How did we get here?

Understanding the evolution of the VMMC program

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The findings and conclusions in this presentation are those of the author(s) and do not necessarily represent the official position of the agency.

Overview

- **VMMC bottom line (or, ‘why still VMMC?’)**
- **The program to date: the arcs of VMMC programming and guidance, progress, impact, and quality and safety**
- **Challenges**
- **Lessons learned**
  - Safety
  - Demand Generation
  - Implications for other prevention programs
- **What comes next?**

VMMC bottom line

…or, why (still) VMMC?

If we had a one-dose HIV vaccine that was 60% effective today, what should we be doing with it?

- **VMMC reduces a man's risk of heterosexual acquisition by ~60% and is a . . .**
  - Scientifically proven, programmatically successful,
  - Uniquely cost-saving/cost-effective
  - One-time intervention with lifelong effect, needing no further action from client or health system,
  - Preventing HIV, regardless of future challenges in HIV control programs
  - As well as multiple other sexual health conditions for both men and women
  - And which connects to longstanding African traditions and is popular with men
  - And has shown promise for sustainability.
  - The more VMMCs now, the fewer HIV cases to treat in the future

Unique advantages of VMMC among prevention interventions

VMMC	Other prevention interventions
One-time intervention with lifelong effect	Require ongoing use to maintain effect
Does not require any behavioral change to work	Require user adherence, including in challenging and sometimes unsafe contexts (condom negotiation)
Cost-effective in the general population	Some (condoms) can be cost-effective in general population; others, only in specific subpopulations
Available to all physically mature men 15+ years old without medical contraindications; no behavior disclosure or HIV testing necessary. MSM, PLHIV, and others are welcome.	Necessary eligibility criteria can drive away people averse to testing/disclosing

Because of its differences from other prevention options, VMMC greatly broadens men's available choices in how to protect themselves.

Other benefits of VMMC

- **A safety net against losing epidemic control**
  - Loss of funding, supply chain interruptions, conflict or disasters
  - New PrEP options will take unknown time to scale up and sustainability is unknown
  - Regardless: every VMMC already done keeps decreasing the cost of maintaining epidemic control, every year, for decades
- **Other health and health system benefits**
  - Substantially decreases risk for many STIs in men and women, and for cervical cancer, saving MoH budgets STI treatment costs
  - Capacity building: most providers are nurses, all of whom now have key surgical skills
  - Entry to health care: no comparable entry point to engage large numbers of men

The program to date:

arcs of VMMC program and guidance, progress, impact, quality and safety

VMMC Program Arc (1)

1990-2000: Decade of ecological/observational data suggesting protective effect; provided basis for RCTs

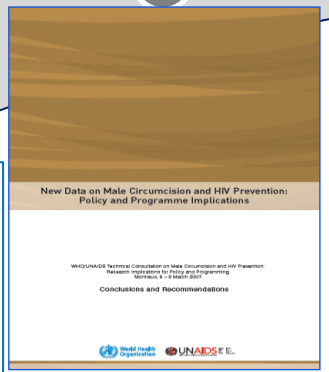
2005-2007: Gold-standard evidence of efficacy from 3 Randomized Control Trials

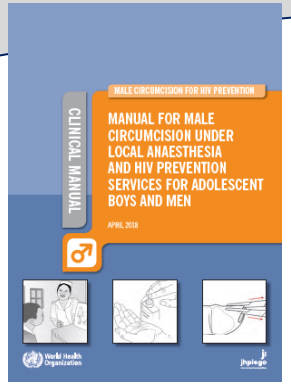
2007-2009: Translation of WHO guidance into national policies and standards of care

2009-Current: Translation of national policies into practice and expansion to public health scale

Meta-analysis of 15 studies established protective effect

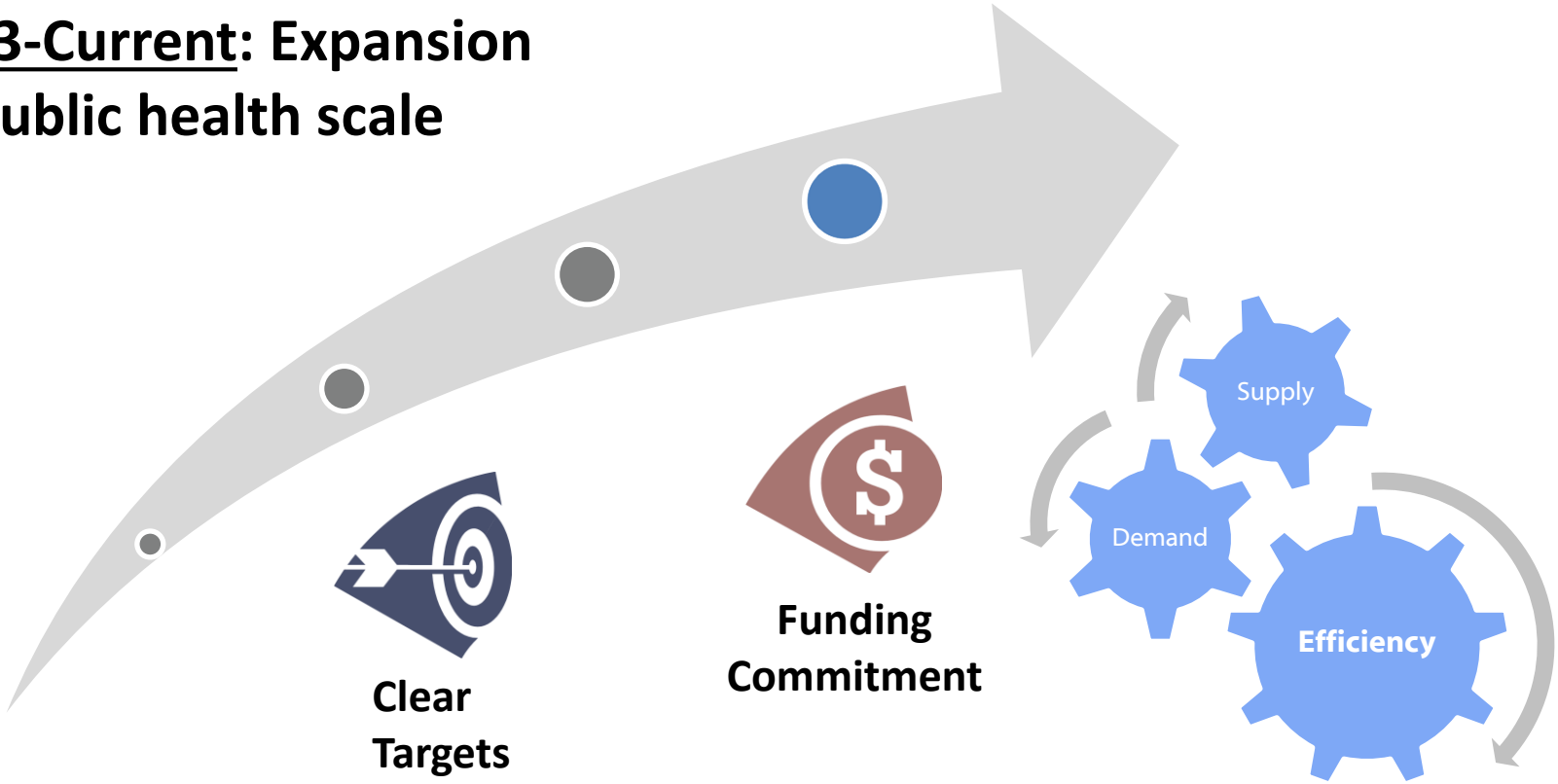
RCTs in South Africa, Kenya and Uganda found approximately **60% reduction** in risk of female-to-male HIV transmission





VMMC Program Arc (2)

<u>2013-Current</u>: Expansion to public health scale



VMMC Guidance Arc

Timeline of VMMC Key Achievements and Milestones

2005-07

Findings published from three randomized control trails that demonstrated the efficacy of VMMC for reducing risk of heterosexual transmission of HIV from women to men by up to 60%.

Evidence base is established for VMMC

2007-10

WHO and UNAIDS recommend VMMC for scale-up as an HIV prevention intervention in countries with a high incidence of HIV and a low prevalence of male circumcision.

Priority countries establish VMMC programs

2011

Launch of WHO Joint Strategic Action Framework for Accelerating Male Circumcision Scale-up.

1.5 million VMMCs performed

2012

WHO publishes the "Framework for Clinical Evaluation of Devices for Male Circumcision" helping to establish the standard by which device use should be evaluated.

3.2 million VMMCs performed

2016

WHO releases "A Framework for VMMC: Effective HIV Prevention and Gateway to Improved Adolescent Boys' & Men's Health in Eastern and Southern Africa by 2021".

14.5 million VMMCs performed

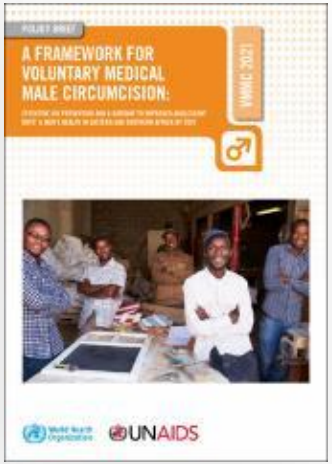
2020

- WHO publishes updated guidelines: "Preventing HIV through safe VMMC for adolescent boys and men in generalized HIV epidemic" with a framework to guide the transition to the sustained provision of VMMC services.
- PEPFAR updates its VMMC client age eligibility to 15 years and older.

2021

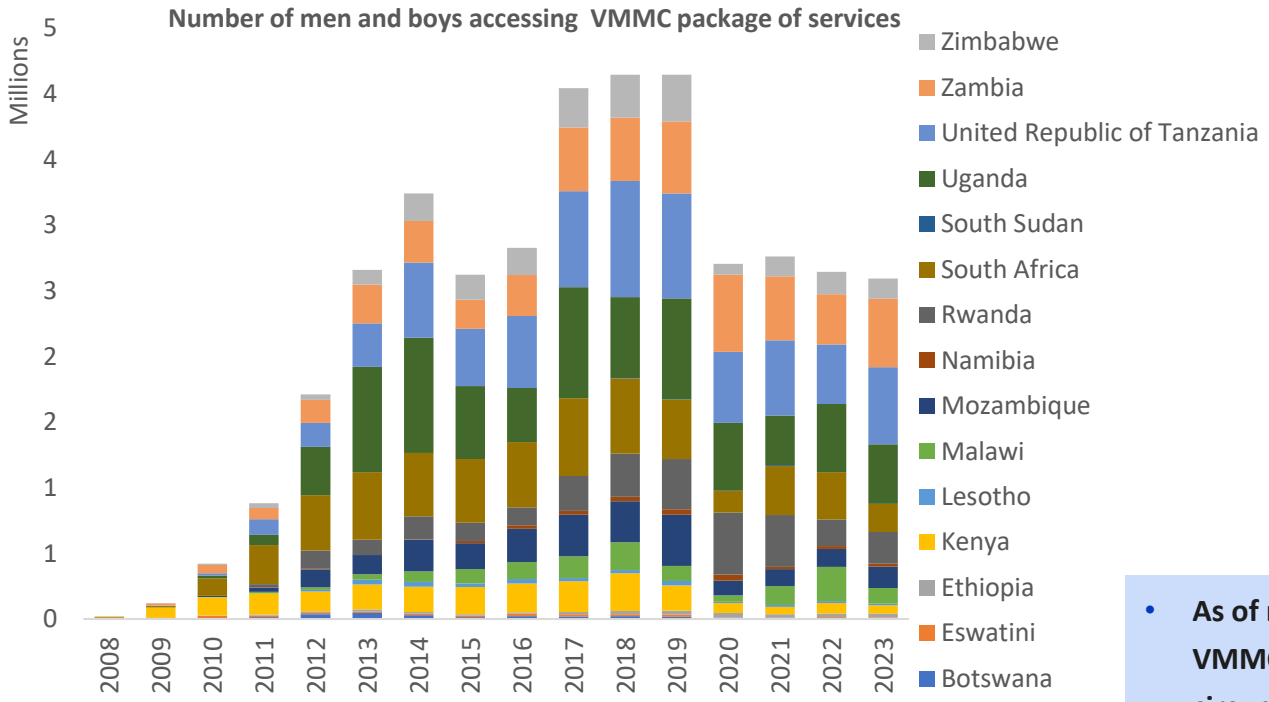
WHO updates framework: "A Framework for VMMC Effective HIV Prevention and a Gateway to Improved Adolescent Boys' and Men's Health in Eastern and Southern Africa by 2021".

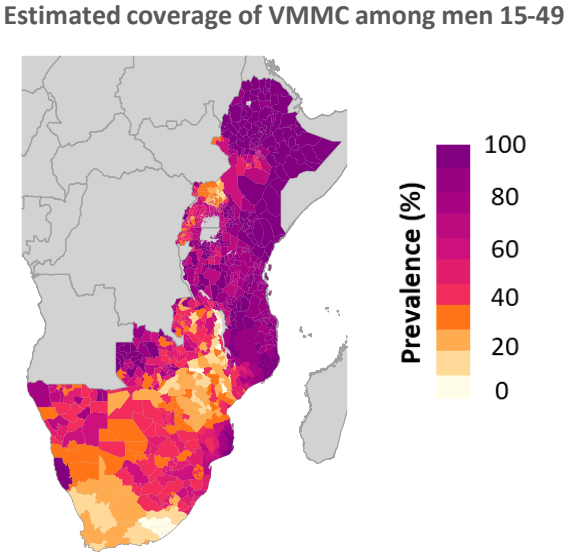
28 million VMMCs performed



Progress to date: increasing coverage…

37.5 million men and boys accessed VMMC package of services by 2023 - But VMMC, other prevention and treatment coverage for men & boys remains far from targets





- **As of most recent national surveys, nearly half of VMMC countries had reached at least 60% male circumcision coverage**
- **National and subnational gaps remain**

…but increasing need for VMMC

- **As the number of young people aged 15-24 years increases, efforts to provide HIV prevention services to meet their needs must be scaled up to meet the global targets for reducing new HIV infections**

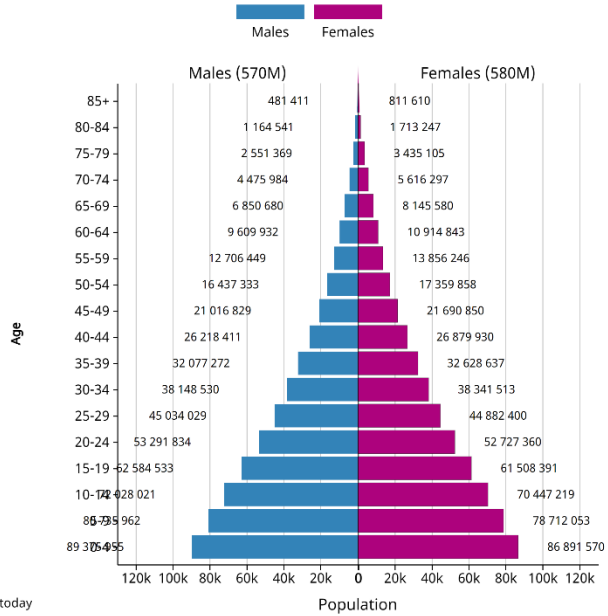
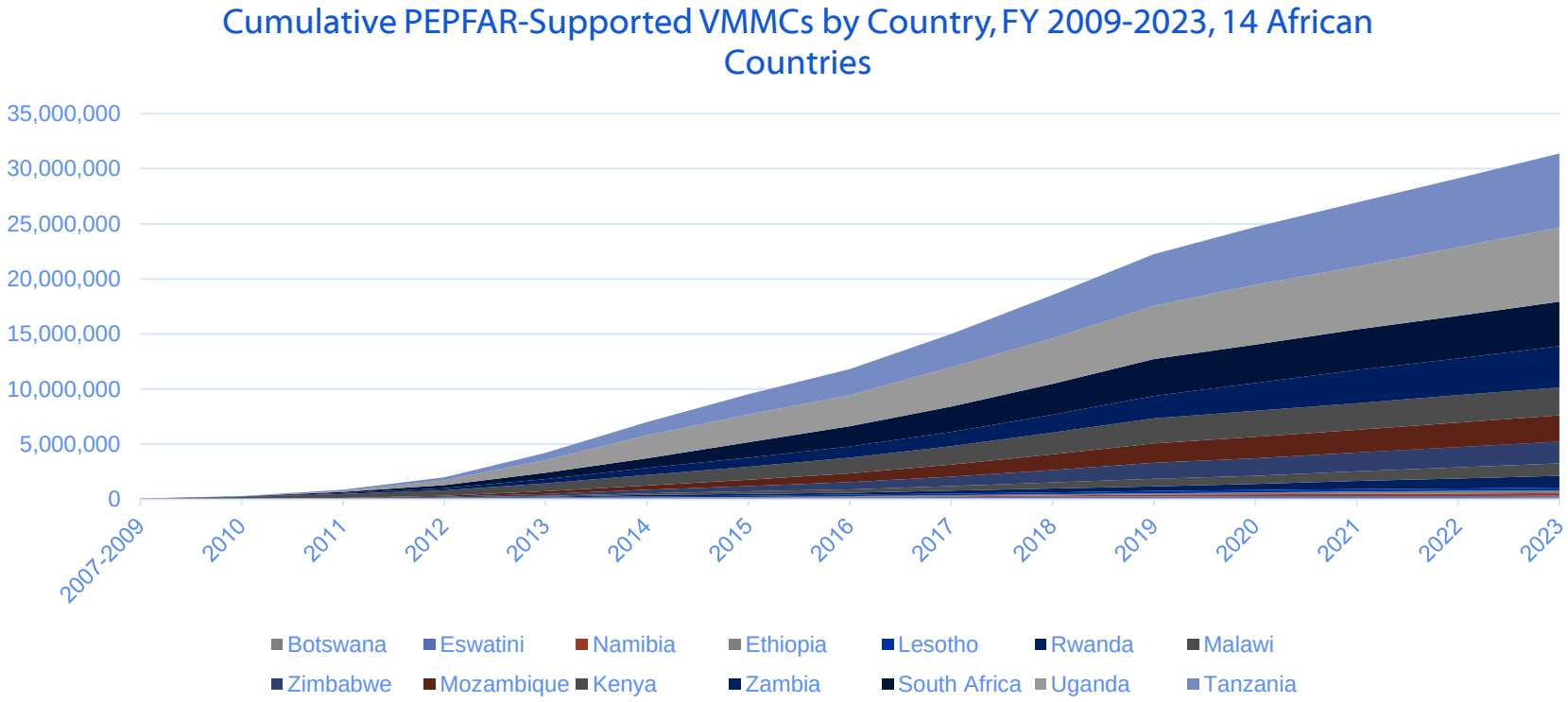
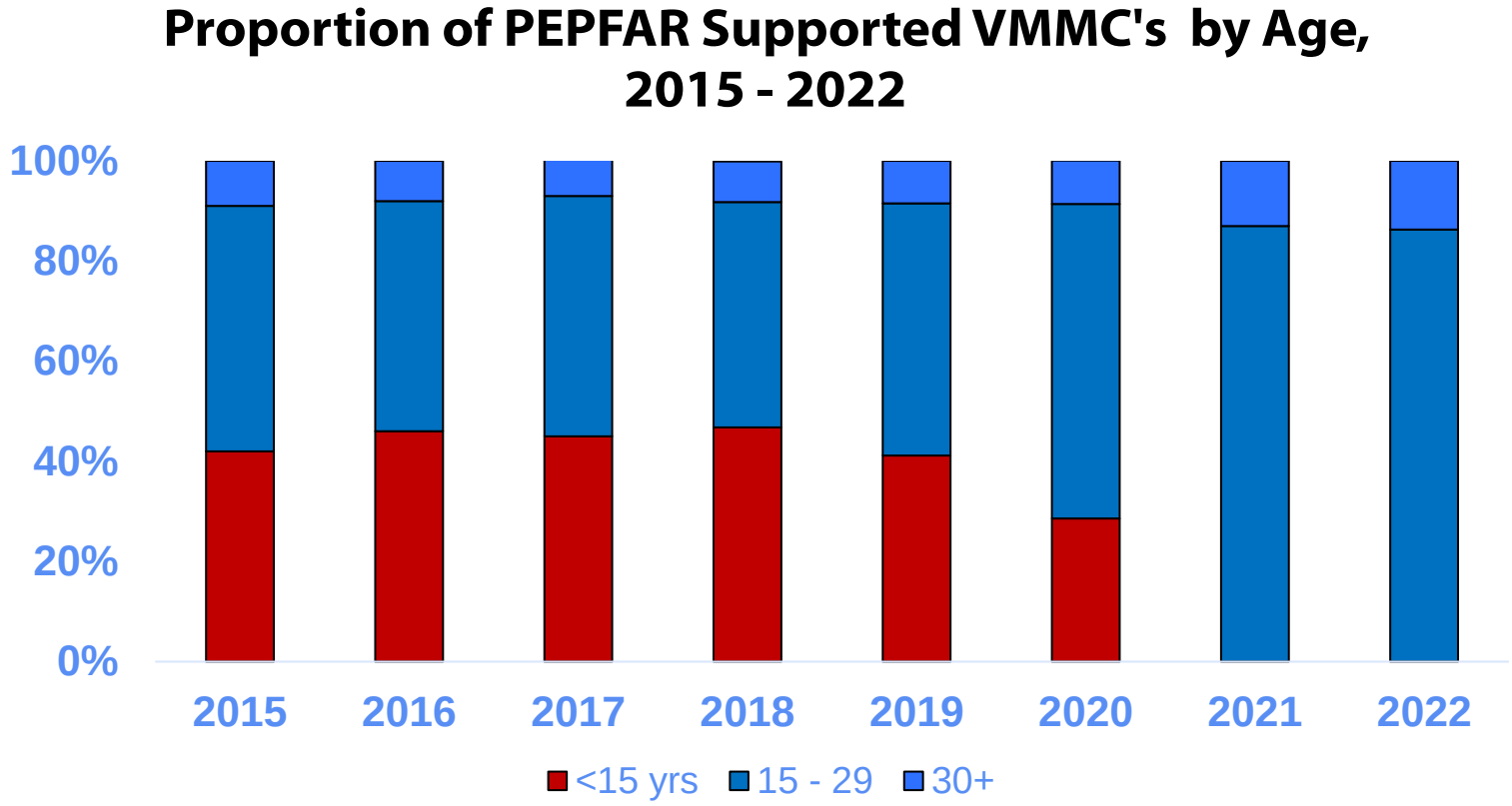


Image from gco.laarc.who.int/today

~33 million VMMCs supported by PEPFAR



Significant Shift in Age Profile of VMMC Clients



Aiming for Impact (1)

- **Initial modeling done around program launch found large cost savings from VMMC (vs. ART for prevented infections)**
  - e.g. $16.5B saved from a $1.5B investment
- **Advocacy led to funding allocation to reach coverage targets**

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Review

Voluntary Medical Male Circumcision: An Introduction to the Cost, Impact, and Challenges of Accelerated Scaling Up

Catherine Hankins[1]*, Steven Forsythe[2], Emmanuel Njeuhmeli[3]

1 Joint United Nations Programme on HIV/AIDS, Geneva, Switzerland, 2 Futures Institute, Glastonbury, Connecticut, United States of America, 3 United States Agency for International Development, Washington, District of Columbia, United States of America

Abstract: Scaling up voluntary medical male circumcision (VMMC) for HIV prevention is cost saving and creates fiscal space in the future that otherwise would have been encumbered by antiretroviral treatment costs. An investment of US$1,500,000,000 between 2011 and 2015 to achieve 80% coverage in 13 priority countries in southern and eastern Africa will result in net savings of US$16,500,000,000. Strong political leadership, country ownership, and stakeholder engagement, along with effective demand creation, community mobilisation, and human resource deployment, are essential. This collection of articles on determining the cost and impact of VMMC for HIV prevention signposts the way forward to scaling up VMMC service delivery safely and efficiently to reap individual- and population-level benefits.

southern Africa with settings of high HIV prevalence and low levels of male circumcision [12,13].

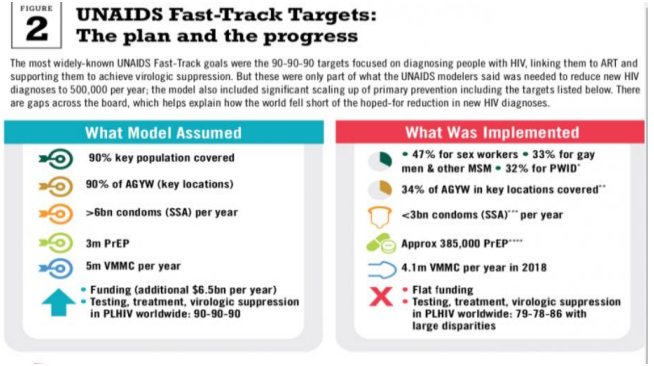
Male circumcision is the oldest and most common surgical procedure. With 30% of men globally and 67% of men in sub-Saharan Africa circumcised [14], social and cultural factors are the main determinants of acceptability [6,15–18]. In sub-Saharan Africa, male circumcision was found to be acceptable to men and women in non-circumcising communities if readily accessible and provided safely [18]. Mathematical modelling has shown that medical male circumcision is highly cost-effective, with costs to avert one HIV infection ranging from US$150 to US$900 using a ten-year time horizon, and one new HIV infection averted for every five to fifteen procedures performed [19].

Given these levels of acceptability, cost, and potential impact, VMMC provided by well-trained, well-equipped providers in hygienic settings should be scaled up rapidly in high HIV

Past Success, Present Gaps: VMMC targets, 2011 and today

Aiming for Impact (2) – it's (still) often more expensive not to do VMMC

- **Subsequent UNAIDS Fast Track aims revised global targets to support HIV incidence reduction goals**
- **2023 updates to account for ART and PrEP scaleup using 5 accepted models: VMMC remains cost-effective in almost all scenarios, and cost-saving in many, for at least the next 10 years**
- **Other models have found VMMC to have lower ("better") cost-benefit ratios than the other prevention packages modeled, and to be a 'best buy' compared with a wide range of health and non-health interventions**



› Lancet Glob Health. 2023 Feb;11(2):e244-e255. doi: 10.1016/S2214-109X(22)00515-0. Epub 2022 Dec 20.

Cost-effectiveness of voluntary medical male circumcision for HIV prevention across sub-Saharan Africa: results from five independent models

Loveleen Bansi-Matharu [1], Edinah Mudimu [2], Rowan Martin-Hughes [3], Matt Hamilton [4], Leigh Johnson [5], Debra Ten Brink [3], John Stover [6], Gesine Meyer-Rath [7], Sherrie L Kelly [3], Lise Jamieson [8], Valentina Cambiano [9], Andreas Jahn [10], Frances M Cowan [11], Collin Mangenah [11], Webster Mavhu [11], Thato Chidarikire [12], Carlos Toledo [13], Paul Revill [14], Maaya Sundaram [15], Karin Hatzold [16], Aisha Yansaneh [17], Tsitsi Apollo [18], Thoko Kalua [19], Owen Mugurungi [18], Valerian Kiggundu [17], Shufang Zhang [20], Rose Nyirenda [21], Andrew Phillips [9], Katharine Kripke [4], Anna Bershteyn [22]

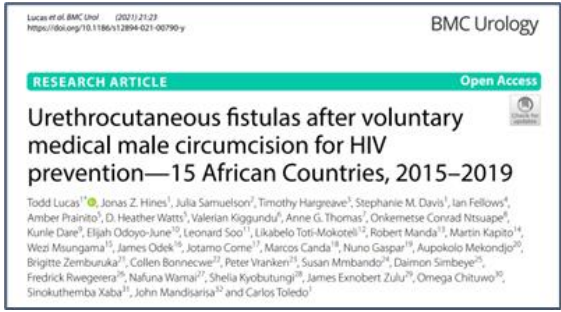
See slide notes for references.

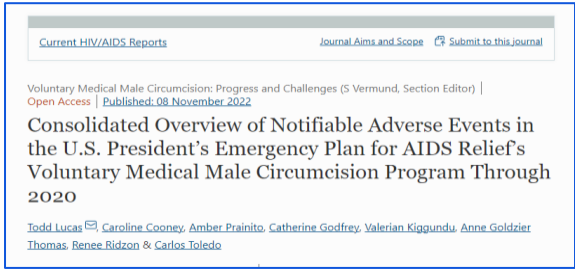
Prioritizing quality and safety: WHO and overall program

- **WHO established quality standards at the onset of the program**
- **Routine quality assurance and quality improvements assessments are program requirements**
  - In addition to procedure, standards include demand creation, M&E, site operations, etc.
- **Aim to establish culture of quality and safety**
  - AEs are expected to happen
  - Not reporting ≠ not having AEs
  - Minimize number and severity by constant quality improvement

Prioritizing quality and safety: PEPFAR

- In 2015, PEPFAR established the Notifiable Adverse Events Reporting System (NAERS)
- First of its kind, surveillance system to identify safety signals
- Routinely report a subset of adverse events
- Review/consultation to understand identify areas for program improvement
- Purposely disseminate information for transparency and emphasize culture of quality



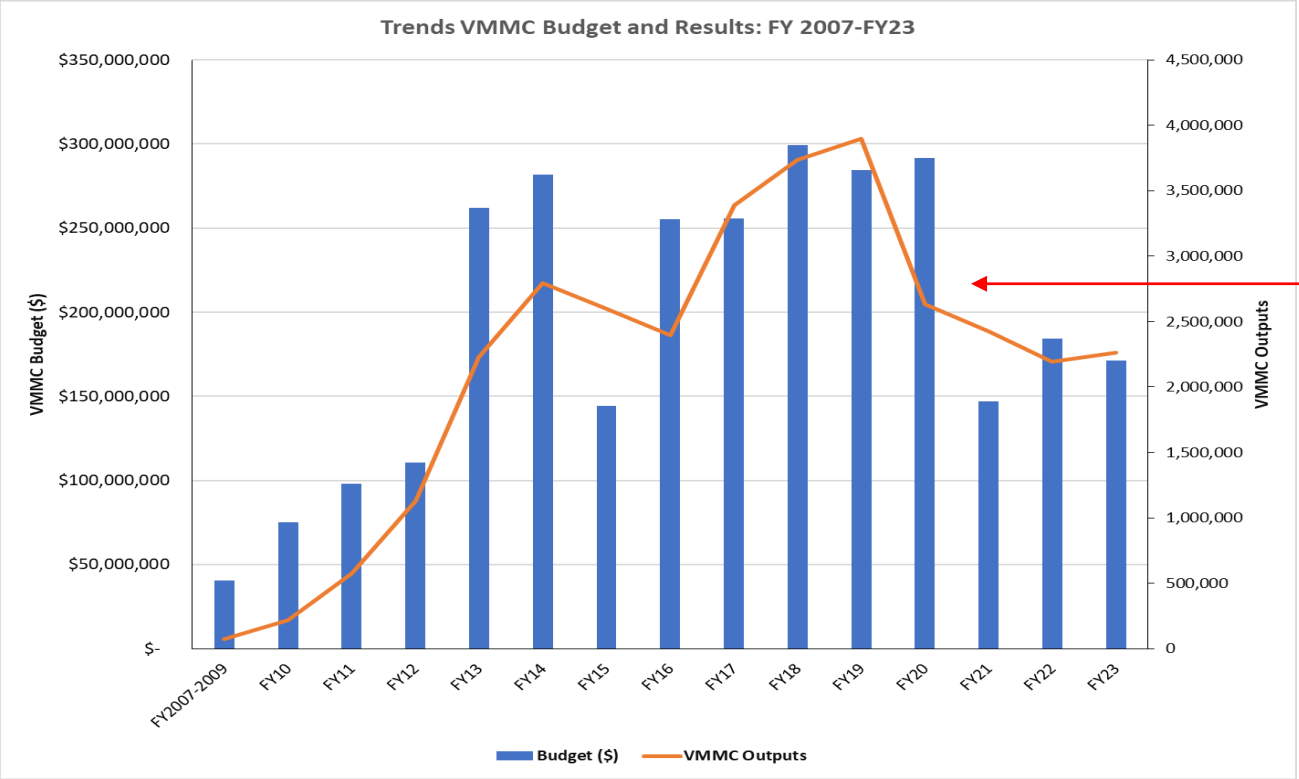


Challenges, past and present

Past: Demand Creation - Persuading Males

- **Strength and weakness of the program from the outset**
- **Poor initial evidence base to inform demand creation**
- **Psychology, behavioral economics, commercial marketing disciplines have increased our understanding of male behavior, helping to:**
  - (1) segment population across a number of socioeconomic and “psychographic” variables
  - (2) identify each segment’s path to VMMC – demand creation as a journey, not a single event

Present: Annual VMMCs and funding have declined



>$3 billion since 2007

~ 50% VMMC funding cut

Lessons Learned

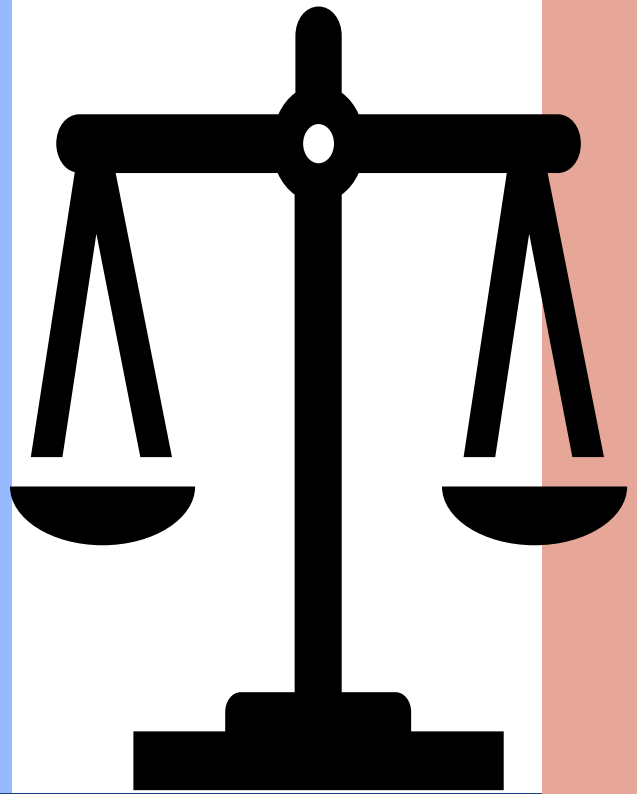
Lessons learned and programmatic improvements from NAERS

NAE Type	Lesson(s) Learned
Infection	• Potential for serious necrotizing infection and a need for improved guidance on early diagnosis and management. • Increased emphasis on infection prevention and control including additional resources on prevention and management of surgical site infections
Tetanus	• Tetanus associated with application of traditional remedies to the surgical wound necessitating improved wound care education • Increased tetanus risk with elastic collar compression devices led to recommendation not to use such devices without documented appropriate vaccination
Bleeding	• Need for improved screening for bleeding risk • All episodes of post-operative bleeding should have close follow up and a second episode of post-operative bleeding should trigger referral • Due to the familial nature of Hemophilia A, providers advised not to perform VMMC on the brothers and cousins related through maternal aunts of clients with a bleeding disorder without proper preoperative evaluation.
Penile Injury	• Increased risk with forceps-guided technique in clients <15 and guidance for dorsal slit technique in this population • Age <15. increased risk of fistula, generated hypotheses on mechanisms of injury and interventions to minimize risk • Increased risk of penile injury in young adolescents prompted policy change to increase minimum age of eligibility to 15 years

Lessons learned: art and science of demand creation needs supply and demand-focused interventions

Supply

- Making services available closer to clients (e.g., mobile services, roving teams, make-shift sites)
- Focus on providers (one size does not fit all)
- Differentiation of services (young men vs. 30+; VIP)
- Focus on quality
- Men's health services



Demand

- 1:1 mobilization (one size does not fit all)
- Incentivizing mobilization
- Involving community leaders and gatekeepers
- Campaigns
- Using female partners
- Incentives
- Use of sports
- "Selling" other aspects of VMMC beyond HIV prevention (e.g., STIs)
- Digital tools for innovation

Implications for new and emerging HIV prevention strategies

Data to inform targets, advocacy and funding

Art & science of demand creation

Prioritizing quality and safety

Pillar	Indicator		Benchmark in line with 2025 targets	2021 reporting
Key populations	Percentage who received at least two HIV prevention interventions in the past three months	Sex workers	90%	63%
		Gay men and other men who have sex with men	90%	49%
		People who inject drugs	90%	36%
Young women	Locations with moderate and high HIV incidence with a programme for adolescent girls & young women		90%	41%
	Condom use with non-regular partners among young women 15–24		80%[1]	48%
Boys and men	Annual number of voluntary medical male circumcisions		5 million	2.8 million
Condoms	Condom use with non-regular partners among men aged 15–49		80%	61%
ARV-based prevention	Percentage of all people living with HIV on antiretroviral treatment		90%	72%
	Number of people who used PrEP at least once in 2021		10.6 million	1.5 million

Source: GPC 2022 scorecards. Note: Percentages are for 28 initial GPC focus countries and are only shown for indicators, for which values were available for at least 50% of the initial GPC focus countries. The first four indicators are based on a special analysis for the GPC scorecard. Absolute numbers for VMMC are for 15 VMMC focus countries, whereas numbers for PrEP for all countries globally.

What comes next?

What comes next?

- **Continued scale up in nearly all countries with some reaching high levels of MC coverage (nationally or in specific SNUs); but gaps remain**
- **Modeling confirms that VMMC continues to be cost-effective and -saving**
  - Without a **highly-effective, durable vaccine**, difficult to imagine a prevention intervention with comparable impact
- **Men now have additional HIV prevention options**
- **Declining VMMC funding threatens to reverse previous gains**
- **Success of the program has also meant lack of attention**
- **Sustaining VMMC services, will take more than resources (e.g., leadership, capacity, demand, integration into broader health network [and others])**

Sustainability: still in process, but some gains

- **Sustainability of overall HIV response: each donor-supported VMMC done now permanently decreases the cost of the entire response in future**
- In the 2022 WHO VMMC sustainability landscape report, **most countries self-scored intermediate *(yellow, bottom right)*** in most areas
- **Key next step is integration into national health services: VMMC led, supervised and done by national providers, and offering men other key services**

Country	Finance	Leadership	Service Delivery	Strategic Information	Supplies	Workforce
Botswana	Intermediate	Intermediate	Intermediate	Intermediate	Advanced	Intermediate
Ethiopia	Intermediate	Intermediate	Intermediate	Intermediate	Advanced	Intermediate
Eswatini	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
Kenya	Early	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
Lesotho	Intermediate	Intermediate	Intermediate	Intermediate	Advanced	Intermediate
Malawi	Early	Intermediate	Intermediate	Intermediate	Intermediate	Early
Mozambique	Early	Intermediate	Advanced	Intermediate	Advanced	Advanced
Namibia	Intermediate	Advanced	Intermediate	Advanced	Advanced	Intermediate
Rwanda	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
South Africa	Advanced	Advanced	Intermediate	Intermediate	Advanced	Advanced
South Sudan	Early	Early	Early	Early	Early	Early
Tanzania	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
Uganda	Intermediate	Intermediate	Intermediate	Intermediate	not submitted	Early
Zambia	Intermediate	Advanced	Advanced	Intermediate	Intermediate	Intermediate
Zimbabwe	Early	Intermediate	Intermediate	Intermediate	Advanced	Intermediate

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  - Jason Reed
- **UNAIDS**
- **WHO**
- **AVAC**
- **Global Prevention Coalition**
- **Bill and Melinda Gates Foundation**
- **HIV Modeling Consortium**
- **15 Country Programs**
  - MOH
  - USG
  - Global Fund
  - Implementing Partners
- **The 33+ million men who accessed VMMC**

Thank You! / Disclaimer

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