Uneven progress on voluntary medical male circumcision

Programme across 15 eastern and southern African countries in the face of the COVID-19 pandemic

Introduction

Despite considerable progress in responding to the HIV epidemic over the past four decades, in 2020, an estimated 20 600 000 [16 800 000 - 24 400 000] million people were living with HIV in Eastern and southern Africa, with over 670 000 [470 000 - 930 000] million people having newly acquired HIV and 35 000 [28 000 - 43 000] dying from AIDS-related illnesses that year *(1)*.

A combination of behavioural, biomedical, and structural approaches to HIV prevention tailored to reach the populations at risk can achieve steep reductions in new HIV infections.

Voluntary medical male circumcision (VMMC) has been recommended by the Joint United Nations Programme on HIV/AIDS (UNAIDS) and the World Health Organization (WHO) since 2007 as part of a broader package of interventions designed to reduce HIV incidence among men in a generalized epidemic. It is a one-time, efficient, safe, cost-effective intervention *(2)*. VMMC offers men partial protection against HIV *(3–5)* and offers both women and men protection against other sexually transmitted infections, including human papillomavirus. Importantly, VMMC services reach men and adolescent boys who typically face barriers to accessing health care compared to women *(6)*. VMMC also provides an opportunity to increase awareness of HIV status among millions of men and boys who might otherwise not have the opportunity to test for HIV *(7)*. VMMC protective effects also extend to female sexual partners of circumcised men—for example, there is a protection association between male circumcision and of, cervical cancer, cervical dysplasia, HSV-2 infection, chlamydia, and syphilis *(8)*.

This short brief is a review of progress in provision of VMMC from 2007 to 2020. It builds from the annual progress brief released in 2021 and gives an analysis of the age groups covered and the subnational locations where programmes were delivered, the impact of the COVID-19 pandemic, and the overall impact of VMMC on averting new HIV infections.

The brief will be useful to country VMMC managers, VMMC country and global stakeholders, community-led organizations in SSA working with men and boys, implementing partners, United Nations joint programme Cosponsors, the VMMC steering and coordination group, donor partners and HIV prevention policy-makers.

Programme progress

Following the 2016 Political Declaration on Ending AIDS, which provided the overarching framework for taking forward HIV responses and monitoring progress, global programmatic Fast-Track targets were set, including for VMMC (9). The intention was to provide VMMC services to 25 million additional men and boys by 2020, translating to about 5 million per year. Table 1 and Figure 1 show the total numbers of VMMCs conducted in people aged 10 years and over in each VMMC priority country1 every year since 2008.

The latest country data reported to UNAIDS show widely varying progress in numbers and coverage of VMMC services for HIV prevention. VMMC programme momentum in 2020 has been uneven across the priority countries. The gains made by the highest-performing VMMC programmes have been tempered by insufficient progress in other countries.

1. Botswana, Eswatini, Ethiopia, Kenya, Lesotho, Malawi, Mozambique, Namibia, Rwanda, South Africa, South Sudan, Uganda, United Republic of Tanzania, Zambia, Zimbabwe.

Table 1. Annual provision of voluntary medical male circumcision (VMMC) in 15 eastern and southern African countries 2008-2020 [a,b]

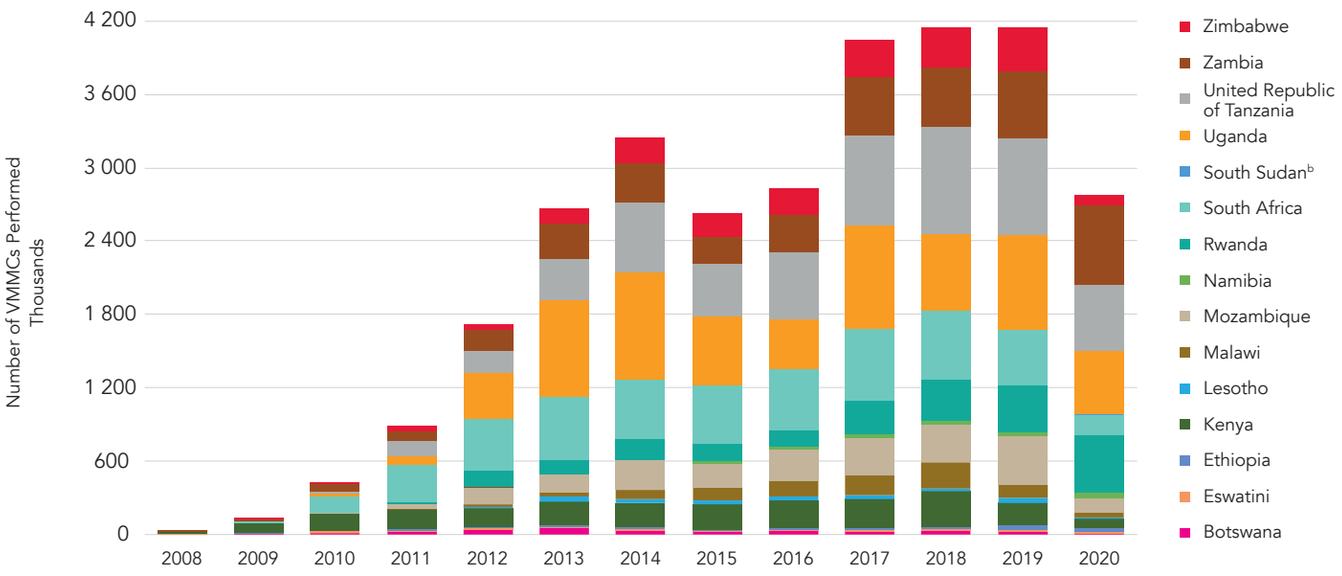
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total 2016-2020	Total 2008-2020
Botswana	0	5 424	5 773	14 661	38 005	46 793	30 033	15 722	24 042	19 756	24 207	17 123	3 171	**88 299**	**244 710**
Eswatini	1 110	4 336	18 869	13 791	9 977	10 105	12 289	12 952	17 374	18 138	14 316	17 360	8 639	**75 827**	**159 256**
Ethiopia	0	0	0	0	10 835	37 655	36 245	25 966	34 157	25 150	26 448	34 144	9 802	**129 701**	**240 402**
Kenya	11 663	80 719	139 905	159 196	151 517	190 580	193 576	207 014	219 086	233 879	286 899	91 863	77 120	**1 008 847**	**2 143 017**
Lesotho	0	0	0	0	10 835	37 655	36 245	25 966	34 157	25 150	26 448	34 144	9 802	**129 701**	**240 402**
Malawi	589	1 234	1 296	11 881	21 250	40 835	80 419	108 672	129 975	166 350	210 239	114 465	47 316	**668 345**	**934 521**
Mozambique	0	100	7 633	29 592	135 000	146 046	240 507	198 340	253 079	315 380	311 891	390 589	113 227	**1 384 166**	**2 141 384**
Namibia	0	224	1 763	6 123	4 863	1 182	4 165	17 388	27 340	30 134	34 942	40 868	45 881	**179 165**	**214 873**
Rwanda	0	0	1 694	25 000	138 711	116 029	173 191	138 216	137 218	264 973	327 904	382 223	471 926	**1 584 244**	**2 177 085**
South Africa	5 190	9 168	131 117	296 726	422 009	514 991	482 474	485 552	497 186	591 941	572 442	451 636	164 699	**2 277 904**	**4 625 131**
South Sudan[b]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1 147	1 453	1 747	**4 347**	**4 347**
Uganda	0	0	21 072	77 756	368 490	801 678	878 109	556 546	411 459	847 633	619 082	768 882	516 615	**3 163 671**	**5 867 322**
United Republic of Tanzania	0	1 033	18 026	120 261	183 480	329 729	573 845	435 302	548 390	730 435	885 599	799 456	539 859	**3 503 739**	**5 165 415**
Zambia	2 758	17 180	61 911	85 151	73 992	294 466	315 168	222 481	311 792	483 816	482 183	549 655	661 796	**2 489 242**	**3 662 349**
Zimbabwe	0	2 801	11 176	36 603	40 755	112 084	209 125	188 732	205 784	301 366	326 012	354 819	82 060	**1 270 041**	**1 871 317**
Total	21 310	122 988	422 924	884 283	1 710 845	2 658 566	3 240 977	2 622 627	2 827 188	4 044 740	4 146 320	4 145 578	2 778 644	**17 942 470**	**29 626 990**
Cumulative totals									14 511 708	18 556 448	22 702 768	26 848 346	29 605 680		

a Countries with available data: Botswana, Eswatini, Ethiopia, Kenya, Lesotho, Malawi, Mozambique, Namibia, Rwanda, South Africa, South Sudan, Uganda, United Republic of Tanzania, Zambia, Zimbabwe.

b South Sudan commenced its VMMC programme later in 2017 and reported its data for the first time in 2018.

Source: UNAIDS Global AIDS Monitoring, 2021 (https://aidsinfo.unaids.org/).

Figure 1. Annual provision of voluntary medical male circumcision (VMMC) in 15 eastern and southern African countries,[a] 2008–2020

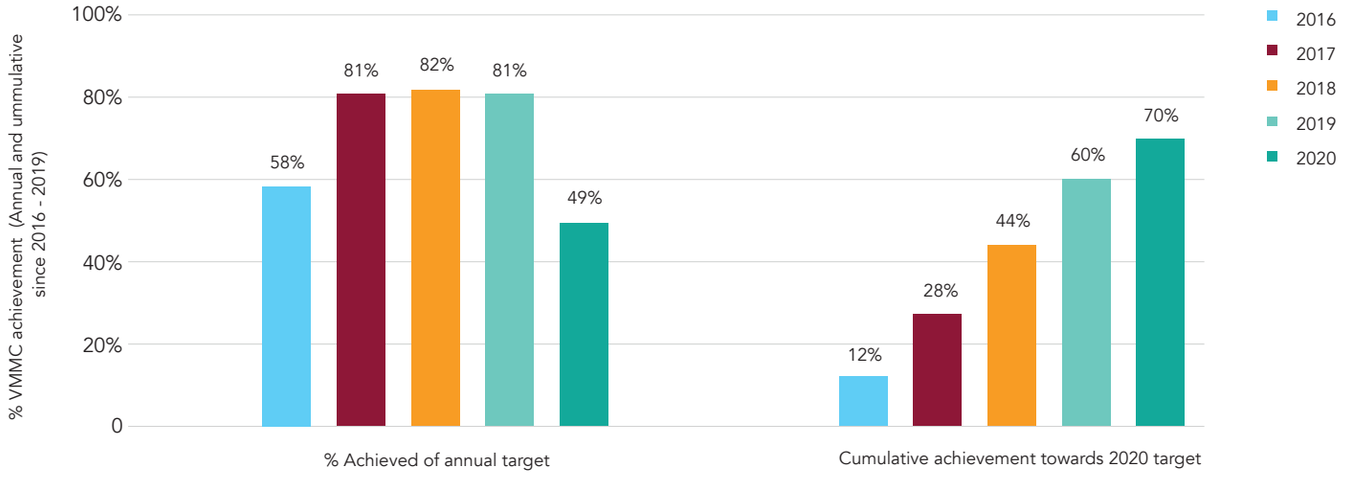


a Countries with available data: Botswana, Eswatini, Ethiopia, Kenya, Lesotho, Malawi, Mozambique, Namibia, Rwanda, South Africa, South Sudan, Uganda, United Republic of Tanzania, Zambia, Zimbabwe.

b South Sudan commenced its VMMC programme later in 2017 and reported its data for the first time in 2018.

Source: UNAIDS Global AIDS Monitoring, 2021 (https://aidsinfo.unaids.org/).

Figure 2. Annual voluntary medical male circumcision (VMMC) programme achievements towards yearly targets (2016–2020) and cumulative number of VMMCs towards the 2020 global targets in 15 eastern and southern African countries [a]

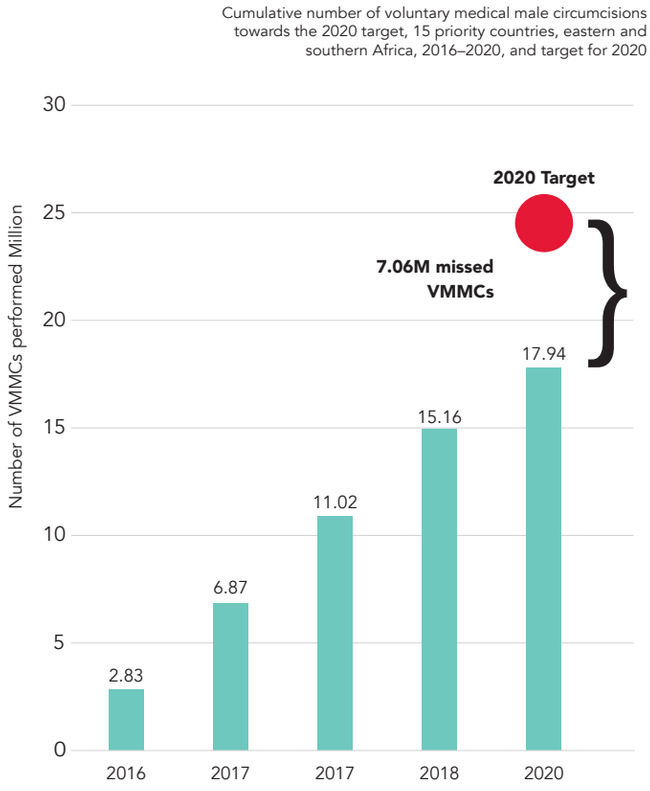


a Countries with available data: Botswana, Eswatini, Ethiopia, Kenya, Lesotho, Malawi, Mozambique, Namibia, Rwanda, South Africa, South Sudan, Uganda, United Republic of Tanzania, Zambia, Zimbabwe.

Source: UNAIDS Global AIDS Monitoring, 2021 (https://aidsinfo.unaids.org/).

A total of 18 million men and boys underwent VMMC in 2016–2020, falling short of the 2020 target of 25 million by over 7 million (Figure 3).

Figure 3. Cumulative number of men and boys opting for voluntary medical male circumcision towards the 2020 target in 15 priority countries, eastern and southern Africa[a], 2016–2020, and target for 2020



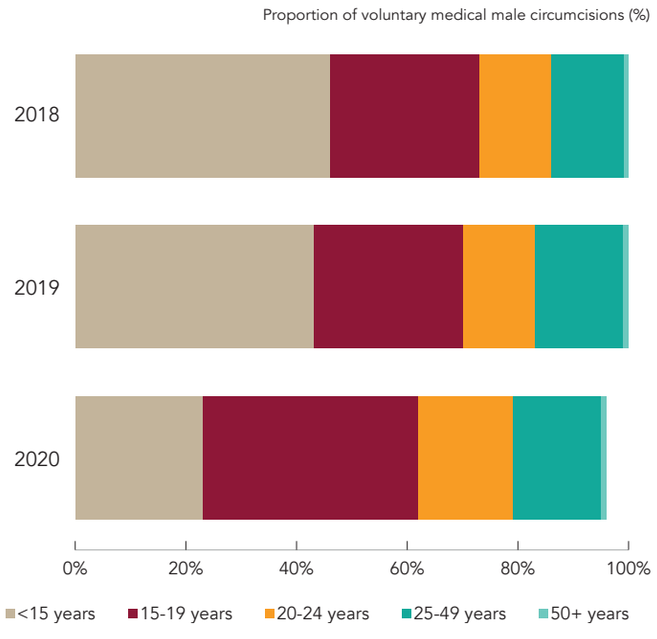
a Countries with available data: Botswana, Eswatini, Ethiopia, Kenya, Lesotho, Malawi, Mozambique, Namibia, Rwanda, South Africa, South Sudan, Uganda, United Republic of Tanzania, Zambia, Zimbabwe.

Source: UNAIDS Global AIDS Monitoring, 2021 (https://aidsinfo.unaids.org/).

Age disaggregates

Updated WHO guidance in 2020 recommends focusing VMMC services on males aged 15 years and over *(10)*. There has been a steady increase in the percentage of VMMCs conducted among men aged 15 years and over in several countries (Figure 4). In other countries, however, including Eswatini, Lesotho, Mozambique, and Zimbabwe, at least 30% of VMMCs in 2020 were in males aged under 15 years.

Figure 4. Proportion of men and boys accessing voluntary medical male circumcision (VMMC) by age group in 10 eastern and southern African countries,[a] with available data 2018–2020



a Countries with available data: Botswana, Eswatini, Kenya, Lesotho, Mozambique, Rwanda, South Sudan, United Republic of Tanzania, Zambia, Zimbabwe.

Source: UNAIDS Global AIDS Monitoring, 2021 (https://aidsinfo.unaids.org/).

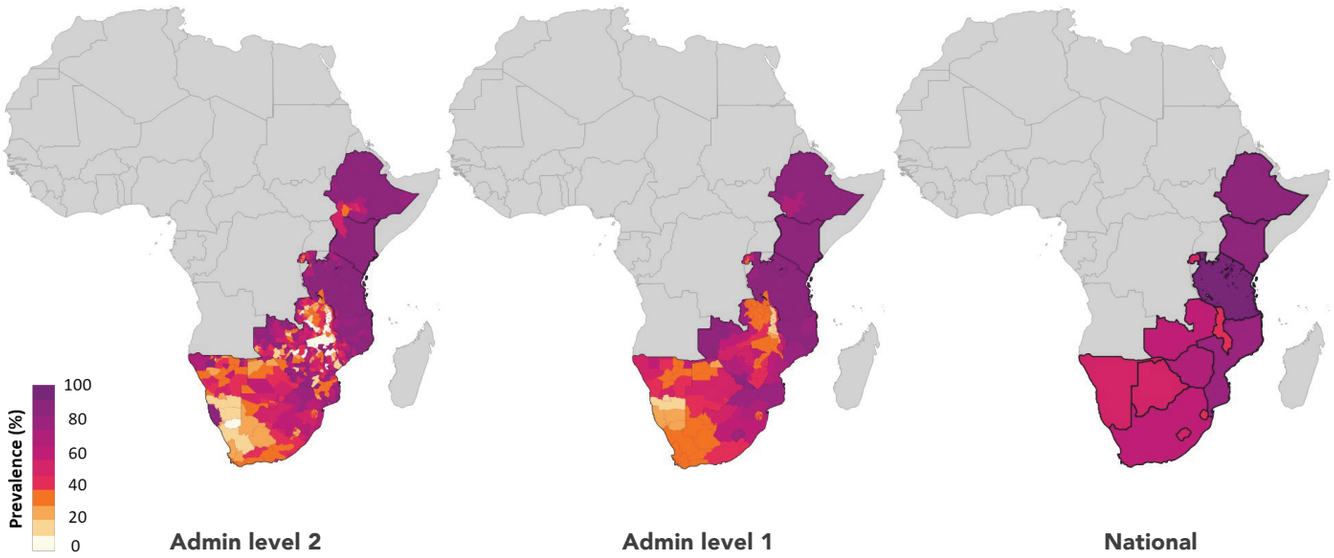
VMMC coverage mapping in national and subnational administrative areas

Good-quality VMMC data standardized for reliable and consistent programme planning and management in high-priority countries can be challenging to collect.
The online Decision Makers' Program Planning Toolkit (DMPPT) 2.0 was used to provide VMMC coverage estimates and support countries to set age-specific and geographical targets. Using data from 13 countries, and excluding non-targeted regions of Ethiopia, Kenya, Mozambique and the United Republic of Tanzania, almost half (49%, 290/590) of subnational locations had VMMC coverage below 60%, and only 27% (160/590) had coverage of 90% or more (Figure 4).

Making VMMC services routine and sustaining access to VMMC services for adolescent boys 15 years of age and over are required for districts with coverage over 90%. Intensified efforts to reach at least 90% coverage are needed for subnational areas with coverage of 60–90% and scale-up plans for subnational areas with coverage below 60% should be in place.

There are significant inequality gaps in VMMC services with higher proportions of men from higher wealth quintiles reporting being circumcised compared with those from lower wealth quintiles *(11)*. In some subnational locations of regions such as Mpumalanga and Eastern Cape provinces of South Africa, this gap is being addressed by VMMC services providers partnering with traditional initiation schools, often located in rural areas of low wealth quintiles, to provide medical male circumcision services.

Figure 5. Voluntary medical male circumcision (VMMC) coverage by district across eastern and southern African countries [a]



a Countries with available data: Botswana, Eswatini, Ethiopia, Lesotho, Malawi, Mozambique, Namibia, Rwanda, South Africa, United Republic of Tanzania, Zambia, Zimbabwe. Countries that did not have final validated data in DMPPT 2.0 (South Sudan, Uganda) are not included.

Admin level 1: provincial/regional level; admin level 2: district level.

Source: data from DMPPT 2.0, apart from coverage data for South Africa, which were from a special analysis by Avenir Health, 2020.

VMMC services under COVID-19

The COVID-19 pandemic has placed stresses on health systems and services. The lockdowns and physical distancing measures necessary to mitigate the spread of COVID-19 have made it difficult or impossible to continue many HIV programmes and services.

VMMC programme implementation was severely impacted by COVID-19 in 2020 (Figure 1), with service disruptions causing a steep drop in the number of men and boys receiving VMMC services, from 4.1 million in 2019 to 2.8 million in 2020.

At the same time, however, many countries adopted efficient adaptations to address VMMC service disruptions, ensuring VMMC risk-adjusted strategies across programmes. There was strict adoption of a risk-adjusted strategy in demand creation by ensuring safety precautions for staff, clients, and community members; safe client transportation to and from VMMC facilities by observing transport capacity and infection control; screening and sanitizing of clients before entry to facilities; and use of visible markings at facilities to indicate social distancing. Client bookings and training of field mobilizers and service providers were done virtually to minimize person contact.

As the COVID-19 pandemic continued, programme sites performed site-readiness assessments to inform resumption of VMMC services. Consequently, safe continuation of VMMC services has ensured COVID-19 transmission prevention measures were in place at VMMC sites, with sites implementing changes to client flow and using mobilization tools to replace interpersonal contact. At the community level, adaptations to demand creation for VMMC include safe outreach, limiting mass gatherings to fewer than 50 people, use of open spaces such as sports fields, limiting client transport to 70% capacity or less, passive mobilization methods, and procurement of mobile clinics for safe outreach services.[2]

2. This is from a synthesis of covid adaptations information and data by PEPFAR supported implementing partners.

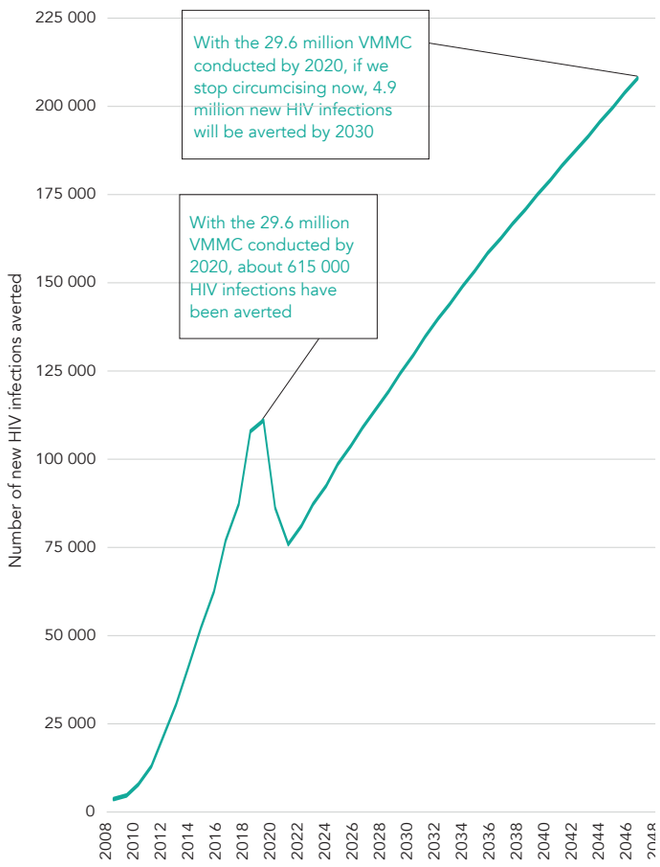
Impact of VMMC: HIV infections averted

Through a special analysis with Avenir Health, the impact of VMMC on averting new HIV infections was assessed by creating two mathematical model scenarios:

- Actual: this scenario uses the reported number of VMMCs conducted from 2008 to 2020.
- No VMMC: this scenario assumes that VMMC programmes never started, and circumcision coverage remained constant at the 2008 level.

The results indicate that 615 000 new HIV infections were averted between 2008 and 2020 by the 29.5 million VMMCs conducted during this period (Figure 6). This represents 1 infection averted for every 48 VMMCs performed. HIV infections averted during 2008–2020 represent only one of the benefits of VMMC. Since most VMMCs are conducted among young men and boys, the benefits continue as beneficiaries age through their highest-risk years. Estimation of the full benefit needs to account for infections averted after 2020 due to VMMCs conducted between 2008 and 2020 (Figure 6). Through 2030, 1.6 million infections are estimated to be averted, with a ratio of 1 infection averted per 19 VMMCs performed.

Figure 6. Number of new HIV infections averted due to voluntary medical male circumcision (VMMC) conducted since programme inception in 2008 for 15 countries from eastern and southern African [a]



a Countries with available data used in the analysis: Botswana, Eswatini, Ethiopia, Kenya, Lesotho, Malawi, Mozambique, Namibia, Rwanda, South Africa, South Sudan, Uganda, United Republic of Tanzania, Zambia, Zimbabwe.

Source: Special analysis by Avenir Health, 2020.

In the longer term, more of the benefit reaches women. For the period 2008–2020, according to the analysis 71% of HIV infections averted were among males (430 000) and 29% (180 000) were among females due to reduced prevalence of HIV among male sexual partners (decreased exposure). By 2030 a third of HIV infections averted will be among females, and by 2050 43% of cumulative infections averted will be among females.

These projections past 2020 assume that all other interventions remain at their current levels, including antiretroviral therapy and condom use. The numbers of cases averted above therefore represents the likely maximum impact. If the coverage of other interventions increases, then incidence will be lower, and the number of infections averted by VMMC will be smaller. If all countries achieve the UNAIDS targets by 2030, incidence will be sharply reduced.

Conclusion

The status of VMMC programmes shows widely varying coverage of male circumcision. The COVID-19 pandemic substantially impacted VMMC services for HIV prevention, and the 2020 VMMC targets were missed. At the same time, examples of successful VMMC programmes exist in many settings. There are significant gaps in VMMC programming with inequitable access.

VMMC remains a key pillar of combination HIV prevention. Mathematical modelling has shown that it is cost-effective, and even cost-saving (12) HIV prevention intervention in high HIV burden setting in Eastern and southern Africa. Now that countries are resuming VMMC services, the focus should be on enhancing uptake to continue to contribute to reducing HIV incidence and to maximize reach of other services to adolescent boys and men. In areas where the prevalence of circumcision among sexually active men is already high, a focus on sustaining and expanding VMMC services for adolescent boys is needed to maintain these high coverage levels. Accordingly, continued progress towards VMMC coverage targets in all high-priority countries must accelerate, and support must be intensified.

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