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REFERENCE

# Voluntary medical male circumcision

Remarkable progress in the scale-up of voluntary medical male circumcision as an HIV prevention intervention in 15 eastern and southern African countries

# Introduction

Voluntary medical male circumcision (VMMC) is a one-time preventive measure that reduces the risk of heterosexual transmission of HIV from women to men by 60% *(1–3)*. VMMC impacts on the HIV epidemic in high-prevalence settings. VMMC services are provided as a package of prevention interventions—including education on safer sex, condom education and provision, HIV testing and linkages to care and treatment if found positive, and managing sexually transmitted infections—in 15 eastern and southern African countries.

## Numbers of VMMCs performed each year in high-priority countries

In 2016 UNAIDS set global VMMC Fast-Track targets, with the aim of conducting 25 million additional VMMCs by 2020, translating to about 5 million VMMCs per year *(4)*. Table 1 shows the total numbers of VMMCs conducted in people aged 10 years and over in each high-priority country every year since 2008. The last three years of implementation alone have contributed about 50% (11 million) of the total cumulative number of VMMCs performed since the recommendation was issued (Table 1).

**Table 1.**
Yearly country performance of voluntary medical male circumcisions in 15 priority countries from eastern and southern Africa: 2008-2018

| | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | Total 2016–2018 | Total 2008–2018 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Botswana | - | 5424 | 5773 | 14 661 | 38 005 | 46 793 | 30 033 | 15 722 | 24 042 | 19 756 | 24 207 | 68 005 | 224 416 |
| Eswatini | 1110 | 4336 | 18 869 | 13 791 | 9977 | 10 105 | 12 289 | 12 952 | 17 374 | 18 138 | 14 316 | 49 828 | 133 257 |
| Ethiopia* | - | 769 | 2689 | 7542 | 11 961 | 16 393 | 11 831 | 9744 | 10 306 | 15 789 | 23 009 | 49 104 | 110 033 |
| Kenya | 11 663 | 80 719 | 139 905 | 159 196 | 151 517 | 190 580 | 193 576 | 207 014 | 219 086 | 233 879 | 286 899 | 739 864 | 1 874 034 |
| Lesotho | - | - | - | - | 10 835 | 37 655 | 36 245 | 25 966 | 34 157 | 25 150 | 26 448 | 85 755 | 196 456 |
| Malawi | 589 | 1234 | 1296 | 11 881 | 21 250 | 40 835 | 80 419 | 108 672 | 129 975 | 166 350 | 199 399 | 495 724 | 761 900 |
| Mozambique | - | 100 | 7633 | 29 592 | 135 000 | 146 046 | 240 507 | 198 340 | 253 079 | 315 380 | 311 891 | 880 350 | 1 637 568 |
| Namibia | - | 224 | 1763 | 6123 | 4863 | 1182 | 4165 | 17 388 | 27 340 | 30 134 | 34 942 | 92 416 | 128 124 |
| Rwanda | - | - | 1694 | 25 000 | 138 711 | 116 029 | 173 191 | 138 216 | 137 218 | 264 973 | 327 904 | 730 095 | 1 322 936 |
| South Africa | 5190 | 9168 | 131 117 | 296 726 | 422 009 | 514 991 | 482 474 | 485 552 | 497 186 | 511 191 | 572 442 | 1 580 819 | 3 928 046 |
| South Sudan** | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 1 147 | 1147 | 1147 |
| Uganda | - | - | 21 072 | 77 756 | 368 490 | 801 678 | 878 109 | 556 546 | 411 459 | 847 633 | 619 082 | 1 878 174 | 4 581 825 |
| United Republic of Tanzania | - | 1033 | 18 026 | 120 261 | 183 480 | 329 729 | 573 845 | 435 302 | 548 390 | 730 435 | 885 599 | 2 164 424 | 3 826 100 |
| Zambia | 2758 | 17 180 | 61 911 | 85 151 | 173 992 | 294 466 | 315 168 | 222 481 | 311 792 | 483 816 | 482 183 | 1 277 791 | 2 450 898 |
| Zimbabwe | - | 2801 | 11 176 | 36 603 | 40 755 | 112 084 | 209 125 | 188 732 | 205 784 | 301 366 | 326 012 | 833 162 | 1 434 438 |
| **TOTAL** | **21 310** | **122 988** | **422 924** | **884 283** | **1 710 845** | **2 658 566** | **3 240 977** | **2 622 627** | **2 827 188** | **3 963 990** | **4 135 480** | **10 926 658** | **22 611 178** |

* In Ethiopia, implementation of VMMC is in the Gambela region.
** South Sudan has only recently initiated a pilot VMMC programme, and its data were reported for the first time in 2018.

Source: 2019 Global AIDS Monitoring.

## Countries maintain pace of VMMC scale-up

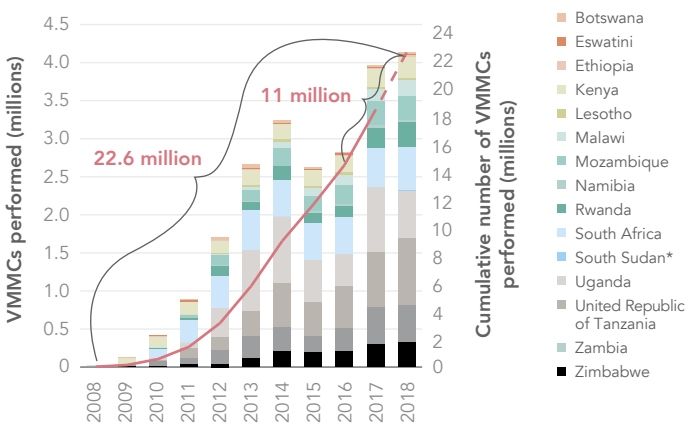
There have been 12 years of progress since VMMC was recommended in 2007 by UNAIDS and WHO as a key HIV prevention intervention in high-prevalence settings, particularly in countries in eastern and southern Africa. By the end of 2018, nearly 23 million VMMCs had been performed in the high-priority countries (Figure 1).

The pace of scale-up has varied across countries. An increase in the annual numbers of VMMCs performed was observed from 2008 through 2018 (cumulative increase shown by pink line in Figure 1). Although there has been progress in VMMC programme scale-up, more intensified efforts are still required to achieve the 2020 targets, especially in the countries that are lagging.

## Global reporting on VMMC progress, including age disaggregation, is improving

National VMMC programme monitoring and reporting are improving over time, including on age-disaggregated data, which are crucial for programming. In the 2018 reporting period, 80% (12 of 15) of the high-priority countries reported on age-disaggregated VMMC data. About 84% of VMMCs conducted in 12 of the 15 countries in 2018 were among adolescent boys and young men aged 10–24 years, which is within a high-priority age group (10–29 years) for this intervention. Although disparities exist across countries, a large proportion of VMMCs were among boys aged 10–14 years (Figure 2).

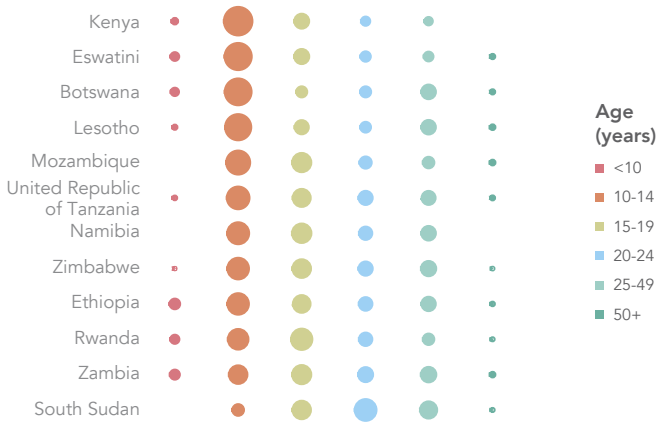
**Figure 1.**
Annual and cumulative numbers of voluntary medical male circumcisions (VMMCs) in 15 high-priority eastern and southern African countries, 2008–2018




* South Sudan has only recently initiated a pilot VMMC programme, and its data were reported for the first time in 2018, meaning the numbers for this programme are low.

Source: Global AIDS Monitoring 2019.

**Figure 2.**
Proportion of voluntary medical male circumcisions by age group in 12 high-priority countries, 2018




The size of the circle is proportional to the contribution of that age band to the country's total number of VMMCs conducted that year. Data shown are for 2018 only for 12 countries.

Source: Global AIDS Monitoring 2019.

# VMMC impact

Using the 22.6 million VMMCs conducted from 2008 to 2018 in the 15 countries in sub-Saharan Africa, mathematical modelling estimates that 250 000 [200 000–330 000] new HIV infections (78% male, 22% female) were averted by the end of 2018. The future benefits of this effective intervention will be much larger, since VMMC provides lifelong protection. Furthermore, mathematical modelling estimates that the VMMCs conducted so far would avert approximately 1.5 million new HIV infections by 2030 and 4.5 million by 2050, if the coverage of other HIV interventions, including antiretroviral therapy, remains constant. If Fast-Track targets are achieved for all interventions, then the VMMCs conducted so far would still avert 660 000 new HIV infections by 2030 and 1 million by 2050. The actual benefits are likely to be larger as programmes continue to provide for more VMMCs being performed each year (unpublished data, Avernir Health, June 2019).

In areas with low population coverage of VMMC, the focus should be on older adolescents and sexually active men to make an immediate impact on HIV incidence. In areas where the prevalence of circumcision among sexually active men is approaching saturation levels, a focus on sustainability and expanding services for adolescent boys is needed to maintain high coverage levels.

Global data have highlighted the challenges in reaching desirable health outcomes for men in the HIV response. However, the VMMC programme is a good example of an intervention that has consistently managed to reach men with good-quality HIV services for more than a decade.

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