mothers with uncircumcised sons were willing to circumcise their sons after receiving further information on circumcision. Mothers were more likely to support circumcision if they had higher education levels, higher family income, were employed as government officials and had family members who had been circumcised, including their husband. Fathers were more likely to support circumcision if they were highly educated and had been circumcised themselves. CONCLUSION: The prevalence and acceptability of circumcision were higher than expected in this traditional schoolboy population in Urumqi, China. Factors that increased parental support for circumcision included high education and the father being circumcised.