

**PREVENTING HIV THROUGH SAFE
VOLUNTARY MEDICAL MALE CIRCUMCISION
FOR ADOLESCENT BOYS AND MEN IN
GENERALIZED HIV EPIDEMICS**

WEB ANNEX 5.1

**GRADE AND EVIDENCE-TO-DECISION TABLES
ON ENHANCING UPTAKE OF VOLUNTARY
MEDICAL MALE CIRCUMCISION AMONG MEN**

Preventing HIV through safe voluntary medical male circumcision for adolescent boys and men in generalized HIV epidemics: recommendations and key considerations. Web Annex 5.1. GRADE and evidence-to-decision tables on enhancing uptake of voluntary medical male circumcision among men

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WEB ANNEX 5.1

GRADE AND EVIDENCE-TO-DECISION TABLES ON ENHANCING UPTAKE OF VOLUNTARY MEDICAL MALE CIRCUMCISION AMONG MEN

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Table A5.1.1. GRADE evidence profile: Do home- or community-based service delivery/outreach interventions (or other structural interventions) increase VMMC uptake?

Author(s): Caitlin Kennedy and Teresa Yeh

Date: 2019

Question: Do home- or community-based service delivery/outreach interventions (or other structural interventions) increase VMMC uptake?

Settings: Low resource settings

Quality assessment		Number of patients				Effect		Quality	Importance			
No. of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Service delivery interventions	No such intervention or a different/lesser type of intervention	Relative (95% CI)	Absolute (95% CI)		
Uptake of VMMC – community-based RCTs (follow-up: 3 months)												
2 ^{1,2,ab}	randomized trials	no serious bias	no serious inconsistency	no serious indirectness	no serious imprecision ^c	none	106/226 (46.9%)	62/224 (27.7%)	RR 1.67 (1.29 to 2.14)	185 more per 1000 (80 more to 316 more)	●●● HIGH	CRITICAL
Uptake of VMMC – community-based – observational												
3 ^{3,5}	observational studies	no serious bias	no serious inconsistency	no serious indirectness	no serious imprecision	none	Studies were not pooled, but generally they reported more circumcisions associated with service-delivery interventions				●●○ LOW	CRITICAL
Uptake of VMMC – facility-based – RCTs (follow-up: 12 months)												
1 ⁶	randomized trial	no serious bias	no serious inconsistency ^d	no serious indirectness	serious imprecision ^e	none	161/389 (41.4%)	96/396 (24.2%)	RR 1.71 (1.38 to 2.11)	172 more per 1000 (92 more to 269 more)	●●○ MODERATE	CRITICAL
Uptake of VMMC – school-based – RCTs (follow-up: 4 months)												
1 ⁷	randomized trials	no serious bias	no serious inconsistency ^d	no serious indirectness	serious imprecision ^e	none	37/304 (12.2%)	17/371 (4.6%)	RR 2.66 (1.53 to 4.62)	76 more per 1000 (24 more to 166 more)	●●○ MODERATE	CRITICAL
Uptake of VMMC – school-based – observational												
2 ^{8,9,f}	observational studies	no serious bias	no serious inconsistency	no serious indirectness	serious imprecision ^g	none	16/69 (23.2%)	6/58 (10.3%)	RR 2.24 (0.94 to 5.36)	128 more per 1000 (6 fewer to 451 more)	●○○ VERY LOW	CRITICAL

CI = confidence interval; OR = odds ratio; RCT = randomized controlled trial; RR = risk ratio; VMMC = voluntary medical circumcision

Notes^a Data from Bamabas et al., 2016, only. Additional data from Wambura et al., 2017, on mean number of VMMC clients per cluster (not combinable in meta-analysis); intervention: 619 (SE: 110); control: 393 (SE: 83); mean difference: 227 (95% CI: 33 to 420), P=0.03^b Data from Bamabas et al., 2016, presented for comparison of most intensive (lay counsellor follow-up) with least intensive (standard referral)^c Not downgraded for small number of events because events from Bamabas and Wambura studies combined were not fewer than 300^d Single study^e Downgraded for imprecision for a small number of events (<300)^f Additional data from Montague et al., 2014, was not combinable in meta-analysis; pre-intervention: 58 VMMC procedures per month; post-intervention: 308 VMMC procedures per month.^g 95% confidence interval includes appreciable benefit and harm.

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Table A5.1.2. Evidence-to-decision table: service delivery interventions

Factor	Explanation/evidence	Judgement
Quality of evidence	<p>High to moderate quality evidence from four RCTs suggests service delivery interventions are associated with improved uptake of VMMC.</p> <p>Low quality evidence from five additional observational studies shows similar results.</p> <p>One low-quality observational study showed similarly high uptake of HIV testing across service delivery approaches.</p> <p>There were no data on safer sex/risk reduction counselling in VMMC services.</p>	Although evidence from RCTs was of high to moderate quality, the heterogeneity of service delivery approaches and settings makes a recommendation difficult.
Benefits and harms	A wide range of service delivery interventions is acceptable, and they increase uptake in VMMC services in various settings.	Although evidence from RCTs was of high to moderate quality, the heterogeneity of service delivery approaches and settings made it impossible for the Guideline Development Group to make a global conclusion, across the different approaches, that the benefits outweigh the harms.
Acceptability	Six acceptability studies suggested interventions were generally considered useful by clients and potential clients and were perceived to help men choose to get circumcised.	Most service delivery approaches were considered acceptable.
Values and preferences	There were no studies that considered values and preferences.	No information
Resource use and cost	<p>11 cost studies showed that service delivery interventions may create economies of scale and efficiencies when scaled up.</p> <p>Although demand creation activities increase costs, linkage to VMMC services that use task-shifting/sharing among providers, pre-established facilities and HIV/SRH services may minimize or save costs.</p>	There was mixed evidence regarding costs and resource use.
Equity and ethics	As with economic compensation interventions, an investment in service delivery approaches may make it easier for some boys and men to access VMMC services, but this has to be weighed against interventions that have broader health outcomes and benefits, especially considering the global universal health coverage agenda.	Uncertain
Feasibility	Service delivery interventions implemented in a research setting are generally feasible, with high uptake across settings and populations, high HIV testing within VMMC services and few adverse events.	Uncertain beyond a research/pilot project setting

Table A5.1.3. GRADE evidence profile: PICO question. Should economic compensation (financial or in-kind) be provided for accessing VMMC services, compared with no compensation, to increase VMMC uptake (also HIV testing)?

Author(s): Caitlin Kennedy and Teresa Yeh

Date: 2019

Question: Should economic compensation (financial or in-kind) be provided for accessing VMMC services, compared with no compensation, to increase VMMC uptake (also HIV testing)?

Settings: Low resource settings

Quality assessment		No. of patients				Effect		Quality	Importance			
No. of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Economic compensation interventions	No such intervention or a different/ lesser type of intervention	Relative (95% CI)	Absolute (95% CI)		
Uptake of VMMC – RCTs – overall												
5 ^{1,5,a}	randomized trials	no serious bias	no serious inconsistency	no serious indirectness	serious imprecision ^b	none	113/2365 (4.8%)	32/1007 (0.9%)	RR 5.23 (3.13 to 8.76)	109 more per 1000 (from 55 more to 200 more)	●●●○ MODERATE	CRITICAL
Change in uptake of VMMC – RCTs – lottery												
2 ^{3,a}	randomized trials	no serious bias	no serious inconsistency	no serious indirectness	very serious imprecision ^{b,c}	none	10/302 (3.3%)	4/299 (1.3%)	RR 2.48 (0.79 to 7.81)	20 more per 1000 (from 3 fewer to 91 more)	●●○○ LOW	CRITICAL
Change in uptake of VMMC – RCTs – food/transport vouchers												
2 ^{2,3}	randomized trials	no serious bias	no serious inconsistency	no serious indirectness	serious imprecision ^b	none	60/685 (8.8%)	10/669 (1.5%)	RR 5.85 (3.02 to 11.34)	72 more per 1000 (from 30 more to 155 more)	●●●○ MODERATE	CRITICAL
Change in uptake of VMMC – RCTs – lower price of VMMC services												
1 ⁴	randomized trials	no serious bias	no serious inconsistency ^e	no serious indirectness	very serious imprecision ^{b,c}	none	12/378 (3.2%)	0/170 (0.0%) ^d	RR 11.28 (0.68 to 189.42)	30 more per 1000 (from 1 fewer to 554 more)	●●○○ LOW	CRITICAL
Change in uptake of VMMC – RCTs – cash												
1 ^{5,f}	randomized trials	no serious bias	no serious inconsistency ^e	no serious indirectness	serious imprecision ^b	none			OR 5.30 (2.20 to 12.76)		●●●○ MODERATE	CRITICAL
Change in uptake of VMMC – observational – non-monetary gift												
1 ¹	observational studies	no serious bias	no serious inconsistency ^e	no serious indirectness	very serious imprecision ^{b,c}	none	21/136 (15.4%)	16/168 (9.5%)	RR 1.62 (0.88 to 2.98)	59 more per 1000 (from 11 fewer to 189 more)	●○○○ VERY LOW	CRITICAL
Change in uptake of VMMC – observational – cash												
1 ^{6,g}	observational studies	no serious bias	no serious inconsistency ^e	no serious indirectness	serious imprecision ^b	none			not estimatable		●○○○ VERY LOW	CRITICAL

Table A5.1.3. (continued)

Quality assessment		No. of patients				Effect		Quality				
No. of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Economic compensation interventions	No such intervention or a different/ lesser type of intervention	Relative (95% CI)	Absolute (95% CI)	Importance	
Change in uptake of VMMC – observational – food/transport vouchers												
1 ^f	observational studies	no serious bias	no serious inconsistency ^{d,e}	no serious indirectness	very serious imprecision ^{b,c}	none	7/305 (2.3%)	4/296 (1.4%)	RR 1.69 (0.50 to 5.74)	9 more per 1000 (from 7 fewer to 64 more)	○○○ VERY LOW	CRITICAL

CI = confidence interval; RR = risk ratio; OR = odds ratio; VMMC = voluntary medical circumcision

Notes

- This group of studies included Bazant et al., 2016,^g which was not combinable in meta-analysis. In the intervention group, there was a 47% increase in VMMC client attendance (264 procedures 1 year before the study period versus 388 during the study period), compared with an 8% increase in the control group (257 before versus 278 during).
- Downgraded for imprecision for a small number of events (<300)
- Confidence interval crosses 1
- Given zero events in the control group, a continuity correction of 0.5 was used to calculate the relative risk and the absolute effect size.
- Single study
- Data presented as an odds ratio only, not absolute numbers.
- This study presented an interaction effect showing the impact of the peer referral intervention using a binary variable for treatment facility in the intervention period. The results show that the intervention led to an increase of 7.60 circumcisions per month but that this effect was not statistically significant (95% CI -20.37 to 40.83).

References for Table A5.1.3

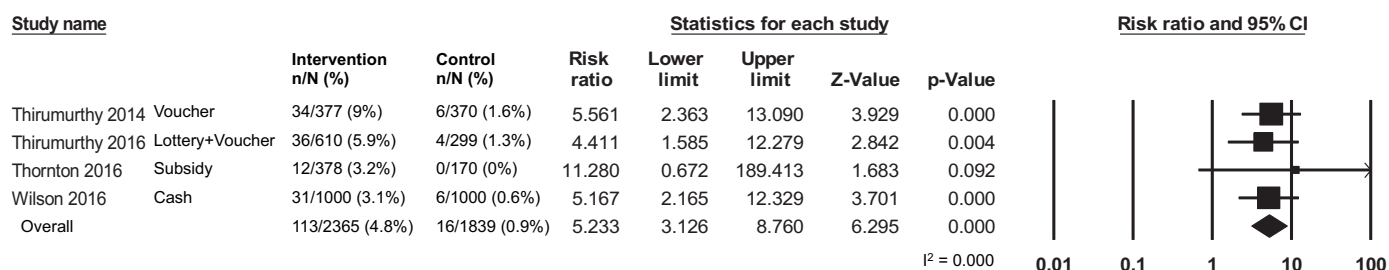
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Table A5.1.4. Studies on acceptability of economic compensation for VMMC

Study	Location	Methods/participants	Acceptability findings
Bazant et al., 2016 ¹	United Republic of Tanzania	Focus group discussions Six focus groups with 40 VMMC clients and six with 32 peer promoters	Peer promoters said the smartphone raffle succeeded in creating a “buzz” for VMMC. However, several participants said the raffle raised community suspicions. Some men wondered why the phone was not the older model they knew. Some felt the smartphone was too expensive and out of touch. Others preferred an incentive that all clients could receive. Money was the most frequently recommended incentive. Suggested amounts ranged from Tsh 1000 to Tsh 20 000 (US\$ 0.54-\$10.81). Some said all VMMC clients should receive transportation reimbursement, transportation to the facility, food to take home or farming commodities. Some clients and peer educators believed a free good-quality service was incentive enough. Stratification by socioeconomic background was not available.
DeCelles et al., 2016 ²	Zimbabwe	Qualitative interviews and focus groups 17 interviews and two focus groups with coaches and 29 interviews with circumcised (n=13) and uncircumcised boys (n=16) ages 14–19	Reactions to the incentives were mixed. Some felt that incentives increased their motivation to go for VMMC. Others felt that the “Coach’s Story,” a story told by a circumcised facilitator about his experience receiving VMMC, was a more important motivator. Overall acceptability was high for both the t-shirt and tickets as incentives. Some preferred the tickets because of their strong interest in football. Others preferred the t-shirt, which coaches believed stemmed from their desire to wear the same shirt as their coaches.
Evens et al., 2014 ³	Kenya	Qualitative interviews and focus groups Interviews with eight circumcised and 14 uncircumcised men, 20 female partners, 12 health care workers, 12 community leaders and 12 employers; eight focus groups.	The preferred intervention to address financial concerns among men was money to compensate for lost wages and/or to provide for family needs such as food, rent or children’s school fees. While most health care workers and community leaders supported financial compensation, some felt that providing cash was neither necessary nor feasible. Community leaders felt that men do not need financial support after circumcision because the actual need for assistance was low, because men would not want to take money from others or because they would not want their VMMC decisions to be public knowledge.
Evens et al., 2016 ⁴	Kenya	Qualitative interviews 45 circumcised and uncircumcised men and 19 female partners	Compensation promoted VMMC uptake by addressing lost wages. Participants who did not get circumcised perceived the amounts to be insufficient to offset their costs or reported nonfinancial barriers such as fear of pain. Participants did not feel compelled to get circumcised for financial gain. Female partners felt the intervention motivated their partners to get circumcised.
Marshall et al., 2017 ⁵	Orange Farm, South Africa	Quantitative survey 142 men undergoing VMMC among 212 men enrolled	Financial compensation for time equivalent to 2.5 days of work at the minimum South African salary rate, offered to those who agreed to VMMC, was reported as important or very important by 37.4% (53/142); almost 40% (56/142) said that they would not have undergone circumcision without this compensation ($P=0.023$). In addition, a personal VMMC adviser trained in interpersonal communication would, through up to three motivational interviews, explain risks and benefits of VMMC and discuss 24 possible reasons given by men for not being circumcised. Some 142 of the 212 men enrolled got circumcised (69.8%). Reasons for accepting VMMC were time compensation (39.4%) and motivational interviews with a VMMC adviser (83.1%); 60% of those circumcised indicated that they would have done so without receiving any money. The main reasons for declining to participate in the study was refusal to have a genital examination.
Zanolini et al., 2016 ⁶	Zambia	Quantitative survey 289 men ages 18+ undergoing VMMC	65% reported that a referral incentive motivated them “a lot” to refer friends for VMMC, while others reported that it motivated them “only somewhat” (29%) or “not at all” (6%). Some 18% reported that the incentive did not motivate them enough because the amount was too low; another 12% because they were reluctant to discuss VMMC with their friends. Men who attempted referrals and men who did not were no different in terms of age, education, transportation cost or knowledge of the circumcision status of friends.

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Fig. A5.1.1. Meta-analysis and specific studies on the effects of economic compensation on VMMC uptake among men

Source: Kennedy CE, Yeh PT, Atkins K, Sweat MD, O'Reilly KR, Rutherford GW et al. Economic compensation interventions to increase uptake of voluntary medical male circumcision for HIV prevention: A systematic review and meta-analysis. *PLoS One*. 2020;15(1):e0227623.

Table A5.1.5. Evidence-to-decision table on use of economic compensation to enhance VMMC uptake

Factor	Explanation/evidence	Judgement
Quality of evidence	Moderate to low quality evidence from six RCTs indicated economic compensation interventions are generally associated with improved uptake of VMMC. Very low quality evidence from two additional observational studies showed no effect. There were no data on uptake of HIV testing in VMMC services, safer sex/risk reduction counselling in VMMC services, changes in community expectations for economic compensation for other services, or potential coercion.	Although evidence from RCTs was of moderate to low quality, heterogeneity of service delivery approaches and settings made a recommendation difficult.
Benefits and harms	The Guideline Development Group thought that, in the context of the broader health needs and priorities and universal health coverage, providing economic compensation for a single HIV prevention intervention could have serious negative consequences.	Uncertainty about whether benefits outweighed the harms.
Acceptability	Six studies suggested that incentives are generally acceptable, valued for addressing key barriers and motivating to men. However, some study participants felt that they were not sufficiently motivating or were unnecessary, and one study suggested that they might raise community suspicions.	Uncertain, as largely acceptable to those receiving compensation/incentives but some concerns from communities and providers.
Values and preferences	There were no studies that considered values and preferences.	No information
Resource use and cost	One study in Soweto, South Africa, found a programme cost of US \$91 per additional circumcision and cost per HIV infection averted of US\$ 450 – \$ 1350 – a high overall cost per additional VMMC performed, although the offset of other costs for demand creation is unknown.	Uncertain and cost data mixed
Equity and ethics	The Guideline Development Group thought that compensation could increase equity among men, for example, those in rural areas for whom transport costs were a barrier to accessing services or men who would lose wages for attending VMMC services. However, singling out economic compensation for VMMC as opposed to a range of other health needs could increase inequity overall. Economic compensation could also persuade (inadvertently or otherwise) boys and men to take up VMMC rather than their making a decision based on their own health desires.	Overall, the Guideline Development Group did not think that economic compensation would increase equity more broadly, and ethical considerations did not favour this intervention.
Feasibility	Eight studies in review and one additional study found that this intervention has been successfully implemented in multiple research settings.	Uncertain; although feasible in research, it is unknown in practical settings.

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