

Switching from the Forceps-Guided to the Dorsal Slit Technique in a Voluntary Medical Male Circumcision Program: Experience from Tanzania

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Background—Surgical Male Circumcision Techniques

- Prior to 2014 in Tanzania, the forceps-guided (FG) technique was the main conventional surgical method used in scaling up the voluntary medical male circumcision (VMMC) program.
 - FG technique was efficient compared to other male circumcision (MC) techniques.
- In July 2014, the World Health Organization (WHO) recommended discontinuation of the FG technique in adolescents with immature penile anatomy due to an inherent risk of glans injury.
- In August 2014, the AIDSFree Project in Tanzania (funded by the United States Agency for International Development through the U.S. President's Emergency Plan for AIDS Relief) stopped using the FG technique in males aged less than 15 years.
 - Gradually, AIDSFree phased out the use of the FG technique in all MC clients.
 - AIDSFree held refresher training events for all providers so that they could competently perform MCs using the dorsal slit (DS) technique that did not pose an inherent risk of glans injury.
- The study team analyzed the impact of this technique change on MC data and in the adverse events (AEs) reported.

How Glans Injury Occurs in an Immature Penis

- Across East and Southern Africa, the majority of clients reached by VMMC programs have been aged 10–19 years.
- Clients younger than 15 are likely to have immature penile anatomy because sexual maturity has not occurred.
- FG technique does not permit providers to visualize the glans and in males with immature anatomy, it is difficult to palpate the glans to guide placement of the long artery forceps.
- This inability to palpate poses a greater risk of unintentionally grasping the glans in the forceps and causing injury during MC, even when the procedure is done by experienced providers (see Figure 1).



Figure 1. Comparison of surgical male circumcision methods

METHOD	ADVANTAGES	DISADVANTAGES
Forceps-guided	<ul style="list-style-type: none"> Quick to learn Faster than other methods of conventional surgery 	<ul style="list-style-type: none"> Leaves a wider (approximately 1.5 cm) cuff of mucosal skin proximal to the corona Glans not visualized during surgery Should not be used in adolescent boys under 15 years of age or any male who has adhesions—or any male whose tip of the glans cannot be clearly identified by palpating the foreskin—because of difficulty identifying the glans and the risk of glans amputation
Dorsal slit	<ul style="list-style-type: none"> Used for medical reasons, such as phimosis Glans visualized during surgery Excellent cosmetic outcome 	<ul style="list-style-type: none"> Slower to do and longer to teach than forceps-guided Small risk of urethral meatus injury
Sleeve resection	<ul style="list-style-type: none"> Minimizes risk of removing too much or too little skin because incisions on external and inner (mucosal) layers of the foreskin are marked Can be almost bloodless Glans well visualized 	<ul style="list-style-type: none"> Slower and more technical than other methods Longer to teach

VMMC Program in Tanzania

- From US fiscal year (FY) 2010 to US FY 2016, 576,065 MCs were performed—281,110 (48.7%) of which were performed in clients aged 10–14 years.
- Out of 576,065 clients, 433,887 (75.3%) returned for at least one follow-up visit within 14 days of the procedure.
- Out of all the clients who came back for a follow-up visit, 790 moderate and severe AEs were reported (overall AE rate = 0.18%).
- Three glans injuries have been reported since 2014.



Male circumcision procedure. Photo by Jhpiego Tanzania.

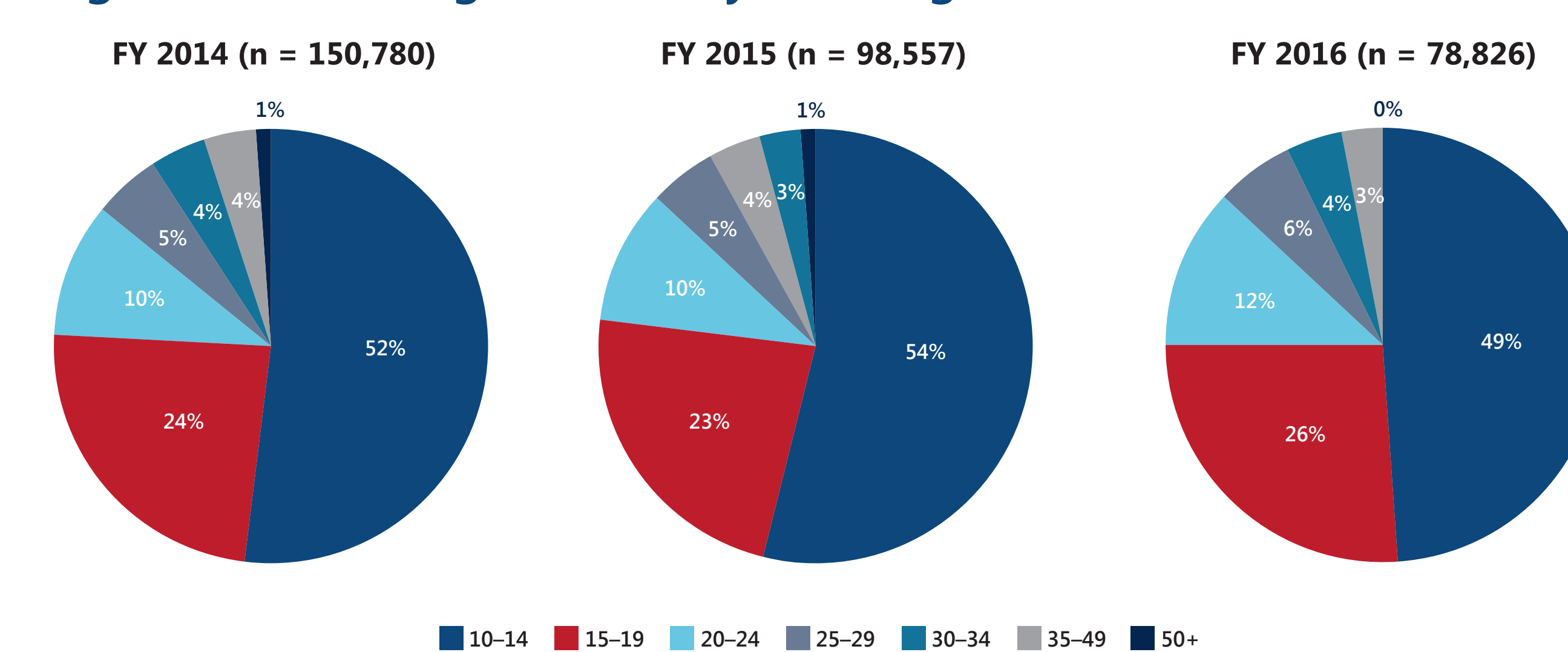
Analysis of MC Data, by Technique and AEs

- The project examined deidentified MC client-level data collected from US FY 2014 through US FY 2016.
- The project analyzed the data according to the following:
 - MC method used
 - Age distribution of clients reached, by US FY
 - AEs that occurred during or following the procedure

Results

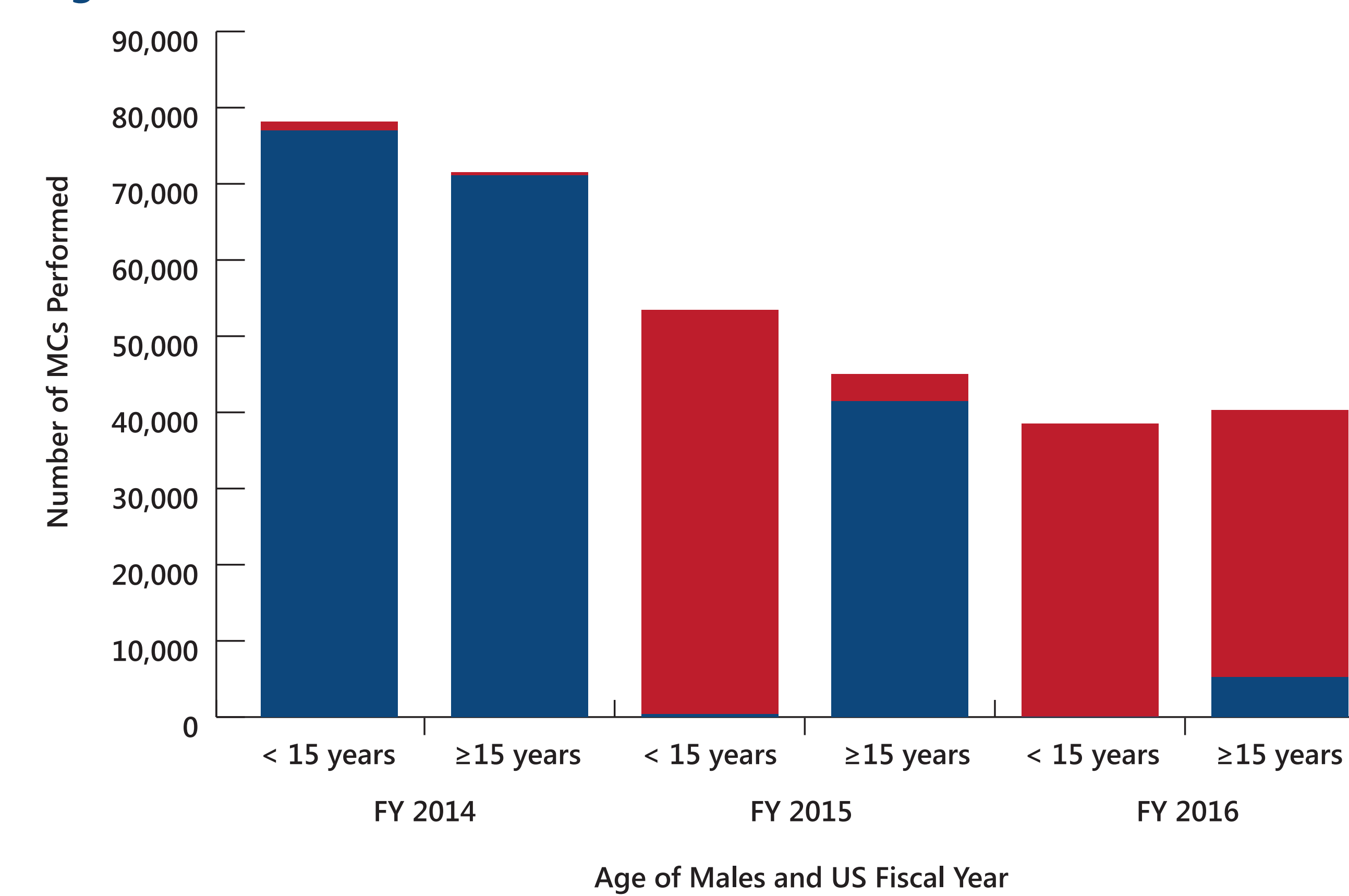
- Throughout the analysis period, the proportion of clients aged 10–14 years was about 50% (see Figure 2).
- Beginning in US FY 2015, DS technique was used only in clients aged less than 15 years; by US FY 2016, DS technique was being used in majority of clients (all ages) (see Figure 3).
- The moderate and severe AE rate also declined across the analysis period (see Table 1 and Figure 4).
- Low AE rates may be partially attributed to underreporting by providers (see Table 1 and Figure 4).
- Reported instances of glans injuries also declined over the same period (see Table 1).

Figure 2. Percentage of MCs by client age, US FY 2014–2016



Notes: fiscal year (FY), male circumcision (MC)

Figure 3. Number of MCs by conventional surgical technique and age for US FY 2014–US FY 2016



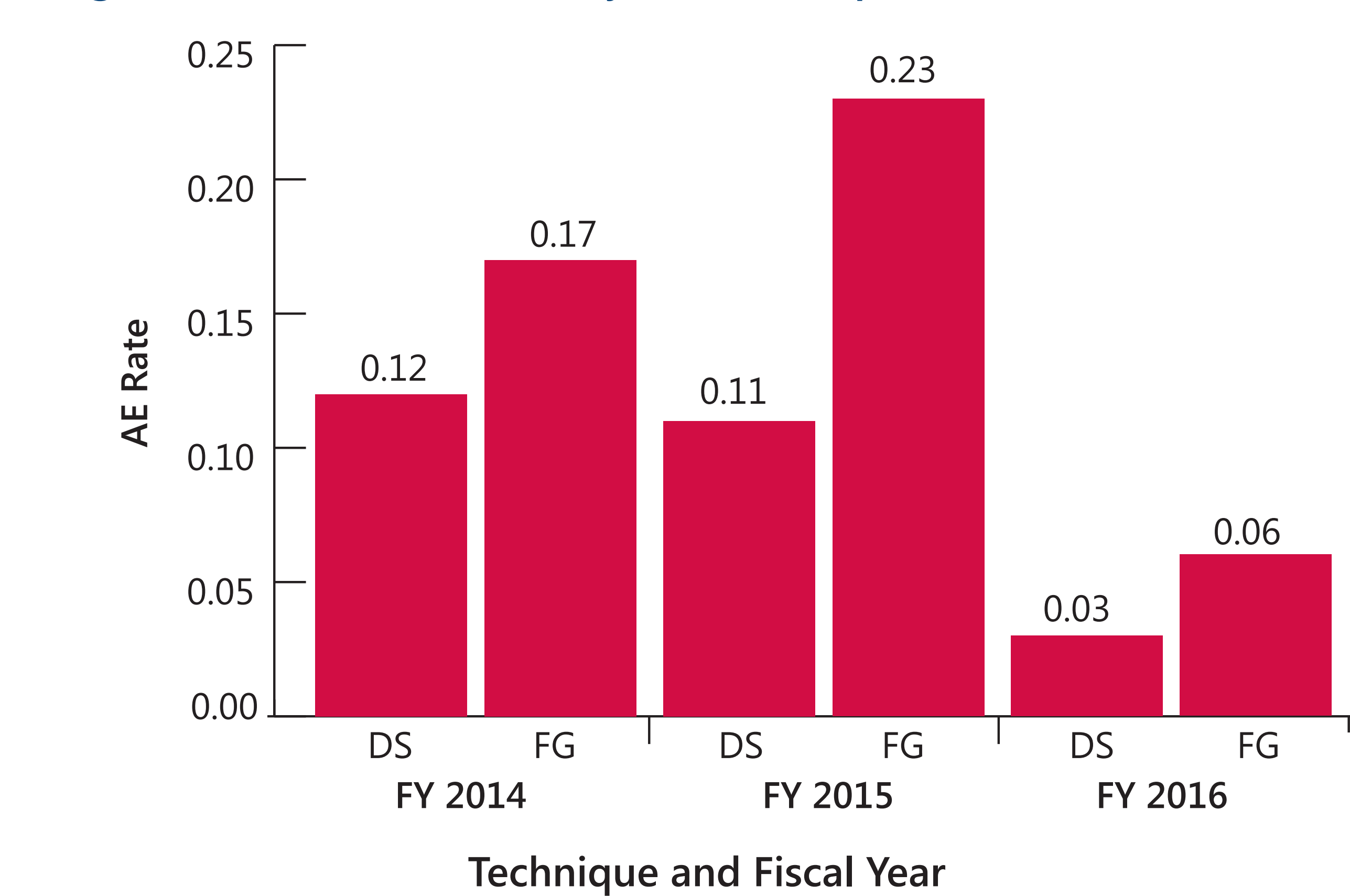
Notes: fiscal year (FY), male circumcision (MC)

Table 1. MC data by US FY 2014–US FY 2016

MC Data	US Fiscal Year		
	US FY 2014	US FY 2015	US FY 2016
MCs performed	150,780	98,557	78,826
Clients returning for at least one follow-up visit	124,320	80,064	67,934
Moderate and severe AEs	238	158	20
AE rate	0.19%	0.20%	0.03%
Number of glans injuries	2	1	0

Notes: adverse event (AE), fiscal year (FY), male circumcision (MC)

Figure 4. Trend in AE rates by MC technique, US FY 2014–US FY 2016



Notes: adverse event (AE), dorsal slit (DS), fiscal year (FY), forceps-guided (FG), male circumcision (MC)

Conclusions

- In response to WHO's 2014 guidelines, AIDSFree Tanzania has successfully transitioned from using the FG to the DS surgical circumcision technique.
- MC data demonstrate that with proper training, it is possible to safely and completely change the surgical technique to improve the safety of the MC procedure—without disrupting performance.
- The reported number of AEs continued to decline over time, demonstrating an increasing safety in and higher quality of the VMMC services provided.
- In April 2018, the Ministry of Health, Community Development, Gender, Elderly and Children recommended that all MC providers stop using the FG technique in Tanzania and updated the national VMMC guideline and training package.

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