USING DATA TO IMPROVE QUALITY AND OUTCOMES OF VOLUNTARY MEDICAL MALE CIRCUMCISION SERVICES IN TANZANIA

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Kija Nyalali, Renatus Kidugo, Shangwe Kimath, Paul Mwakipesile, Pastory Sekule, Lucy Mphuru, Shawn Aldridge, Anne Fitzgerald Vinluan

CONTEXT

Male circumcision confers a significant level of protection against heterosexual HIV acquisition among men. Since 2009, voluntary medical male circumcision (VMMC) has been a key HIV prevention intervention in Tanzania, which has a generalized HIV epidemic. IntraHealth International and its partners Tanzania Youth Alliance (TAYOA) and Afya *Plus* are implementing Tohara Plus, a five-year (2016-2021) project funded by the President's Emergency Plan for AIDS Relief (PEPFAR) through the Centers for Disease Control and Prevention (CDC) to support the Ministry of Health, Community Development, Gender, Elderly and Children (MOHCDGEC)/National AIDS Control Program (NACP) and President's Office Regional Administration and Local Government (PORALG) to accelerate scale-up of a comprehensive package of optimum quality, safe VMMC services among adolescents and adult men in 26 subnational units (SNUs) in Mara, Mwanza, Shinyanga, and Simiyu regions.

Since the onset of the VMMC program in 2009 until 2012, performance monitoring and reporting relied on hard copies of monthly summary report forms manually aggregated and submitted from health facilities to councils. Copies were also submitted to IntraHealth where they were extracted and maintained in an Excel database. At the end of every quarter, information from the Excel database was aggregated for reporting into PROMIS (PEPFAR Records Organizations Management Information) and later into DATIM (Data for Accountability, Transparency, and Impact).

In 2013, the MOHCDGEC completed the nationwide rollout of the district health information system (DHIS2) with VMMC data entry screens and reports included. However, when Tohara Plus launched in 2016, VMMC reporting rates into the national DHIS2 were still very low, ranging between 0.6% and 47% in the four supported regions. Additionally, in Fiscal Year (FY) 2016 a notable discrepancy was reported between the data submitted by partners into PROMIS/DATIM and those submitted to UNAIDS by the MOHCDGEC.

Reasons for these discrepancies included limited number of trained personnel with knowledge and skills on data collection and reporting for VMMC data sets in DHIS2, limited number of computers for site-level direct reporting, lack of data review and validation mechanisms, and absence of VMMC elements in the regional supportive supervision checklist. These factors resulted in missing facility records, incomplete and inconsistent data entries, and limited use of VMMC data for informing decision-making.

IntraHealth therefore mapped out and implemented a three-phased range of interventions to help the supported regions, districts, and health facilities address these gaps.

OUR APPROACH

Planning phase: As part of the project entry/ planning phase, entry meetings were conducted with relevant stakeholders like regional and council health management teams (R/CHMTs) and health facilities to set up intervention strategies and workplans; and engage the national VMMC trainers and monitoring and evaluation (M&E) managers/ officers from the NACP to harness their buy-in and to support the implementation process.

Intensive implementation phase: Through a series of consultative meetings, the national health management information system (HMIS) tools were reviewed and updated. The project's M&E team worked directly with NACP, R/CHMTs, and health facilities to ensure all the necessary tools and skills were made available. This phase involved the rollout of various activities as per developed workplans.

To address the problem of missing facility records IntraHealth supported printing and distribution to 82 static sites of client cards, service registers, theatre registers, monthly summary report forms, HIV testing services registers and reporting forms;

procurement and distribution of computers; and procurement, distribution, and installation of data storage facilities. During this phase, the project also procured and presented desktop computers to the supported health facilities to facilitate effective data capturing, analysis, dissemination, and storage.

To strengthen the capacity of regions, councils, and health facilities to collect and report high quality data and use them to inform timely program decisions, from October 2016 the project supported training, refresher training, and mentorship for all regional and council HMIS focal persons, AIDS control coordinators and a minimum of two VMMC providers (one of them being the site manager) from all supported health facilities. IntraHealth liaised with master trainers from the University of Dar es Salaam who trained 158 HMIS focal persons at regional, district, and facility levels on data collection, data entry, data validation and reporting, using both hard copies and the national DHIS2. Additionally, the R/CHMTs were also trained in health facility data quality assessment and tracking of performance/results and changes occurring within DHIS2.

Further, IntraHealth supported training and mentorship of at least two health workers from each of the 82 supported health facilities on procurement of national HMIS tools and designated computers for handling VMMC activities, with hard discs for data back-up.

IntraHealth customized the web-based DHIS2 Touch app to support daily reporting of key performance indicators including number of clients circumcised, adverse events, and HIV-positive clients newly identified and linked to care and treatment centers. DHIS2 Touch can be linked with DHIS2 for a direct feed and works well with Android smart phones; the project HMIS focal person worked with the R/CHMT focal persons to install this app

in project computers, tablets, and PDAs. As the sites continued with reporting of aggregated daily data, most of the site managers and outreach team leads requested the app to be installed in their own mobile phones for convenience of data entry. Using DHIS2 Touch increased the reporting rate, timeliness of reporting, and use of data for programmatic decision-making.

IntraHealth established virtual platforms using WhatsApp group chats to enhance "up to the minute" communication at regional, council, and facility levels. These groups constituted R/CHMT members, national, regional and SNU-level trainers of trainers, and service providers. Daily performance reports from the DHIS2 Touch app were discussed and decisions for improvement with milestones agreed on and collectively monitored.

Sustainability phase: To ensure continued regular data quality reviews and verification are conducted from all static sites before data entry in the national DHIS2, IntraHealth also identified and mentored 36 data champions. These are trained VMMC providers who are employed at high-yield sites, have demonstrated interest and are competent with data management within their sites, and are readily available to support other sites. Data champions were assigned to support three to six static sites depending on client flow. Data champions are supported with transport costs to enable them to visit and provide mentorship to the allocated health facilities neighboring their workplace. These champions also acted as seeds for identifying more champions with the intent to have one per each of the supported sites. During monthly site visits the data champions conduct thorough data review and validation comparing what had been reported on daily reports via DHIS2 Touch, summary monthly forms, and client-level source documents for all indicators. In cases where sites have not yet compiled monthly reports and data entry into the national DHIS2 the data champions provide hands-on mentorship to ensure all sites report correctly in a timely manner.

WHAT WORKED

A total of 158 regional, district, and facility level personnel were trained on the use of the national HMIS tools for data capture, analysis, and use of national DHIS2 and are working together to effectively capture VMMC data at facilities, and to analyze and use captured data to improve performance and health outcomes. All 863 VMMC

providers were trained on VMMC data capturing, storage, and reporting as part of basic VMMC training.

IntraHealth data management and M&E system data has improved the overall quality of VMMC data. The project's supported health facilities saw:

- Increased completeness of reporting (Table 1).
- Increased timeliness of reporting (Table 2).
- A total of 36 data champions mentored to support 82 static sites to build the capacity of more health workers contributing to a stronger HMIS.
- Regular review and validation of health service data institutionalized at the facility and council level. Work improvement teams (WITs) handle strongly integrated M&E interventions as part of continuous quality improvement (CQI) activities. WITs now meet every month to discuss CQI-related issues including performance monitoring and data use.
- All 82 supported health facilities with very organized data management systems and data storage rooms or steel trunks to maintain safety of old data, identify issues or errors therein, and clean up the data before completing and reporting them into the national DHIS2.
- Regular data quality assessments (DQAs) to measure changes in the data quality system with 100% of the supported health facilities recording improvement in their last DQA scores in data availability, consistency, and validity conducted in July 2021.
- The positive outcomes of the HMIS intervention at supported health facilities influencing routine data reporting and use. This prompted a rapid

Table 1: Increased completeness of reporting (2017 and 2021)

Region	Baseline	End of project
Mara	0.6%	100%
Mwanza	22%	100%
Shinyanga	47%	100%
Simiyu	44%	100%

Table 2: Increased timeliness of reporting (2017 and 2021)

Region	Baseline	End of project
Mara	0.6%	100%
Mwanza	13.3%	100%
Shinyanga	41.4%	100%
Simiyu	36.7%	100%

Table 3: VMMC targets vs. performance (FY2017-2021Q3)

Period	Targets	Males circumcised #	%	Adverse events	Follow up ≤14 days
FY 2017	256,529	225,093	88%	0.02%	201,111 (89%)
FY 2018	320,509	305,718	95%	0.17%	289,735 (95%)
FY 2019	400,556	453,089	113%	0.11%	438,452 (97%)
FY 2020	159,146	186,014	117%	0.07%	184,215 (99%)
FY 2021	235,936	181,000 *(Q1-Q3)*	77%	0.02%	180,056 (99%)

acceleration of VMMC services in the supported regions across the project lifespan. As of June 31, 2021, a total of 1,350,914 men had been circumcised through Tohara Plus, more than any other partner in Tanzania (Table 3). This is estimated to have averted 16,887 new HIV infections.

- Post-circumcision follow-up rates remaining very high at 99% and adverse event rates very low at 0.02%

- About 99% of all identified HIV-positive clients successfully enrolled into care.

LESSONS LEARNED

The support provided by IntraHealth through VMMC M&E and HMIS interventions in Mara, Mwanza, Shinyanga, and Simiyu regions demonstrated remarkable improvement in the capacity of HMIS structures to effectively capture, analyze, and use data for decision-making.

There is need to ensure many trained personnel at regional, district, and facility levels with the necessary skills required to implement a responsive M&E and HMIS using the current technologies like DHIS2 Touch to capture, record and report service delivery data for routine monitoring of performance and use of data for decision-making.

Regular review, validation, and use of service delivery data increases efficiency. Projects need to adapt the use of low-cost data champions to visit supported sites and mentor service providers every month. Data review should be integrated into council level monthly and quarterly data review

meetings to ensure the quality of data submitted by health facilities is maintained. The supported district councils and health facilities now have the dedicated HMIS focal persons and data storage equipment to holistically look at the data and identify issues or errors.

Cross-pollination of innovations across health facilities is very important to mobilize and motivate health workers and their managers to increase efforts toward achieving the set targets. During this COVID-19 era, use of virtual platforms such as WhatsApp, Teams and Zoom has been important for conducting performance monitoring and pause and reflect sessions to increase efficiency.

NEXT STEPS AND RECOMMENDATIONS

It is expected that the supported regions will leverage and sustain these achievements for VMMC scale-up to apply to other health interventions across health facilities, particularly leveraging the availability of a pool of trainers of trainers and data champions. Additionally, the MOHCDGEC/NACP can leverage these resources, especially integration of DHIS2 Touch to collect service delivery data in real-time and extend training and mentorship to all health facilities.

Facility-wide quality improvement teams should institutionalize the use of data champions to provide support and mentorship to other health workers in poor performing sites. Continuous supportive supervision and mentoring of health records personnel should also be prioritized. IntraHealth recommends the adoption (or adaptation) of the HMIS support approach to address similar challenges. As shown here, with support from MOHCDGEC, these efforts will no doubt lead to the overarching goal of improved health outcomes from VMMC.

CONTACT

Dr. Lucy Mphuru
Country Director, Tanzania
Program Lead, VMMC Project
lmphuru@intrahealth.org

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