

The Linking Initiatives for Elimination of Pediatric HIV (LIFE) Program

END OF PROJECT REPORT | 2012-2016



The production of this program brief was made possible through support from the U.S. Agency for International Development (USAID) through the U.S. President's Emergency Plan for AIDS Relief. The contents of this brief do not necessarily reflect the views or policy of USAID.



Cover photo: Nigel Barker/EGPAF, 2009
Unless stated otherwise, all photos: Daniel Hayduk/EGPAF, 2016

Table of Contents

Acronyms	4
Executive Summary	6
Current State of HIV in Tanzania.....	8
EGPAF-Tanzania	10
EGPAF-supported Approaches.....	11
LIFE	12
Goal and Objectives.....	14
LIFE Results by Objectives.....	15
OBJECTIVE 1: Comprehensive HIV and RCH Services.....	16
OBJECTIVE 2: Strengthened Linkages, Referral Networks, and Community-based Services to Ensure a Continuum of Care	30
OBJECTIVE 3: Sustainability of Health Systems and Transfer of Capacity to Local Partners	32
Key Challenges and Recommendations	40
Challenges.....	41
Recommendations	41
References	42

Acronyms

AGPAHI	Ariel Glaser Pediatric AIDS and Healthcare Initiative
ANC	antenatal care
ART	antiretroviral therapy
ARV	antiretroviral
CDC	U.S. Centers for Disease Control and Prevention
CHMT	Council Health Management Team
CHW	community health worker
CQI	continuous quality improvement
CTC	HIV care and treatment clinic
DBS	dried blood spot
DQA	data quality assurance
EGPAF	Elizabeth Glaser Pediatric AIDS Foundation
EID	early infant diagnosis
FP	family planning
HBC	home-based care
HEI	HIV-exposed infants
L&D	labor and delivery

MNCH	maternal, neonatal, and child health
MOHCDGEC	Ministry of Health, Community Development, Gender, Elderly, and Children
MSG	mothers' support group
NGO	nongovernment organization
PCR	polymerase chain reaction
PEPFAR	U.S. President's Emergency Plan for AIDS Relief
PHFS	Partnership for HIV-Free Survival
PLHIV	people living with HIV
PMTCT	prevention of mother-to-child HIV transmission
PNC	postnatal care
QI	quality improvement
RCH	reproductive and child health
RHMT	Regional Health Management Team
TB	tuberculosis
TRCS	Tanzania Red Cross Society
USAID	U.S. Agency for International Development
VIA	visual inspection with acetic acid
WHO	World Health Organization

Executive Summary



The Elizabeth Glaser Pediatric AIDS Foundation (EGPAF) is a nonprofit organization which strives to eliminate pediatric HIV and AIDS worldwide through implementation of comprehensive HIV and health programs, research aimed to bring promising practices in eliminating the epidemic to scale, and implementation of supportive health policies. In Tanzania, EGPAF has been working hand-in-hand with local leaders and implementing partners to address the HIV and AIDS epidemic since 2003.

With support from the United States Agency for International Development (USAID), EGPAF implemented a five-year project in ten regions of Tanzania mainland and on Zanzibar. This project, entitled Linking Initiatives for Elimination of Pediatric HIV (LIFE) program, began in 2012 and ran through 2016. The overall goal was to contribute to the virtual elimination of pediatric HIV in Tanzania by implementing a comprehensive prevention of mother-to-child HIV transmission (PMTCT) program, applying a model of integrated care and strengthening local capacity to respond to the epidemic. The LIFE Program was implemented with consortium partner Pathfinder International and local partners including the Ariel Glaser Pediatric AIDS and Healthcare Initiative (AGPAHI) and the Tanzania Red Cross Society (TRCS).

The LIFE Program sought to increase access to integrated, quality, and comprehensive reproductive health and HIV services. A “one-stop shop” of reproductive health and PMTCT was brought to scale in Arusha, Geita, Kilimanjaro, Lindi, Mtwara, Tabora, Shinyanga and Simiyu regions through LIFE. These services were expanded through utilization of community health platforms. By integrating services and increasing access, the overall proportion of known HIV-positive pregnant women doubled over the 5-year period, increasing from 18% in 2010 to 35% by 2015; the proportion of HIV-positive women on ART increased from 17% in 2012 to over 100% by 2015/16; and the number of HIV-exposed infants (HEI) accessing PMTCT services, increased from 41% to 79%.

Using supplemental funding through LIFE, EGPAF supported a comprehensive package of maternal, neonatal and child health (MNCH) services in 102 sites in Tabora and 46 sites in Lindi. Strengthening MNCH systems resulted in higher facility delivery rates and better use of postnatal care services. Through funding from the US President’s Malaria Initiative EGPAF also supported malaria in pregnancy services in Lindi and Mtwara regions. Malaria testing increased from 41% in 2014 to 91% by June 2016, and the provision of preventive treatment to pregnant women increased from 44% to 91% during the same period.

In addition, the coverage of family planning services (counseling, initiation, referral) among HIV-positive postpartum/lactating women increased over time from 80% to nearly 100%. In 42 selected health facilities, EGPAF supported the set up of cervical cancer screening services.

LIFE focused also on strengthening linkages and referral networks across service delivery points, and facility- and community-based services to ensure a continuum of care. Working with home-based care (HBC) providers and community health workers (CHW), LIFE program increased communications around HIV testing and prevention, as well as use of reproductive health and nutrition counseling and services, and scaled up home visits to ensure HIV-positive clients were properly engaged in treatment. By mid-2016, home-based care providers had reached over 94,000 clients and community health workers visited over 172,000 households, contributing to retention in HIV care and treatment services. Lost to follow-up (LTFU) among women on antiretroviral therapy dropped thanks to tracing efforts of these two important health cadres.

The LIFE Program strived to ensure sustainability of gains made through supporting a strengthened health system. Through work with the Ministry of Health, Community Development, Gender, Elderly, and Children (MOHCDGEC), Regional Health Management Teams (RHMT) and district Council Health Management Teams (CHMT), as well as a number of in-country partners, the LIFE Program trained over 10,500 of Tanzania’s health workers on a variety of areas related to child health, PMTCT, HIV care and treatment, management of opportunistic infections, program management, quality improvement and monitoring and evaluation. Quality improvement (QI) was an important area of work under LIFE; the increased use of data that followed QI implementation allowed health workers and managers to truly see where challenges lay and how to fix issues, creating more effective health service delivery platforms. EGPAF and the MOHCDGEC also worked together to develop an enabling political environment to support HIV and AIDS programs through engagement in national technical working groups.

The LIFE Program ended in 2016, but its promotion of integrated services through the local health infrastructure has contributed to a sustainable foundation for comprehensive HIV and RCH service delivery in Tanzania. In this report, approaches, results, challenges and lessons learned under LIFE are illustrated in detail.

Current State of HIV in Tanzania



Tanzania has a population of 48 million, the majority being under 35 years of age (79%). The country is home to a high total fertility rate of 5.2 births per woman.¹ While significant socio-economic development, education, and public health services have led to near-achievement of several Millennium Development Goals (e.g. reduced HIV prevalence, reduced child mortality, and improved gender equality), public health challenges for Tanzania remain around HIV, reproductive health and malaria control.

With an estimated 1.4 million people living with HIV (PLHIV)², Tanzania's HIV prevalence among adults 15-49 years of age is 5.1% overall, and 5.3% on the mainland. HIV prevalence rates vary significantly by region and gender. Women overall have higher rates (6.2%) compared to men (3.8%), and young women (20-29) at the peak of their childbearing years have more than double the HIV infection rate (5.7%) compared to men in the same age group (2%). Childbearing begins early in Tanzania; from 2004 to 2015, population surveys have reported between 23% and 27% of adolescent girls, 15-19 years of age, had given birth or were currently pregnant.³ Adolescent girls are at higher risk of poor pregnancy outcomes, and can be more vulnerable to gender discrimination, HIV infection, and HIV-related stigma compared to older women.

Under-five mortality rates have decreased dramatically over the past decade, largely due to improved access to malaria control and treatment, and promotion of essential child survival interventions such as immunization services. The prevalence of malaria in pregnancy has reduced thanks to better coverage of antimalarial regimens and heightened control methods implemented (nets and insecticides). However, maternal and infant mortality rates have declined more gradually, reflecting the challenges that Tanzania continues to face in ensuring access to quality delivery and postnatal services for all women, including comprehensive emergency obstetric care.

Tanzania's national HIV response has demonstrated a high-level of commitment to adoption of international guidelines on HIV. Significant investment from the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and the Global Fund to Fight AIDS, Tuberculosis, and Malaria have supported the integration of comprehensive HIV prevention, care and treatment services into the government's public health system from tertiary to primary facilities in all regions and districts. Programs to prevent mother-to-child transmission of HIV have significantly transformed reproductive health services over the past decade. Some of Tanzania's most significant achievements in prevention of vertical transmission of HIV, malaria control and reproductive health are detailed below.

- In 2006, only 13% of RCH centers in the country were offering PMTCT services to women and children. Today, 97% of RCH centers offer PMTCT, creating wider access to HIV prevention among women and children.⁴
- Tanzania has seen an overall increase in HIV testing among pregnant women from 43% in 2007, 77% in 2011;⁵ reaching over 86% by 2015.⁶
- Starting in 2013, the country successfully launched the World Health Organization's (WHO) recommendation of providing lifelong ART to all HIV-positive pregnant or breastfeeding women (Option B+) and achieved 85% ART/Option B+ service coverage among all RCH facilities in mainland Tanzania by 2014.⁷
- In 1990, the under-five mortality rate was 191 per 1,000 live births, decreasing more than two-fold to 67 in 2015, bringing Tanzania within very close reach of the Millennium Development Goal of 64.
- Intermittent preventive treatment of malaria in pregnant women increased from 57% to 68% (1 dose) and from 30% to 42% (2 doses) between 2007 and 2015.



EGPAF-Tanzania



EGPAF has worked in Tanzania since 2003, supporting the government to increase access to high quality, comprehensive PMTCT and HIV care and treatment services. Aligned with Tanzania's comprehensive HIV program policies, EGPAF has earned recognition as a leader in providing high-quality technical assistance in several regions of the country. Working in close partnership with the Ministry of Health, Community Development, Gender, Elderly, and Children (MOHCDGEC)*, EGPAF works at national, regional, district, site and community levels to increase access to quality HIV services, strengthen health systems and build technical and management capacity among local government authorities.

EGPAF-SUPPORTED APPROACHES

At national level, EGPAF supports implementation of policies through participation in technical working groups. EGPAF works with members of the Tanzanian parliament to ensure the HIV epidemic in country is prioritized and met with evidence-based interventions that improve patient care and access to services. At the local government level, district councils receive sub-grants from EGPAF to support program implementation with targeted organizational and program management capacity building. EGPAF also promotes coordination of implementing partners, data use for program management and sharing of lessons learned among regional and district partners. At the facility level, EGPAF, with government authorities, works to provide on-site mentoring to clinical and laboratory-based health care workers on quality health practices in line with global recommendations, data quality assurance, and support to ensure use and scale-up of revised electronic data systems and laboratory equipment. At community level, EGPAF supports linkages to community-based support, community awareness of HIV services and consumer feedback on quality of care through coordination of dialogues, and community-based tracing of clients who default from HIV services.

* Renamed from the Ministry of Health and Social Welfare in 2015.

The LIFE Program



With support from USAID, EGPAF implemented the five-year (2012-2016) LIFE Program in ten regions of Tanzania mainland and on Zanzibar. The overall goal of this project was to contribute to the virtual elimination of pediatric HIV in Tanzania by implementing the four prongs of comprehensive PMTCT through integrating health and HIV services and strengthening the Tanzanian health system. Integrated RCH/PMTCT services were supported in 1,534 sites in Arusha, Geita, Kilimanjaro, Lindi, Mtwara, Tabora, Shinyanga and Simiyu regions.

Through LIFE, EGPAF also supported community-based HIV services in Lindi, Mtwara, Mwanza, Pwani, Tabora, and part of Geita Region and on Zanzibar. Community-based HIV services were coordinated by the Tanzania Red Cross Society with technical assistance from Pathfinder International in four regions (Mwanza, Pwani, Tabora, Geita regions) and on Zanzibar, while the HBC component in Lindi and Mtwara regions is coordinated directly by EGPAF through the districts. EGPAF partnered with its local affiliate, AGPAHI, to support RCH/PMTCT services in Shinyanga, Simiyu and two districts in Geita Region.

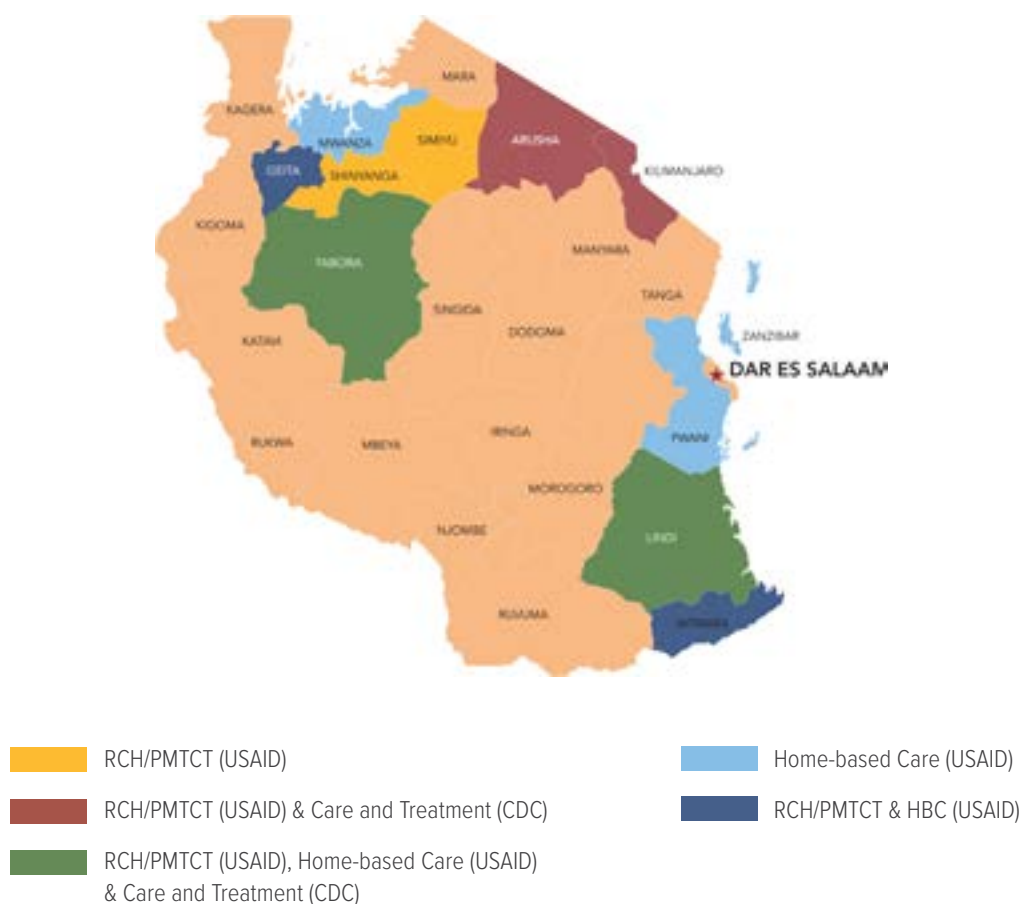


Figure 1. EGPAF-supported regions across Tanzania

EGPAF was funded through PEPFAR/U.S. Centers for Disease Control and Prevention (CDC) to support a different project focused on care and treatment in Arusha, Kilimanjaro, Lindi and Tabora regions. However, project implementation and technical assistance strategies under LIFE were fully integrated with general HIV care/treatment support in those four, CDC-supported regions. EGPAF played a leadership role in coordinating the Partnership for HIV Free Survival (PHFS) activities in Tanzania, as well as implementing PHFS activities in Tabora. And under the LIFE mechanism, EGPAF successfully leveraged maternal, MNCH, the U.S. President’s Malaria Initiative, and central USAID funding to the HIVCore project (Population Council) to support integrated RCH/HIV programming and operations research, respectively.

GOAL AND OBJECTIVES

To contribute to the virtual elimination of pediatric HIV in Tanzania, the LIFE Program was designed to achieve three main objectives. The three project objectives and key strategies and activities are detailed below.

Objective 1

Increase access to integrated, quality, and comprehensive HIV and RCH services

- Increase access to integrated and comprehensive PMTCT services among women and newborns
- Increase access to antiretroviral therapy (ART) for pregnant and lactating women and ensure access among HIV-exposed infants (HEI) to antiretroviral (ARV) prophylaxis, cotrimoxazole and early infant HIV diagnosis (EID)
- Strengthen RCH for HIV-positive and HIV-negative women, such as comprehensive MNCH services (primary antenatal, postnatal and obstetric care), family planning (FP), cervical cancer screening, and malaria in pregnancy

Objective 2

Strengthen linkages and referral networks across service delivery points, and facility- and community-based services to improve services and ensure a continuum of care

- Support community-based providers – HIV HBC and MNCH CHW – to provide comprehensive community support; promote linkages between PMTCT, HIV counseling and testing, and community-based MNCH services; and facilitate tracing of mothers/infants LTFU
- Support psychosocial support services at facility and community level
- Support district coordination of partners and service providers

Objective 3

Ensure sustainability through a strengthened health system and transfer capacity, management, and oversight of activities to the local government and other local institutions

- Strengthen management and leadership capacity of regional and district council health management teams to ensure continued guidance of the health workforce, financial management, and strategic planning
- Conduct training, mentoring and supervision to build capacity of local government and partners in program management
- Collaborate with local organizations to strengthen capacity to provide technical assistance to HIV service delivery
- Strengthen the medical product supply chain
- Expand data use through harmonized and updated health information systems
- Build capacity for continuous quality improvement (CQI)

LIFE Results by Objective



Objective 1

Comprehensive HIV and RCH Services



Photo: James Pursey/EGPAF, 2012

Promoting integration of HIV and RCH services is fundamental to EGPAF's success in Tanzania. Under LIFE, EGPAF's primary focus has been supporting PMTCT services at scale. EGPAF grew to support over 95% of all RCH facilities in eight regions (>1,500 facilities) from 2012-2015, reducing support to about 1,100 facilities in the same regions in 2016 after the PEPFAR 3.0 pivot under direction from the Office of the U.S. Global AIDS Coordinator.[†]

The LIFE Program also provided funds for MNCH services and malaria control, and EGPAF received PEPFAR support through CDC for comprehensive support to HIV care and treatment services. As a result, EGPAF's technical assistance teams, management structure, and field offices have been well-positioned to support the implementation of a truly integrated program that benefited from the collaboration and coordination of program managers within EGPAF, as well as local government partners overseeing service delivery and health providers working across service delivery platforms in HIV, tuberculosis (TB) and RCH clinics, laboratories, and pharmacies.

The first objective of the LIFE Program emphasized technical assistance at all levels – national, regional, district and facility – to support comprehensive PMTCT services in RCH settings. While the majority of supported PMTCT sites were first established under EGPAF's Call-to-Action project (2003-2010),[‡] the LIFE Program emphasized expanded access to comprehensive services, including increased access to more effective ARV prophylaxis regimens (Option A) transitioning sites to implement Option B+ in 2013; EID services; psychosocial support; innovative approaches to QI; and leveraging EGPAF's technical assistance to support RCH/MNCH services for both HIV-positive and HIV-negative women.

HIV TESTING AND COUNSELING IN REPRODUCTIVE HEALTH SERVICES

Entry into PMTCT services occurs at the first antenatal care (ANC) visit, when all new registrants are screened for HIV. Those who know they are positive are registered for PMTCT services immediately, and all others are offered HIV testing. By 2010, the country overall had established high (>85%) HIV screening coverage rates in most regions, including EGPAF-supported regions. This success proved fragile in the face of a serious national HIV rapid test kit shortage starting in 2011, followed by an abrupt change to the testing algorithm due to the WHO delisting the first line test kit (SD bioline) for quality control issues. Figure 2 presents the HIV testing coverage for EGPAF-supported sites from January 2010 to June 2016.

[†] PEPFAR 3.0 pivot: <http://www.pepfar.gov/documents/organization/234744.pdf>.

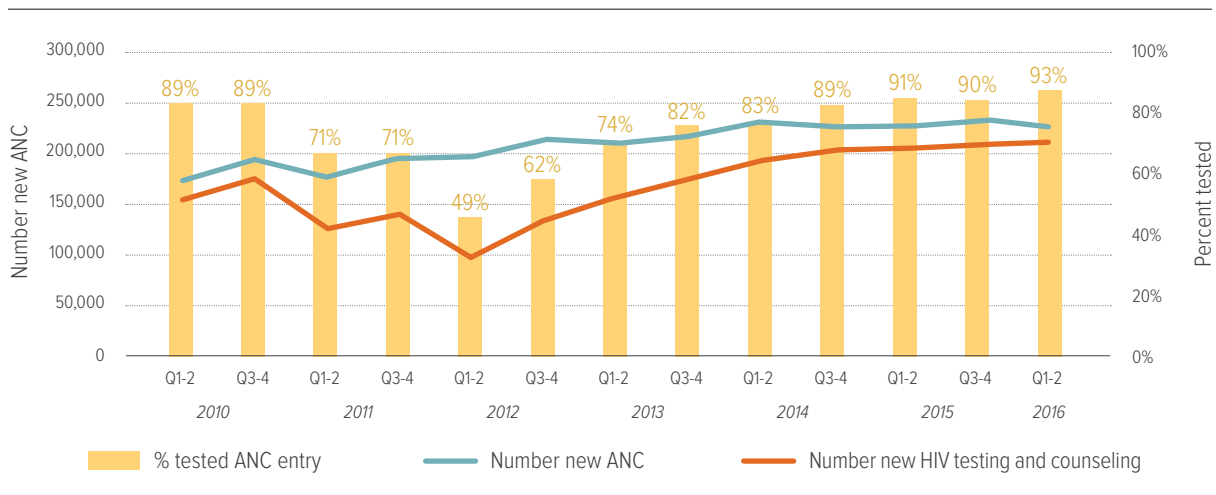


Figure 2: Coverage of HIV testing among new ANC patients, 2010-2016

HIV testing coverage suffered during the shortage of 2011, dipping to 71%, but was significantly worsened in 2012 as a result of the withdrawal of SD Bioline. Although a revised testing algorithm was introduced in March 2012, stock levels of test kits remained erratic, particularly in the Lake Zone, which affected several regions under EGPAF support. Bringing levels of opt-out testing coverage back up to over 90% required intensive program support, such as retraining health staff on revised guidelines and standards and supporting redistribution of supplies where imbalances were identified.

Figure 3 shows the total number of pregnant women identified as HIV-positive over time, peaking in early 2014 and stabilizing at about 14,000/year from 2014-2016. The overall proportion of known HIV-positive pregnant women registering for new ANC doubled over the 5-year period, increasing from 18% in 2010 to 35% by 2015. This is attributable to the fact that national coverage of HIV rapid testing for PMTCT had been expanding from about 60% of RCH facilities in 2008⁸ to 85% by 2014.⁹ Thus, the likelihood of exposure to HIV testing in a prior pregnancy increased over the course of the project. Rate of re-screening later in pregnancy remains small; the proportion of women receiving a second test in their third trimester grew from only 5% in 2013 to 15% by end of 2015.

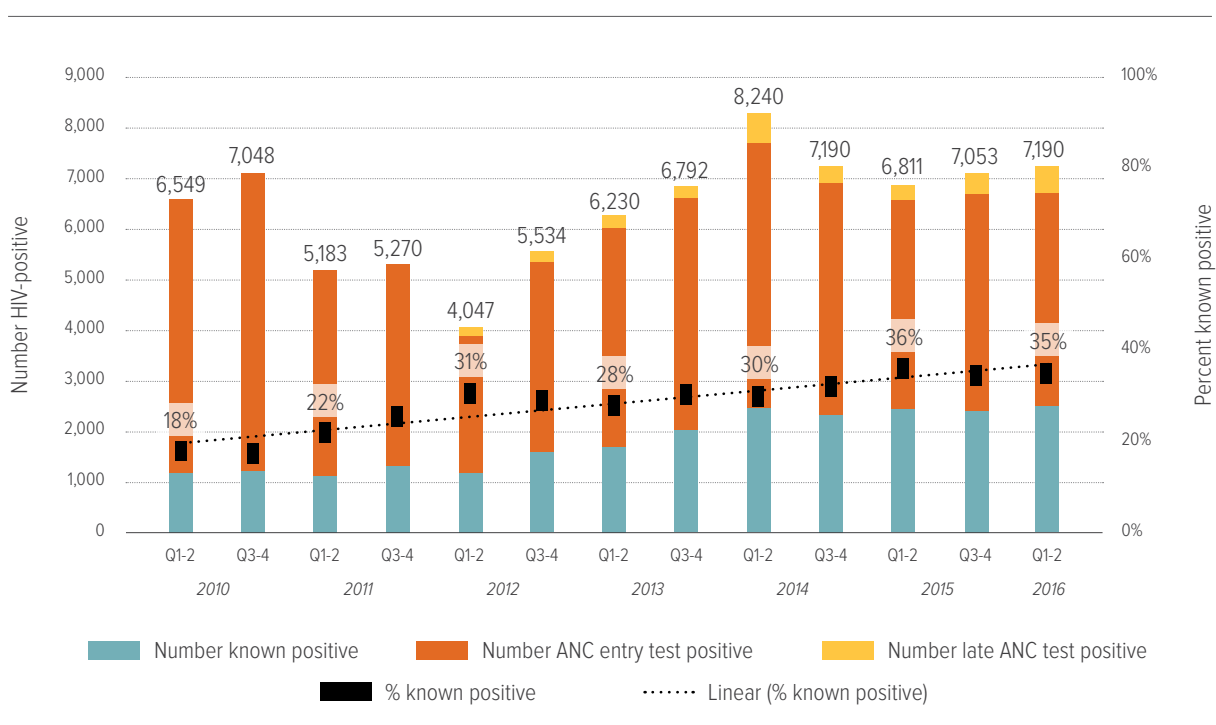


Figure 3: Total identified HIV-positive women during ANC, 2010-2016

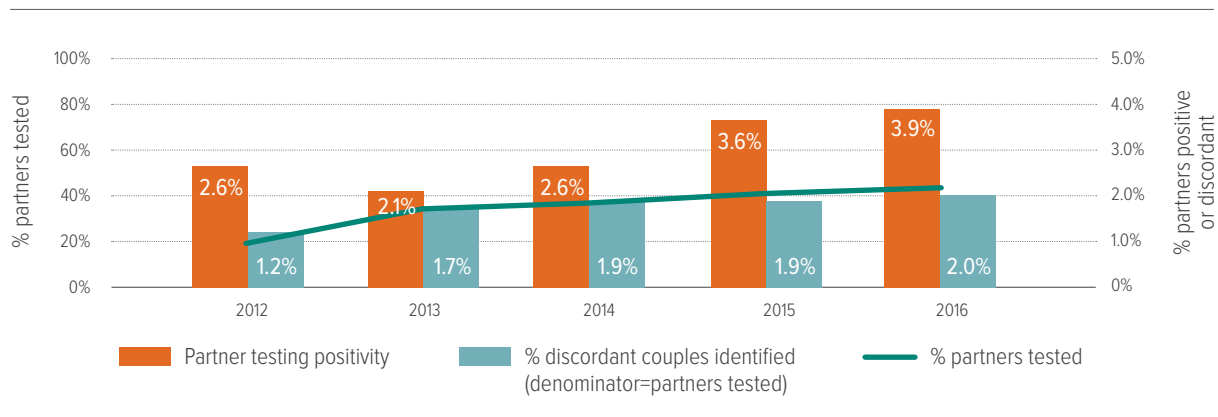


Figure 4: Partner testing, partner positivity, and discordant couple identification, 2010-2016

Partner testing is promoted in LIFE-supported sites. Discordant couples represent a still underserved at-risk population for HIV transmission. During the LIFE Program, discordant couple services were generally not well-integrated into HIV or PMTCT services (recommendations to scale up partner testing are found herewith). As partner testing coverage increased from 20% in 2012 to 43% by 2016, the positive partner yield remained relatively stable from 2% to 4%. Meanwhile, about 2% of partners tested were in a discordant relationship (Figure 4), and this 2% represents about 4,000 discordant couples per year among EGPAF-supported sites. The LIFE Program experience suggests that the majority of discordant couples identified through ANC partner testing were HIV-negative women with HIV-positive partners because HIV testing of partners is more commonly accepted among women who have already screened HIV-negative. This type of discordancy represents a serious risk for vertical transmission because of the incident infection risk to the pregnant/breastfeeding woman, and because extremely high viral loads occur at seroconversion, the fetus or breastfeeding infant are also at high risk of contracting HIV.

HIV-positive Yield by Testing Point

National PMTCT testing guidelines follow an opt-out testing approach at ANC entry and recommend re-screening in the third trimester for anyone who is in a discordant couple or is deemed to be at risk due to other circumstances. Women who enter labor and delivery (L&D) services without any record of HIV testing in pregnancy should also be tested. Trends in proportion of all tested who are HIV-positive, and proportion of total HIV-positive identified including those who knew their HIV-positive status at ANC entry from 2010-2016 are shown in Figure 5.

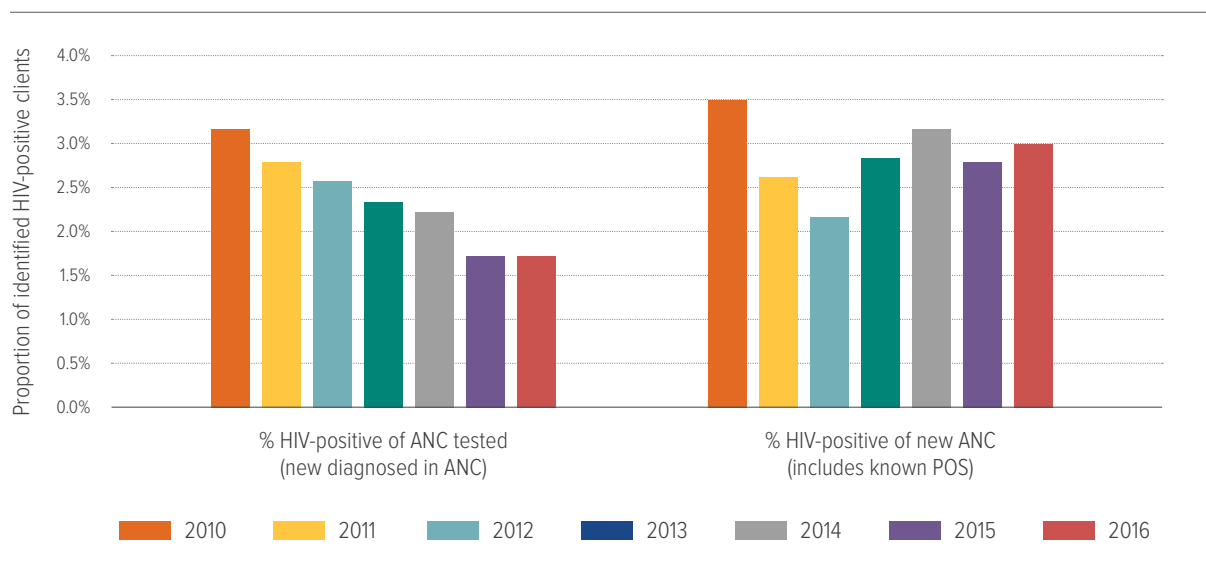


Figure 5: HIV-positive testing yield in ANC and total identified positive in ANC, 2010-2016

HIV-positive yield declined 77% for testing in ANC, from 3.2% to 1.8%, but declined only 17% for all HIV-positive women in ANC, including those with known positive status. The larger decline among those tested reflects the maturity of the opt-out testing in ANC standard of care, whereby many more women in 2016 had prior opportunities to be tested compared to in 2010, and women with known positive status therefore increased over time.

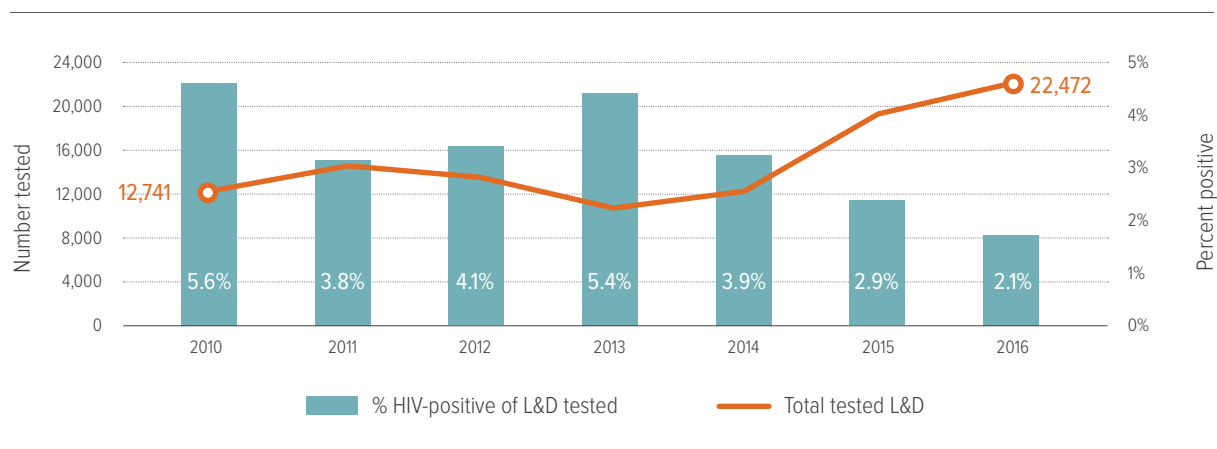


Figure 6: Coverage and yield of HIV testing in L&D, 2010-2016

There was an almost 3-fold decline in HIV-positivity among women tested in L&D, with a marked spike in positivity in 2013, which may reflect effects of the reduced testing coverage in ANC in 2012 (Figure 6). HIV testing in L&D increased steeply from 2014-2016, and with more testing, there was a declining rate of HIV-positivity among those tested. By 2016, the HIV-positivity rate in L&D testing is about the same as that observed in ANC.

ANTIRETROVIRALS: FROM PROPHYLAXIS TO TREATMENT FOR ALL

With the support of implementing partners including EGPAF, Tanzania adopted the WHO Option B+ recommendation in 2013. Figure 7 shows the rapid shift from ARV prophylaxis (Option A) to lifelong ART (Option B+). The proportion of women on ART increased from 17% in 2012 to over 100% by 2015/16.³ The line in Figure 7 shows the absolute number of pregnant/lactating women on lifelong ART, which increased steeply with implementation of the Option B+ program, reaching over 16,000 in 2015.

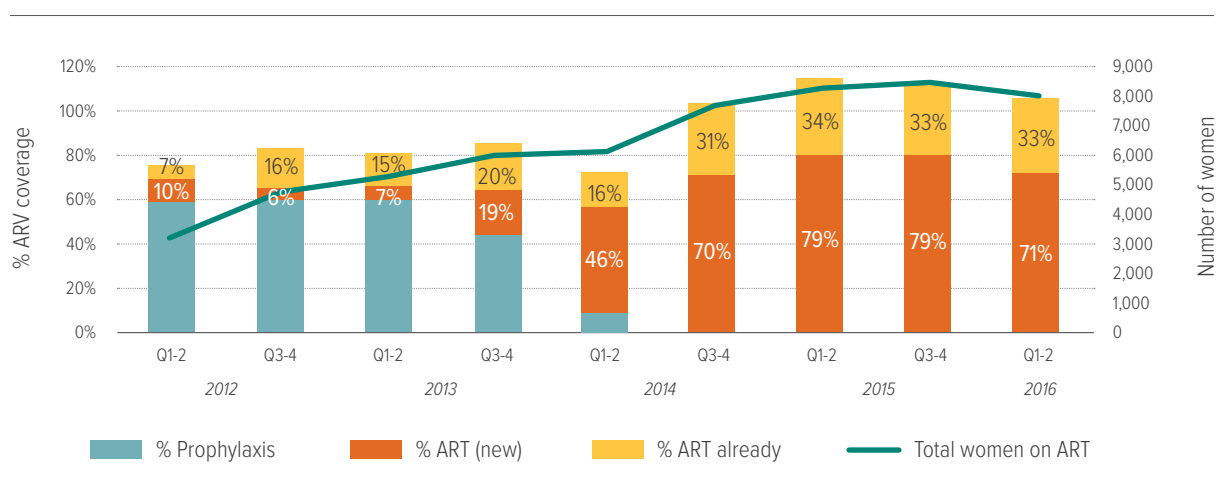


Figure 7: ARV coverage of all HIV-positive women in ANC, L&D, and postnatal care (PNC)

³ The reason women on ART exceeded 100% after Option B+ is due to a national monitoring/reporting indicator challenge that did not allow accurate counting of women who became pregnant while already on ART. The MOHCDGEC computes that number from those who are reported as "known HIV-positive" at ANC entry. There was likely a slight overestimate of women already on ART because some proportion of these known HIV-positive women may not be engaged in HIV care/treatment at all, or were treated as pre-ART clients under current guidelines for adults.

EARLY INFANT HIV DIAGNOSIS

Routine polymerase chain reaction (PCR) HIV testing of dried blood spot (DBS) samples for EID of all HIV-exposed infants was launched nationally in 2008. Implementing partners including EGPAF played a key role in building capacity at site level and supporting national systems that allowed the scale-up of EID services to almost all PMTCT facilities. EGPAF leveraged funding from CDC for HIV care/treatment services to enhance supply chain management, laboratory support, and purchasing of SMS printers which used phone networks to provide electronic EID results delivery from lab to facilities. Site capacity and national system-level factors essential to comprehensive EID services are complex (see Table 1) and require intensive technical assistance and national policy leadership across multiple MOHCDGEC units, including NACP, PMTCT, and the Health Management Information Systems (HMIS) Unit Under the Policy and Planning Department. At clinic level, EID service provision requires effective integration into postnatal and under-five clinics to reach all HIV-exposed infants.

Table 1: Essential components of a sustainable EID system

FACILITY LEVEL	DISTRICT, REGIONAL, ZONAL, AND NATIONAL LEVELS
Trained service providers in: <ul style="list-style-type: none"> • Identifying HEI at service entry points • Dried blood spot collection • Specimen transportation systems from site to district • Patient tracking/tracing to provide results • EID results counseling (including breastfeeding vs. replacement feeding counseling) • Linking infected infants to HIV treatment 	Systems-level components: <ul style="list-style-type: none"> • Specimen transportation systems from the facility to the district to the testing lab • Capacity to conduct PCR testing of dried blood spots (currently only done at zonal laboratories) • Timely turnaround of results from laboratory to the district to the facility • Laboratory data entry, management and electronic results communications systems • Harmonized data across zonal laboratories, and regular reporting of data to enable national monitoring of EID • Ensuring a steady supply and distribution of PCR testing and specimen collection kits to facilities

Registering HEI for PMTCT services – nevirapine and cotrimoxazole prophylaxis, infant feeding counseling, HIV diagnostics (PCR and antibody), and maintaining follow-up of mother-baby pairs – increased significantly during the LIFE Program, from 41% of the expected number of HIV-exposed infants to 79% (denominator: all HIV-positive women identified). Figure 8 shows coverage of infant NVP prophylactic dosing which increased from 45% in 2012 to 73% in 2016, but coverage of cotrimoxazole remained relatively stable at less than 60% due to chronic shortages throughout the project period. This was a significant achievement given generally low rates of facility delivery, the lack of well-established PNC services, and a culture among patients and providers that does not fully recognize the value of PNC. Consequently, identification of mothers with HEI relies heavily on immunization clinics whose staff and patient flow patterns are not always well integrated into comprehensive RCH/PMTCT services.

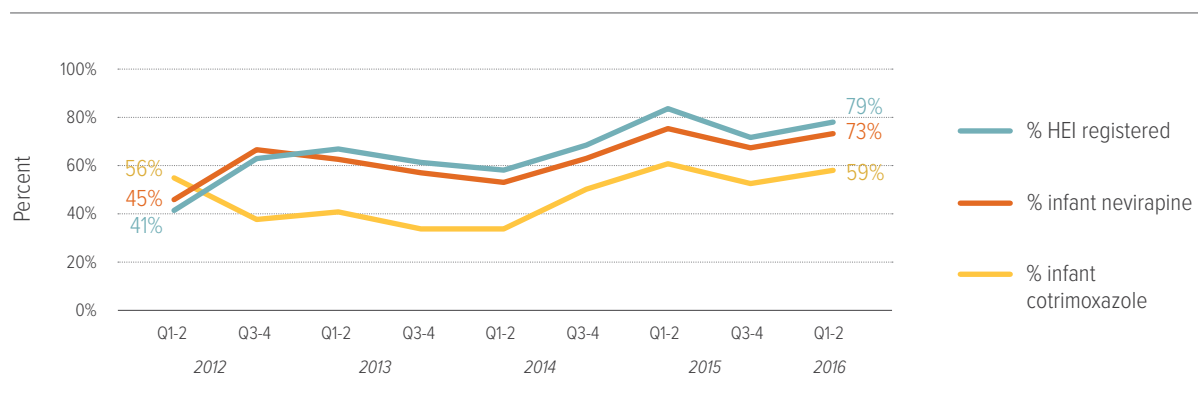


Figure 8: HIV-exposed registration and medication provided among expected number of children (total HIV-positive women), 2012-2016

Still, significant gains were made during the project period. By 2016, 75% of HIV-exposed infants were tested for HIV at least once, and 59% were tested within the recommended time of <2 months (Figure 9). Giving caregivers results also remains a challenge largely due to the logistical constraints in sample transportation and results delivery systems that may lead to about 10% of results never reaching the facility. The long turnaround time and LTFU or patient migration to different areas/facilities also contributes to some HEI caregivers never getting the results from their infant's HIV test. Among those tested, only 73% of caregivers received their infant's result.

Confirmatory testing after breastfeeding cessation, usually at about 18 months, remains low, though significant gains were made from 2012 when only 4% were reported with a confirmed HIV diagnosis increasing to 26% by 2016. One important reason confirmatory testing appears to remain low is that providers are likely under-documenting those HEI who receive confirmatory testing due to lack of clarity of tools and indicators.* Another factor is the increasing risk of non-retention of mother-baby pairs in long-term PMTCT follow-up. Fortunately, a bump in confirmatory testing is seen after the Option B+ program was introduced, suggesting that this indicator has great potential to improve as women are more actively followed for ART, and as Option B+ monitoring and evaluation systems and indicators are improved upon.

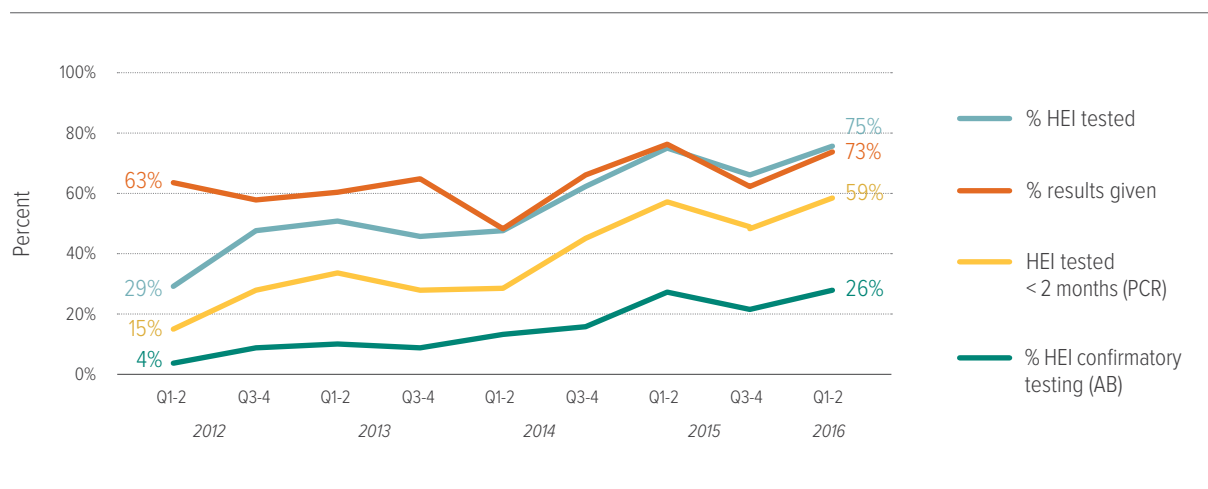


Figure 9: HEI testing for HIV overall, early PCR testing (<2 mos), confirmatory antibody testing after cessation of breastfeeding, and results given, 2012-2016

While DBS positivity is not a direct measure of mother-to-child HIV transmission risk, declining trends in HIV-positivity among infants (as measured by DBS testing, where the denominator is all infants bled for testing regardless of whether results were documented as returned) are consistent with declining risk of transmission at population level. Both early and confirmatory testing trends show steadily declining proportions of both age groups testing HIV-positive. The proportion of HEI identified as HIV-positive through early testing declined from 9.7% in 2012 to 3.7% in 2016, and the proportion of HEI identified as HIV-positive through confirmatory testing declined from 21% in 2012 to 3.7% by 2016 (Figure 10). This is encouraging data, and strongly suggests that the PMTCT program in Tanzania has substantially reduced the risk of mother-to-child HIV transmission. These trends are also consistent with reported trends from the 2015 national PMTCT data analysis report.¹⁰



* For example the tool only indicate testing at 18 months, but if HEI have been confirmed earlier — e.g. DBS positive or tested at 12 months — these results are not captured.

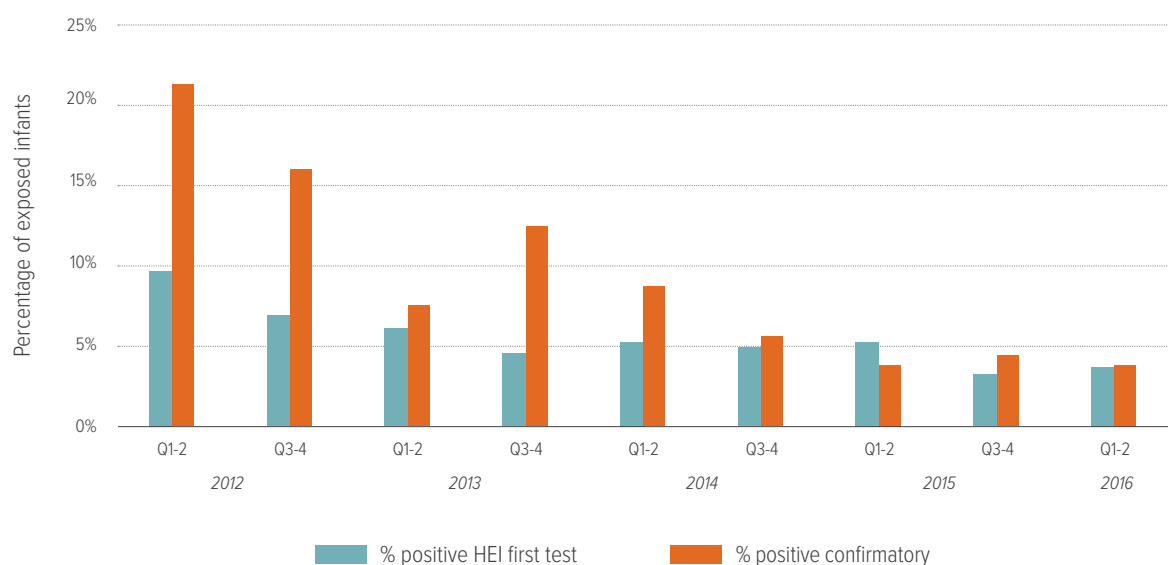


Figure 10: HIV-positivity among HIV-exposed infants tested

PSYCHOSOCIAL SUPPORT TO PREGNANT/LACTATING WOMEN WITH HIV

The LIFE Program supported Council Health Management Teams, composed of representatives of local government, to implement psychosocial support services for HIV-positive pregnant and lactating women. The mother support group (MSG) meetings, facilitated monthly by health providers, include the sharing of testimonies and encourage newly diagnosed mothers to maintain ARV adherence and stay in follow-up with their exposed infants after delivery. These groups aim to recruit all newly diagnosed pregnant women and follow them to PMTCT discharge at about 18 months postpartum. By June 2016, more than half (55%) of all high volume PMTCT sites (i.e. >50 HIV-positive women identified in the past year) had MSGs. Overall more than 2,500 members were reported as active in 70 MSGs (Table 2).

Table 2. Mother support groups in the LIFE Program

PROJECT YEAR	MSGs	TOTAL MEMBERS	PERCENT PREGNANT*
2012	3	not reported	not reported
2013	25	347	not reported
2014	39	1,257	37%
2015	66	1,958	28%
2016	70	2,560	34%

Figure 11 shows trends from 2014-2016 (earlier data not available) of MSG group membership among pregnant or lactating women in relation to the total HIV-positive pregnant women identified at MSG-implementing sites. MSG enrollment of all HIV-positive pregnant women rose from 27% in 2014 to over 81% by 2016.

* Groups members are mostly lactating women, with some groups including male partners

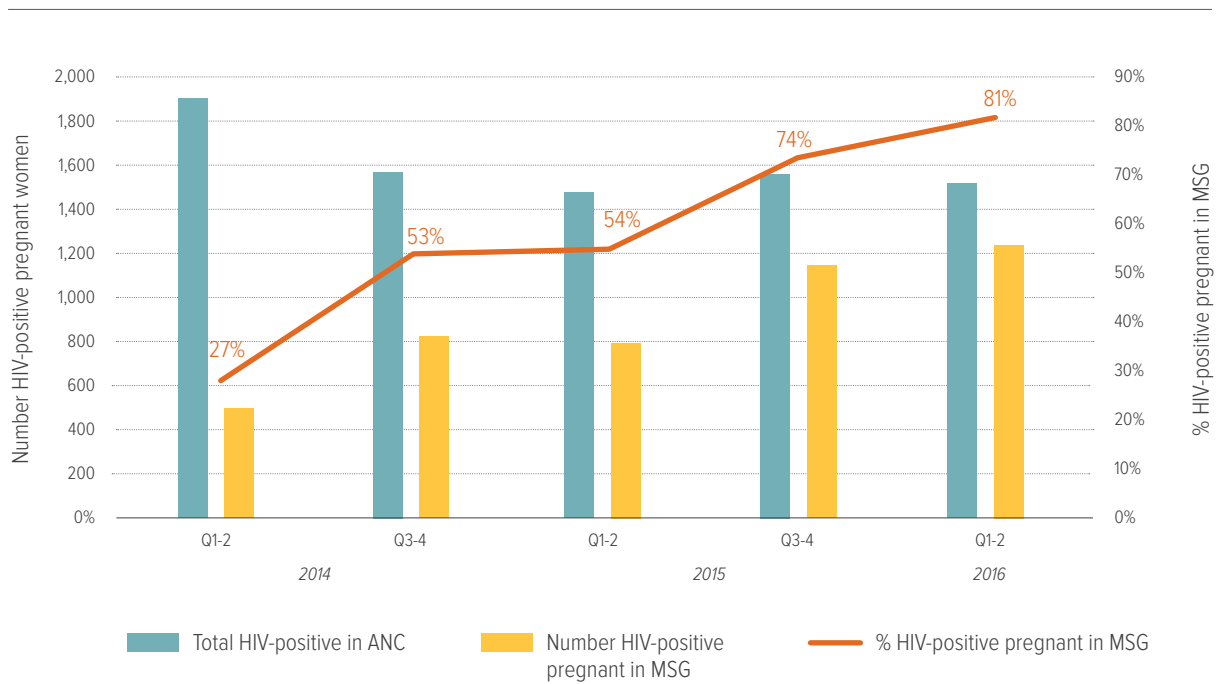


Figure 11. HIV-positive women joining MSG while pregnant, 2014-2016

INTEGRATING MNCH AND PMTCT SERVICES

EGPAF has worked with the MOHCDGEC and local partners to support MNCH and other reproductive health services for both HIV-positive and HIV-negative women, such as focused ANC, basic emergency obstetric and neonatal care, postpartum care, malaria control, the *Baby Friendly Hospital Initiative*, *Integrated Management of Child Illness***²², FP, cervical cancer prevention, youth-friendly services, and male involvement in RCH services. This report highlights key achievements related to EGPAF’s technical assistance in MNCH and other reproductive health services in a subset of sites or regions already receiving EGPAF support for PMTCT services.

Strengthening MNCH

Using supplemental funding through LIFE, EGPAF supported a comprehensive package of MNCH services in 102 sites in Tabora and 46 sites in Lindi. The program model focused on building eleven “hubs of expertise” at regional and district hospitals, strengthening the quality of emergency obstetric care provided at these centers, and providing on-site mentorship through clinical attachments to health providers from lower-level facilities in basic obstetric care. Meanwhile, EGPAF capacitated mentors from these hub facilities, including the district RCH coordinator, who monitored sites’ adherence to L&D and early postpartum care clinical standards and conducted follow-up supervision to lower-level facilities following clinical trainings. Some training and equipment/renovation were provided by EGPAF according to site-level needs determined through a baseline assessment.

Strengthening MNCH systems resulted in higher facility delivery rates and better use of postnatal care services. From January 2013 to June 2016, the number of facility deliveries doubled from about 15,000 to over 30,000. This increase exceeded the growth observed in non-MNCH supported sites, though those sites also had increased facility deliveries (75%) during the same time period (Figure 12).

** The *Baby Friendly Hospital Initiative*, and *Integrated Management of Child Illness* are both global initiatives launched by the WHO and the United Nations Children’s Fund (UNICEF) in 1991 and 1992, respectively. The *Baby Friendly Hospital Initiative* promotes optimum infant feeding and mother/baby bonding practices, and *Integrated Management of Child Illness* promotes standardized syndromic algorithms for primary level facility/provider management of common illnesses.

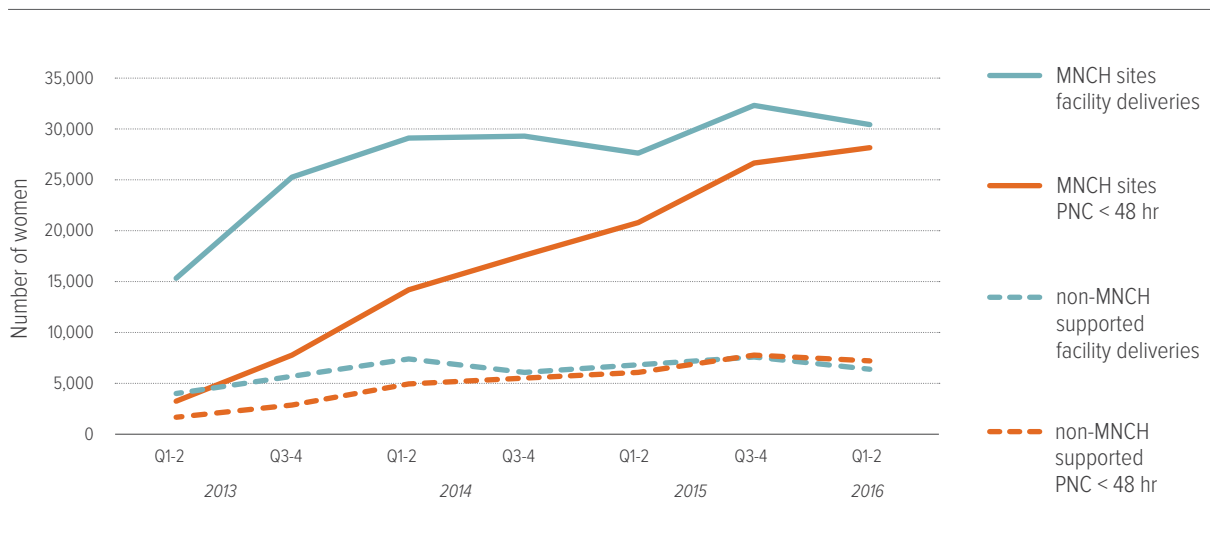


Figure 12: Facility delivery and early PNC use rates over time in MNCH and non-MNCH supported sites, 2013-2016

Early PNC is generally very low in Tanzania (32% in 2015)⁷, with little recognition among women or providers about the importance of postnatal check-ups. While EGPAF promotes and supports adherence to national recommendations on PNC at all supported PMTCT sites, LIFE-supported MNCH sites have performed better than non-LIFE-supported MNCH sites in increasing PNC attendance, most likely because of their participation in clinical attachments, adherence to clinical standards, and received supportive supervision. Figure 12 shows PNC visits within 48 hours increased over nine times at MNCH-supported sites compared to non-supported sites that saw a four-fold increase. More than two-thirds (67%) of expected delivered women visited the PNC within 48 hours at supported MNCH sites compared to only 35% at non-supported sites. Clearly, there was an increasing trend in facility delivery at all sites, but the rate of increase at EGPAF-supported sites far exceeded the increases observed at non-supported sites.

DISTANT LEARNING ON INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESS

EGPAF introduced support to the distant learning training approach for Integrated Management of Childhood Illness in 2013 to complement efforts to improve child health and early identification of HIV-exposed and infected children. Instead of a long off-site training curriculum, the new distant learning approach teaches providers knowledge and skills in four short sessions, called *encounters* (refer to Sidebar 1), whereafter providers continue with self-paced learning on-site using online modules (or through provided CD-roms).

Sidebar 1. Integrated Management of Childhood Illness Curriculum

- First encounter:** General danger signs, cough or difficulty in breathing, diarrhea, fever, ear problem, measles, anemia and malnutrition.
- Second encounter:** Care of the sick young infants using the *Integrated Management of Childhood Illness* curriculum. Well child counseling of caretakers on disease prevention, feeding and health promotion.
- Third encounter:** HIV comprehensive module.
- Fourth encounter:** Final synthesis and synchronization of modules.

EGPAF also provided technical assistance to the MOHCDGEC on the Integrated Management of Childhood Illness by developing the HIV module. EGPAF scaled up this training to 212 sites in 8 districts in Tabora, Shinyanga and Lindi regions and trained 383 service providers on Integrated Management of Childhood Illness.

The Partnership for HIV-Free Survival Initiative

Tanzania is among six countries participating in the international PHFS initiative, which was designed in response to the global collaborative effort by the PMTCT Inter-Agency Technical Team's Working Group on Child Survival & Infant Feeding, PEPFAR and other technical partners. The aim of PHFS is to eliminate HIV infections in children and reduce deaths among HIV-infected mothers and children through strengthened post-partum care. The signature PHFS approach is to maximize collaborative and coordinated efforts across ministry arms and implementing partners supporting HIV, MNCH and nutrition through engaged high-level leadership, oversight of key indicators, strong emphasis on sustaining QI efforts, and holding periodic and structured "learning platform" meetings across participating sites, regions, and countries.

PHFS Change Package to Improve Retention of Mother-baby Pairs in HIV care

- Dual mother-baby appointments
- HEI cards opened when mother is identified as HIV-positive and stapled to mothers care and treatment clinic (CTC) card[‡]
- Proactive linkage with a CHW
- Active tracing of mothers with missed appointments by phone and CHW
- Allocate special 'family days' for fathers, mothers and their babies

In Tanzania, PHFS began in late 2013, and included 30 sites in three districts (Mufindi, Iringa; Mbeya Municipal, Mbeya; Nzega, Tabora). EGPAF currently implements PHFS in Nzega and acts as the national PHFS secretariat. Activities focus on capacity-building of service providers in RCH services with an emphasis on strengthening (a) comprehensive PNC at facility-level with effective linkages to the community, (b) nutrition services, and (c) follow-up of mother-child pairs to improve EID and access to HIV care/treatment for HIV-infected children.

From October 2013, ten health facilities in Nzega District received intensive PHFS support and programmatic input. Starting in 2015, the PHFS approach was scaled up to an additional 20 sites in Nzega. The primary metric used to evaluate PHFS site performance is through QI monitoring of a standard set of 15 indicators. Learning sessions are an important opportunity to share "tested change" interventions across sites, and to foster a sense of accomplishment and motivation among providers through seeing their own site's progress compared to others.

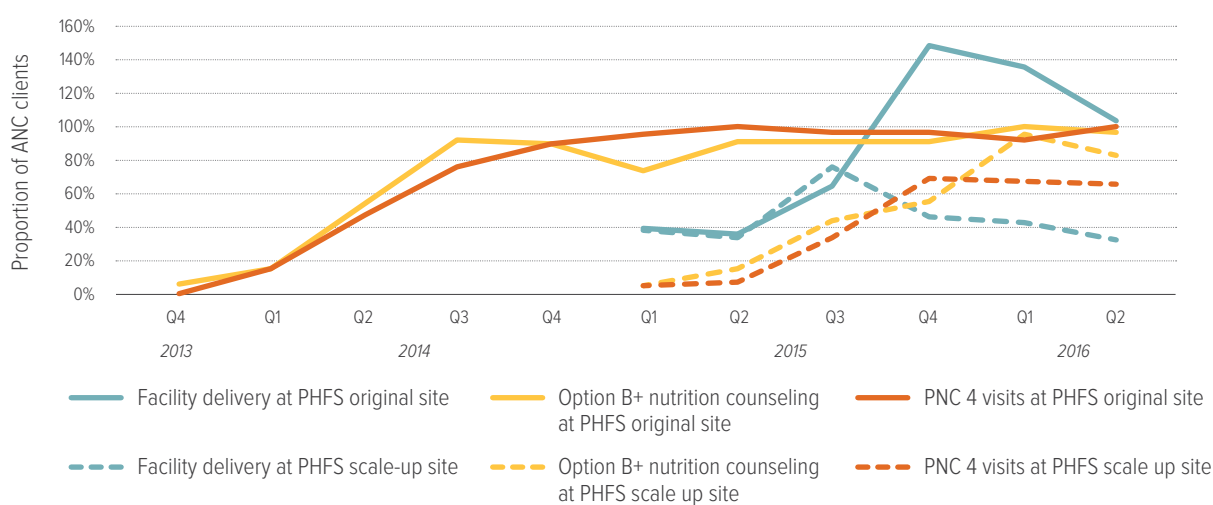


Figure 13. Proportion of clients having a facility delivery; delivered clients attending all PNC visits; and Option B+ clients receiving nutritional support, by duration of PHFS site support, 2013-2016

[‡] Both the patient and HEI cards constitute the paper-based medical record documenting all HIV and HEI services provided. These cards are stored at the HIV clinic.

As postpartum/newborn care is a primary focus areas for PHFS, PNC visits are monitored by all PHFS sites from the start of mother/baby participation. Figure 13 shows that the original 10 PHFS sites, starting in 2013, documented complete PNC visits at less than 20% in early 2014, rising to 80% within six months and over 90% within one year. A slightly slower trajectory of improvement was seen in the 20 scale-up PHFS sites, though considerable improvements were also seen within one year. Facility delivery started at below 40% in early 2015, rising rapidly in the original PHFS sites, but show no increase in the recently added PHFS sites. QI data for the original PHFS sites showed considerable gains in nutrition assessment and counseling and mother-baby monthly attendance, with both indicators reaching more than 80% within 6-9 months. The new PHFS sites have also achieved similarly high rates of performance in about 12 months.

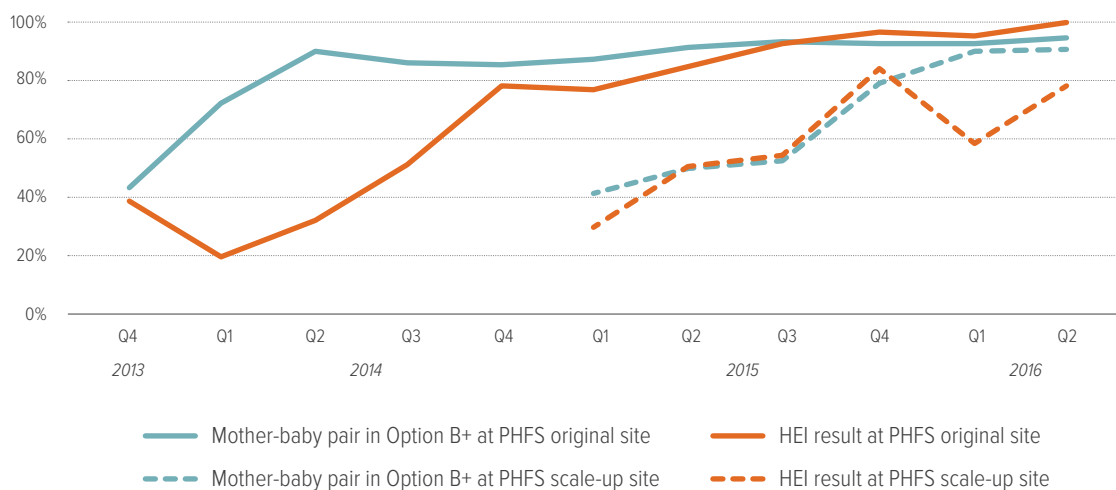


Figure 14. Proportion of Option B+ mother-baby pairs attending monthly and HEI tested and receiving results, by duration of PHFS site support, 2013-2016

PHFS sites conduct pro-active monitoring of monthly attendance to ensure adherence to ART and EID. Both indicators have increased steadily over time for the original 10 PHFS sites, and more steeply in the other 20 sites. At these 20 sites, the Option B+ program had been well-established by 2014, yet uptake of HEI services remained low until PHFS was implemented. This is a good example of how a QI process can make significant contributions to bringing site performance in line with national standards.

Reducing the Impact of Malaria in Pregnancy

The national Malaria in Pregnancy program aims to test 80% of all pregnant women at ANC entry for malaria (increasing to 90% by 2020), and provide at least two doses of sulfadoxine-pyrimethamine to 60% of all pregnant women (increasing to 80% in 2020). With funding from the U.S. President’s Malaria Initiative, EGPAF added a multi-pronged technical assistance package in early 2015 in support of the national Malaria in Pregnancy program to its existing MNCH/HIV support for Lindi and Mtwara.

Figure 15 shows the coverage of malaria screening in pregnancy before and after EGPAF support to Lindi and Mtwara regions, and compares trends in intermittent preventive treatment of malaria (IPT) in Tabora and Shinyanga regions, which did not receive technical assistance from EGPAF. Malaria testing and provision of the first two doses of IPT increased from 44% in 2014 to 91% by June 2016. Similarly, indicators measuring coverage of the full recommended four doses of IPT coverage increased from 2% in 2014 to 53% by June 2016.

Sidebar 2. Malaria in Pregnancy Technical Assistance Package

EGPAF conducted a baseline assessment to identify challenge areas facing malaria in pregnancy services in late 2014. Results informed a technical assistance strategy focused on engaged leadership, supply chain management, QI and supervision. Activities included:

- Regional malaria stakeholders meeting with participation of the National Malaria Control Program and Council Health Management Teams (CHMTs) of Lindi and Mtwara to orient on revised guidelines, foster collaboration, and emphasize roles/responsibilities of each stakeholder;
- Implementation of district-level scorecards to engage and motivate poor performing districts;
- Malaria commodity status management at facility, district and zonal Medical Stores Department levels, supporting redistribution where needed, and building capacity in recording consumption data to improve forecasting and ordering; and
- Supporting CHMTs to integrate the Malaria in Pregnancy program into RCH, include the district's malaria focal person in supervision, and review malaria indicators at quarterly data analysis workshops.

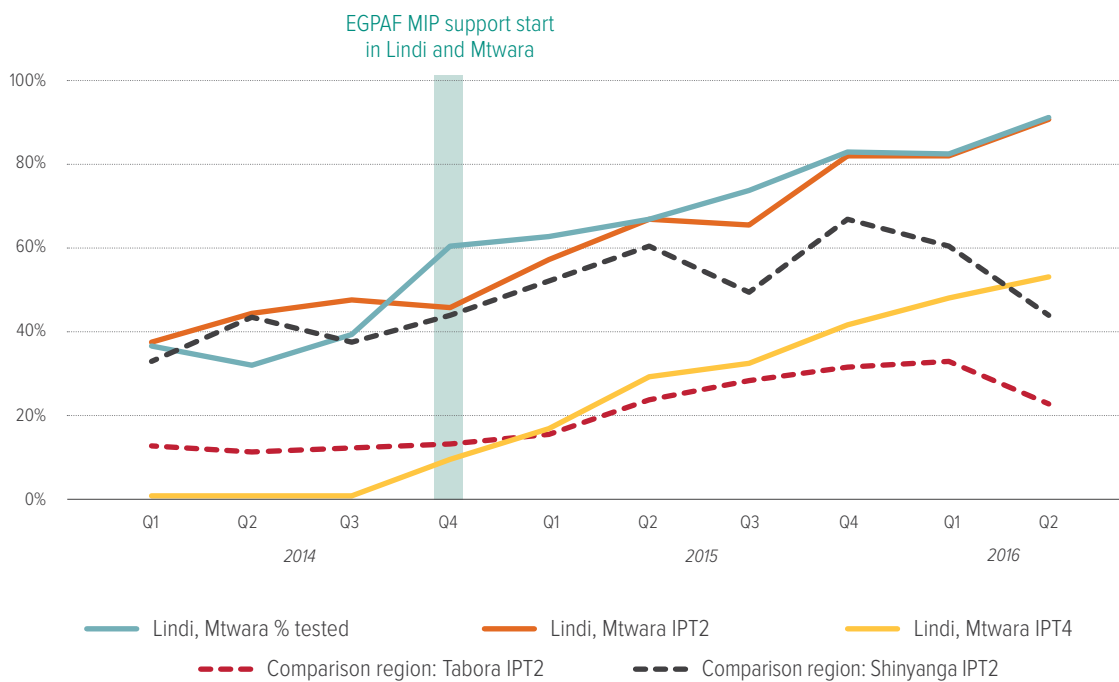


Figure 15. Malaria in Pregnancy indicators (testing and dosage/treatment) for EGPAF-support regions, compared with non-supported regions, 2014-2016

OTHER WOMEN'S REPRODUCTIVE HEALTH SERVICES

Cervical Cancer Screening

Cervical cancer is the leading cause of cancer deaths among women in Tanzania, and HIV-infected women are at far greater risk of having pre-cancerous lesions compared to HIV-negative women.¹¹ During LIFE, cervical cancer screening, prevention and referral services grew from virtual non-existence to a scaled national program initiative under the direction of the Reproductive and Child Health Services section of the MOHCDGEC. From the start, PEPFAR-supported implementing partners played a critical role in increasing access to this service through integration with HIV care and treatment.* Currently, EGPAF supports cervical cancer screening, prevention and treatment services at 42 facilities, including two with loop electrosurgical excision.

The cervical cancer program uses visual inspection with acetic acid (VIA), a simple approach where pre-cancerous lesions become visible after vinegar is applied to the cervix. Tanzania has adopted the *single visit approach* as the standard of care, meaning that all clients screening VIA-positive should receive same-day cryotherapy. About 4-6% of all women visiting RCH, with higher rates among HIV-positive women, screen positive and require cryotherapy treatment. About 2% of women identified with suspected cancer were referred to specialists for biopsy and further management, and 1% had large lesions and were referred for loop electrosurgical excision procedure at a designated hospital.

Table 3. Total women screened for cervical cancer from January 2013 to June 2016 in EGPAF-supported regions, and proportion screening positive for pre-cancerous lesions, suspect cancer or large lesions

	VIA SCREENED		
	HIV-POSITIVE (n=14,765) n (%)	HIV-NEGATIVE (n=48,625) n (%)	TOTAL (n=73,361) n (%)
VIA-positive	832 (5.6%)	1,645 (2.8%)	2,477 (4.2%)
Suspect cancer	354 (2.4%)	817 (1.4%)	1,171 (2.0%)
Large lesions	187 (1.3%)	234 (0.4%)	421 (0.7%)

Family Planning Integration

FP services have become better integrated into HIV care and treatment services through national policies on Positive Health Dignity and Prevention (PHDP), which emphasizes (among other things) the importance of FP screening, counseling and referrals, as well as HIV service provider documentation that a patient's FP needs and reproductive rights (i.e. safer pregnancy planning) were addressed during HIV care. Since the start of Option B+ in 2013, pregnant and postpartum women receiving care through RCH clinics have benefited from a "one stop shop" of RCH/FP/HIV care. In these clinics, clients are able to receive all services in one setting, enabling clients to spend less time at the clinic, and reducing the risk of an incomplete referral. Overall, the coverage of FP services (counseling, initiation, referral) among HIV-positive postpartum/lactating women increased over time from 80% to nearly 100% (Figure 16).

* In the last year of the LIFE Program, support to cervical cancer screening was provided under CDC funding to the care/treatment program.



Figure 16: Family planning services provided to HIV-positive lactating women



Objective 2

Strengthened Linkages, Referral Networks, and Community-Based Services to Ensure a Continuum of Care



Strong connections between the community and facility-based services can help raise awareness of and demand for HIV services, as well as address myths and HIV-related stigma that can negatively affect uptake and retention. The LIFE Program invested in these approaches with successful outcomes.

INTEGRATED HBC AND CHW MODEL

Community-based services to PLHIV through HBC providers is supported by LIFE, working in partnership with other implementing partners – Pathfinder International and the TRCS. The HBC program engages almost 2,200 providers. The TRCS supports four regions on mainland Tanzania and Zanzibar with technical assistance from Pathfinder International. EGPAF works with CHMTs directly to support HBC providers in Mtwara and Lindi.

The LIFE Program also funded MNCH CHW in three regions – Lindi, Tabora and Shinyanga. In these regions, CHWs serving 118 health facilities and catchment communities conducted home visits to RCH clients to promote MNCH services (early ANC entry, facility delivery, postnatal care), linkages and referrals to social and medical services, community sensitization and individual education and counseling. The majority of CHWs were also HBC providers who serve PLHIV clients. These lay health workers were cross-trained to support both HIV and PMTC/RCH services and clients, and promoted a continuum of care and an increased efficiencies and coordination of HIV and reproductive health services. The number of CHWs supported by LIFE grew from 100 in 2013 to 965 by 2016.

Both HBC providers and CHWs work under the supervision of health providers in both care and treatment and RCH clinics and are assigned to geographic areas to cover. They follow up with clients enrolled in services and help identify those in need of referrals to HTC, HIV, PMTCT or MNCH services in their communities; and provide community health promotion meetings for the general population. EGPAF and implementing partners uniformly encouraged facility-based supervisors to ensure that new clients were successfully linked to a CHW. The LIFE Program supports both HBC and CHW activities through in-service training, mentoring and by paying a volunteer stipend.

By mid-2016, HBC providers had reached over 94,000 clients, which is more than 130% of the project target. About 75% of clients reached through HBC received nutrition services or information, and about 50% received economic strengthening linkage services. From April 2014 until June 2016, CHWs had visited over 172,000 households and conducted almost 8,000 community meetings.

CLIENT TRACING

CHWs play a critical role in tracing HIV-positive clients who have become LTFU, resulting in re-engagement of a significant number, and improved documentation of client outcomes (e.g. vital status, refused service, self-transferred, etc.). Figure 17 shows how tracing efforts have increased over time. In the past year (July 2015 - June 2016), over 20,000 clients have been re-engaged in HIV care through tracing. A significant number (21%) were identified as “self-transfer”, meaning that they were found to be receiving care elsewhere. Were it not for tracing, these patients would have been classified as LTFU. However, even after tracing, 23% of patients were not located and remained classified as LTFU.

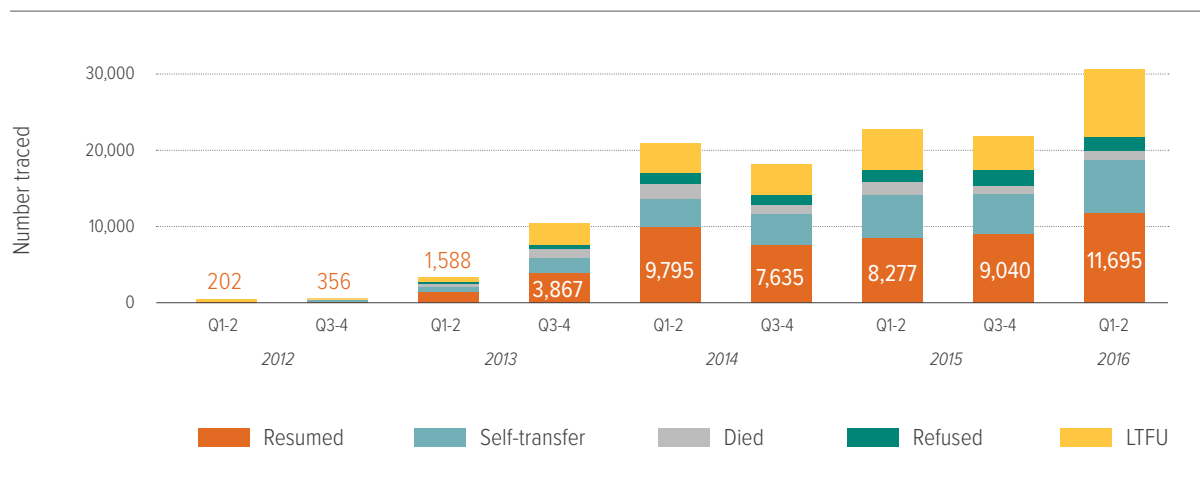


Figure 17: Trends in individuals traced by outcome

Figure 18 shows tracing outcome from 2012-2014 by type of client (ART, HIV-positive pregnant, pre-ART).[†] HIV-positive pregnant women and HIV-exposed infants were more likely to re-engage in care compared to non-pregnant ART clients or pre-ART clients, and self-transfer rates tended to be lower among pregnant women and HEI. HEI were more likely to be traced if LTFU compared to other groups, suggesting that they were viewed as a priority group for re-engagement.

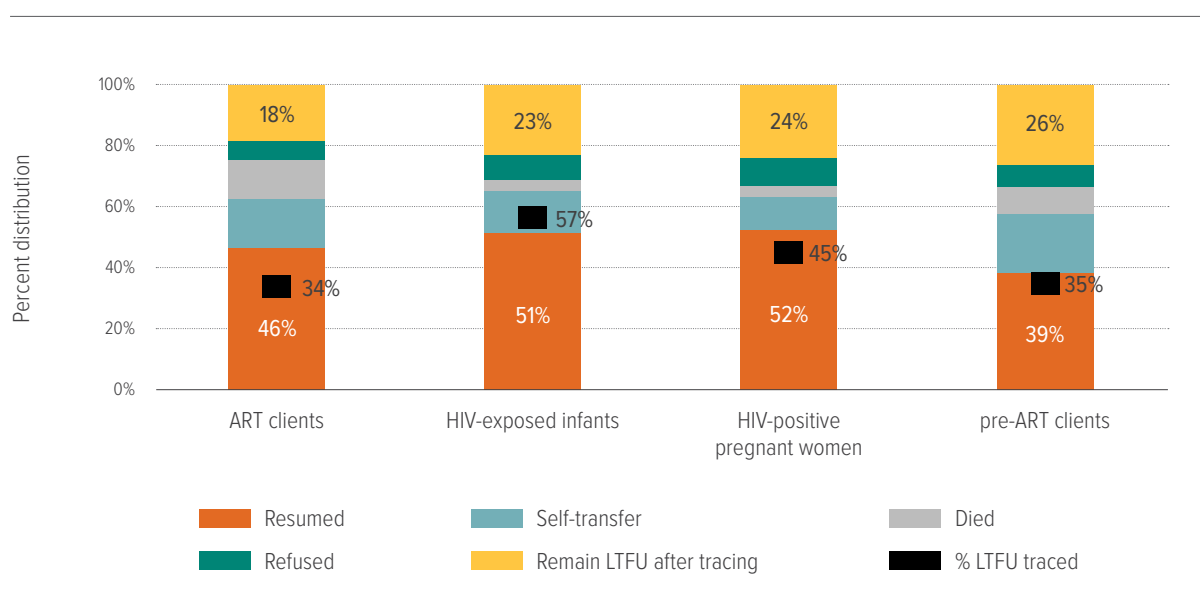


Figure 18. Tracing outcomes by patient type, 2012-2014

[†] Data not reported by these categories after 2014.

Objective 3

Sustainability of Health Systems and Transfer of Capacity to Local Partners



Achieving and sustaining comprehensive RCH and PMTCT services requires a strengthened district health system with the capacity to effectively govern, plan, implement and monitor service delivery. This includes innovative and responsive leadership, efficient service delivery models, timely and accurate health information, functional supply chains, sufficient numbers of trained health workers, and adequate financial resources transparently managed. The third LIFE Program objective focused on targeted support to health systems and capacity-building of local service delivery partners. This section details EGPAF's approach to supporting local government, training and clinical mentorship of managers and health providers; collaborations with local partners; supply chain strengthening and promotion of sound health information management systems, data use and QI.

STRENGTHENING DISTRICT HEALTH SYSTEMS THROUGH THE DISTRICT APPROACH

EGPAF was a pioneer in developing and implementing the district approach, a method now utilized by implementing partners and donors across several countries. Through this approach, EGPAF builds the capacity of CHMTs to advance locally-owned and locally-driven methods for providing and managing service delivery in their facilities and communities. EGPAF also supports the CHMTs through provision of resources for HIV service delivery through sub-grants.

According to local government structures in Tanzania, CHMTs are responsible for the provision of quality health care services within their districts, including providing overall direction for the district health system, setting priorities, and ensuring guidelines, policies and regulations are implemented. A cornerstone of the district approach is the sub-grant process that requires CHMTs to integrate their planning and budgeting for project-funded activities within their annual Comprehensive Council Health Plans and budget. This strategy avoids duplication, while ensuring accountability and sustainability.

Integrating EGPAF Support with the Comprehensive Council Health Plan

Tanzania follows a decentralized annual planning process, which occurs eight months prior to the Tanzanian fiscal year start, which begins in July. Health planning is led by the CHMT and involves consultations and mobilization of priorities from communities, facilities and other stakeholders. During LIFE, EGPAF participated in this annual planning in every supported district. These activities afforded opportunities for EGPAF to work in partnership with the CHMT to use program data to identify challenges and propose appropriate activities to be included in the Comprehensive Council

Health Plan and supported by EGPAF through the sub-grant. This approach fosters local ownership of the programs, better integration of EGPAF-supported activities with overall health plans, and contributes to the project management capacity of districts authorities, specifically the CHMT. Throughout LIFE, EGPAF allocated over USD 15 million to 71 sub-grantees - 64 district councils in 10 mainland regions, two faith-based hospitals, two local nongovernment organizations (NGOs), one international NGO, and two zones in Zanzibar.

HEALTH PROVIDER KNOWLEDGE AND SKILLS

There is a continual need for in-service provider training to ensure that national program guidelines are communicated effectively and health providers are equipped with necessary skills and knowledge to implement up-to-date health care guidelines. Rotation of providers across facilities and units, and updating or changing program guidelines is frequent causing challenges in maintaining a well-trained workforce, fully capacitated to meet national standards of care. Like most implementing partners, EGPAF supported districts to conduct required MOHCDGEC in-service health provider training in PMTCT services including HIV testing, monitoring and evaluation, MNCH, and FP. Separate CDC funds supported training in HIV care and treatment and laboratory support. Trainings in supply chain management, monitoring and evaluation, mentorship and supervision, and QI were supported by shared funding from USAID and CDC, if they targeted providers or topics serving both programs. All trainings followed national curricula, and used national trainers. Most of these trainings were fully implemented by the districts, according to their annual plan and approved budget. These activities were often co-funded by government and EGPAF funding.

To facilitate providers' competence and consistency in applying knowledge from formal training, districts are supported to organize quarterly continuum of care meetings. These gatherings are opportunities for peer-to-peer discussion of how providers have translated national guidelines and standards to their own site settings. They share experiences and help one another problem solve. Continuum of care meetings are also a good venue for providing refresher updates, and to identify and correct misperceptions or knowledge gaps among providers. Table 4 below shows the total number trained under LIFE funding by project year and topic.

Table 4. LIFE-supported trainings

TRAINING TYPE	NUMBER OF HEALTH WORKERS TRAINED
Adolescent Sexual Reproductive Health and Youth-Friendly Services	78
Baby-Friendly Hospital Initiative	115
Basic and Emergency Obstetric and Newborn Care	177
Basic PMTCT	1,095
Cervical Cancer Prevention	108
Community MNCH for CHW	553
Community nutrition	289
Community-based distribution of FP for CHWs	150
Community-based HIV testing and counseling	25
Distance Integrated Management of Childhood Illnesses	473
Focused ANC	174
FP (focus on postpartum, long-acting reversible contraception)	51
FP method choice and counseling	122

TRAINING TYPE	NUMBER OF HEALTH WORKERS TRAINED
HBC	674
HBC community support care	88
HBC database	30
HBC refresher	1,551
HIV viral load testing	81
Home-based HIV testing and counselling refresher	93
Intensified case finding and infection control (2 ICs)	470
Intensified case finding, infection control, IPT (3 ICs)	30
Kaizen leadership and management	187
Leadership and management	47
M&E DHIS for managers	32
M&E DHIS for service providers	120
M&E MTUHA refresher	190
M&E, documentation, data quality	571
mHealth Moby App orientation	27
Mother support groups	23
Nutrition Assessment and Counseling Services (NACS)	80
Option B+ Assessment and Response System Tool (LARS)	156
Peer education (for adolescent girls)	35
PNC	208
QI	40
Refresher course on community-based FP for facility service providers and community health workers	63
Refresher PMTCT	2,266
GRAND TOTAL	10,516

CAPACITY-BUILDING COLLABORATIONS WITH LOCAL ORGANIZATIONS

Recognizing the value attached to engaging local organizations, the LIFE Program worked at the consortium level with TRCS and AGPAHI in supporting program implementation. TRCS implemented the community-based HIV services in Tabora, Mwanza, Geita, Pwani and Zanzibar, while AGPAHI played a sub-partner role for PMTCT/RCH implementation in Shinyanga, Geita and Simiyu (see Table 5). Prior to sub-granting funds to these organizations, EGPAF contributed to their program and management capacity development through standardized assessments and technical assistance activities. In a structured manner, EGPAF organized and conducted collaborative workplanning, technical monthly reviews and quarterly technical meetings, all of which provided room for continual capacity-building in the

technical and financial management of the program components for which these organizations were responsible. In addition, EGPAF joined these local organizations' supportive supervision teams to provide on-site technical assistance and mentorship to their supported sites. At the organizational management level, EGPAF conducted quarterly and later biannual program management review and feedback meetings in which challenges were identified and solutions decided jointly.

TRCS and AGPAHI oversee implementation of 37 sub-grants from EGPAF to their regions. These partners, with EGPAF support, ensure that all agreed milestones and deliverables are implemented, and that all funds received through the sub-grant are incorporated into the district annual plans and the national financial systems.

Table 5. Local partner support by region

REGION	NUMBER OF SUB-GRANTEES	LOCAL PARTNER MANAGING THE SUB-GRANTS
Shinyanga	6	AGPAHI
Simiyu	5	AGPAHI
Pwani	7	TRCS
Mwanza	7	TRCS
Zanzibar	1	TRCS
Tabora	7	TRCS
Geita	4	TRCS & AGPAHI (2 each)
TOTAL	37	

STRENGTHENING SUPPLY CHAIN MANAGEMENT

Effectively planning and budgeting for commodities, including test kits and drugs, were key to minimizing stock-outs and interruptions to patient care and treatment. Through support from both USAID/LIFE and CDC funding, EGPAF utilized a comprehensive approach to strengthen supply chain management in Tanzania by mentoring pharmacy staff and district managers in proper use of supply chain management systems. Supply chain challenges affecting PMTCT services, funded by LIFE, are highlighted in this section, as well as the general capacity-building support EGPAF provided to supply chain systems.

EGPAF technical assistance focused on helping facility and district-based pharmacy staff and managers to effectively forecast commodity needs, ensure on-time ordering through national systems, track stock, and redistribute stock across facilities, districts and even regions when necessary. In 2013, EGPAF took advantage of emerging social networking tools by using a Google group to improve information sharing and problem solving among stakeholders, CHMTs, Medical Stores Department and the MOHCDGEC. The group started with 52 members and grew to over 200 users by the end of 2015. Over 100 topics have been discussed and more than 8,000 views have been logged. Through the group, EGPAF was able to promptly disseminate and discuss MOHCDGEC circulars, guidelines, dosing charts and system updates. Complementing information obtained through EGPAF's monitoring of essential commodities, such as rapid HIV test kits and DBS kits, this google group was instrumental in identifying redistribution needs and solutions and promoting a shared and transparent accountability for logical redistribution.

Persistent challenges in supply chain management remained. There were recurrent shortages of essential HIV commodities, in particular rapid HIV test and DBS kits; and under-filling of orders placed by facilities to the Medical Stores Department, which was sometimes, but not always, related to national shortages. Thus, despite efforts to build capacity in improved commodity management practices, forecasting, quantification and timely ordering, many facilities would consistently receive less than requested and were not always equipped to meet client needs or national standards.

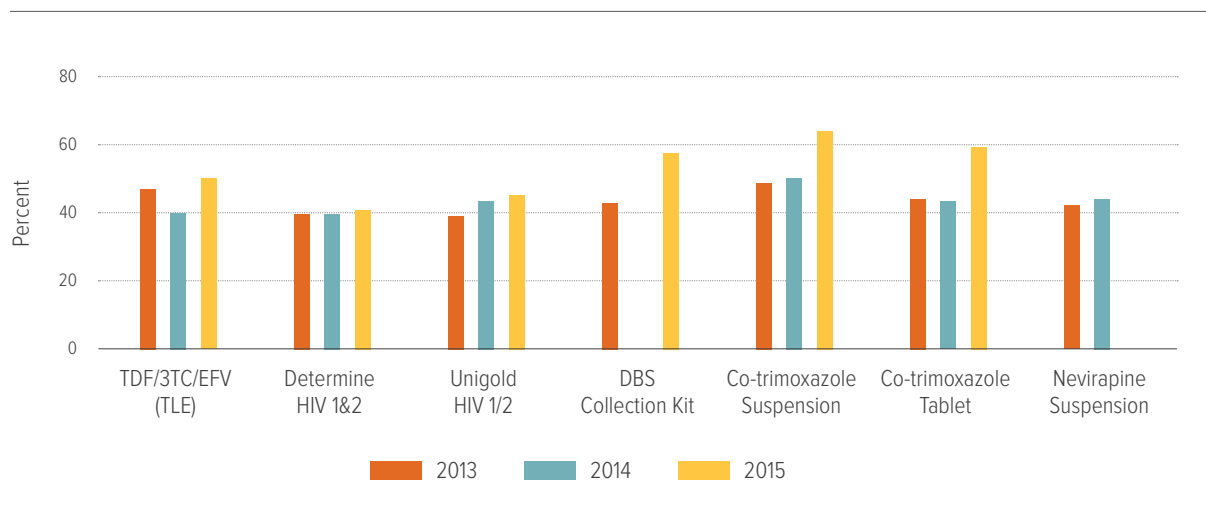


Figure 19. Proportion of reporting entities reporting at least one-quarter with a stock-out of a key PMTCT program commodity

Data from the electronic Logistics Management Information System (starting in 2013) showed the national picture of stock-outs for Option B+ ART regimen, DBS kits, and cotrimoxazole.^{***} These data illustrate significant supply chain challenges affecting all regions (not just those supported by EGPAF). Forty to sixty percent of sites (or districts) reported stock-outs of selected HIV commodities for at least one quarter in any year from 2013-2015. Cotrimoxazole, HIV rapid test kits, and first line ART (Tenofovir, Lamuvidine, Efavirenz) stock-outs have been persistent, and cotrimoxazole and DBS kits stock supply were particularly challenging in 2015. There is no observable trend over time to suggest that the stock-out challenges are decreasing.

ENHANCING HEALTH INFORMATION SYSTEMS AND DATA-DRIVEN QI

In order for CHMTs to effectively improve and support the district health system and the provision of quality health services within the district, they must guide an overall vision, follow policies and regulations guiding service delivery, set priorities, and ensure accountability. Each of these functions requires that CHMTs develop health information competencies that support complete, accurate and timely reporting at all facilities, proper data handling (entry, validation), and critical review. Lack of capacity in managing health information data is a major constraint contributing to poor annual planning and resource allocation.

Data Review for Verification and Program Monitoring

A two-pronged approach was taken to maximize data quality within EGPAF. Formal data quality assessments (DQA) were routinely done at site level, following national guidance and tools which were developed by the technical assistance partner, Measure Evaluation. Since 2008, EGPAF has worked to build capacity of regional and district staff on these DQAs, which focus on a quantitative comparison of recounted data from source documents to reported data. DQAs therefore assess the completeness, congruency and availability of reports against predetermined standards. Secondly, EGPAF provided different levels of support to facilities and districts in data reporting flows and data quality. At facility level, EGPAF encouraged the use of routine data validation algorithms and provided on-site mentoring, review of documentation and summary reports. At district level, EGPAF supported monthly validation reports in the web-based District Health Information System software, which were then shared back with facilities to respond to inconsistencies or gaps, so that quarterly data was relatively clean at the close of each quarter. This approach has led to improvement in completeness, timeliness and quality of data reported in the web-based District Health Information System. For example, the completeness of data for Arusha Region in 2012 was below 10% for all reports, but improved to >90% by 2015.

^{***} These data are derived from the eLMIS report of the top 100 stocked-out commodities, and the report is not available at region or zonal level.

In order to build capacity for data review and use in decision-making, EGPAF instituted a systematic quarterly approach to data analysis known as *Data Analysis Week*. After quarterly data has been collected from districts and run through EGPAF validation checks, EGPAF supported the R/CHMT to systematically review the data against targets and previous quarters, drilling down to site level to identify program gaps, data inconsistencies or poor performers. Through this exercise, R/CHMTs build their own capacity in data interpretation and use their data to direct supportive supervision or other program inputs.

Technical Support for Continuous QI

EGPAF supported implementation of the national quality management strategy and followed guidance from the national QI policy outlining the following standards: 1) focus on systems and processes not just the individual service provider, 2) use data to analyze service delivery processes, 3) learn through small, incremental changes for continuous quality improvement (CQI), 4) apply QI to processes to improve efficiency and effectiveness of services and learn from best practices. In mid-2012, EGPAF adopted the recommended collaborative QI approach, which formed multi-site learning groups that regularly met to present their quality improvement data and share lessons learned. By June 2016, EGPAF was supporting 28 district QI teams and 167 sites through active Work Improvement Teams (see Table 6).

Table 6. LIFE-supported QI sites

REGION	ACTIVE FACILITY QI TEAMS	ACTIVE CHMT QI TEAMS
Arusha	32	6
Kilimanjaro	26	5
Lindi	32	7
Mtwara	21	6
Tabora	44	3
Shinyanga	14	3
TOTAL	167	30

In the first *learning session*, participants from sites and districts received training in the QI approaches, tools, and the list of priority indicators recommended in the national guideline. An *action period* followed the learning session during which site-based work improvement team members were expected to meet monthly to review data for selected indicators using registers and CTC patient cards, discuss progress and challenges, design *change* interventions to improve the indicator's performance, and document minutes for the QI records file. Typically held bi-annually, each action period was followed by a learning session, which allowed all collaborative member sites to share experiences, orient new team members, and review progress and lessons learned from their *tested changes*.

Meanwhile, CHMT QI teams were expected to provide technical assistance to the site-based work improvement teams through coaching, supportive supervision and mentorship. CHMT involvement in the learning sessions was found to be critical for maintaining QI momentum, and can make the difference between sites that document steady improvements on their monitored indicators and sites that show little improvement.

EGPAF supported the establishment of QI teams in most districts, and most high volume PMTCT/care and treatment sites were selected to be trained in QI methods. At site level, EGPAF supported participatory learning sessions with Work Improvement Teams, and collaborated with the national QI partner, University Research Co., LLC. to provide on-site mentoring and supervision.

Sidebar 3. QI approach increases access to early testing of HIV-exposed infants

From 2013 to 2014, 41 Work Improvement Teams trained in CQI identified early HIV-exposed infant testing as an area of work/indicator of needed improvement. An evaluation of the effect of CQI initiatives was conducted using routinely reported data for HIV-exposed infant testing within two months (ratio of HEI tested/HIV-positive women identified in that quarter) prior to program support, during start-up activities, and after the process had become established at each site. Data from January 2012 to March 2015 were included, and each site contributed 4 quarters to the 'before' period and from 1-8 quarters after implementation. Interventions that sites adopted included:

- Orientation of RCH staff on screening RCH card for EID during registration
- Provide postnatal counseling to HIV-positive mothers on the importance of EID
- Appointment scheduling for EID in HIV-positive mother follow-up
- Attaching EID card to the mother's care and treatment record
- Management of DBS test kit stock within the region
- Monthly monitoring of EID (with quarterly coaching), making use of the QI excel spreadsheet to record and review site performance.

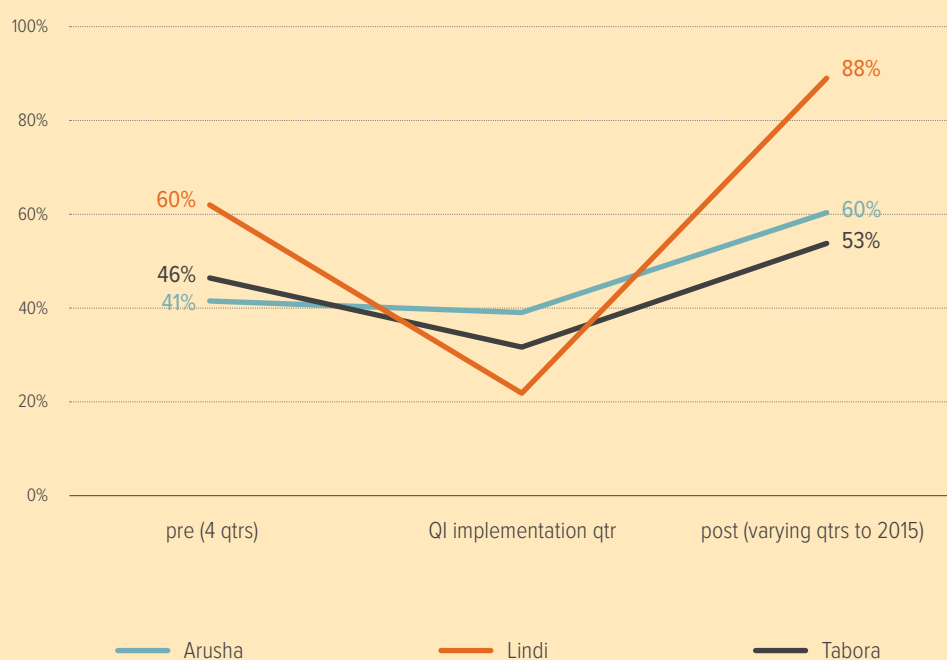


Figure 20. HEI two-month testing at 41 CQI sites before, during and after implementation



Lindi out-performed other regions in their EID and EGPAF program officers speculated that this was due to the active participation of RHMT members in the learning sessions which clearly demonstrated their commitment to improving EID. The drop observed during the implementation quarter in all regions could be attributed to better documentation or more complete measurement of the indicator after QI training. Variation in site performance and reasons behind lack of indicator response at more than one-third of all sites may be due to the inconsistent commitment to the QI process, such as lack of attendance to learning sessions, low levels of R/CHMT engagement and follow-up, or staff turnover affecting the site-based work improvement team membership and capacity.

Interpretations of these findings point to the importance of higher level commitment to the process and monitoring of results. Without the serious engagement of R/CHMT in support the work improvement teams on site, challenges such as staff turnover, poor documentation, lack of knowledge or skills, and lack of staff commitment will never be overcome. Prior to the QI program support, EID ranged from 41% to 60%. During the implementation quarter, a drop in performance was observed, followed by an increase in the quarters after QI ranging from 53% to 88%. Lindi observed the steepest increase compared to Tabora and Arusha. Analysis by site showed that 25 sites performed well with indicator increases of 10% or larger, but 16 sites did not perform well (increase < 10%, or decrease).

Key Challenges and Recommendations



Photo: James Pursey/EGPAF, 2012

CHALLENGES

- There continues to be human resource and health systems constraints that have significant effects on health provider performance, quality of care, and unmet needs for HIV and RCH services. Primary challenge areas are understaffing of facilities, frequent stock-outs or low stock of essential medicines and supplies, and poor health facility infrastructure or lack of basic equipment.
- The Option B+ program launch was ambitious and achieved significantly increased access to ART for pregnant and lactating women, but the fact that Option B+ services are largely provided by nurses or lower cadres in primary health facilities, many of which are remote and have no electricity, means integration of Option B+ clients into the HIV clinic's electronic reporting systems is an ongoing challenge.
- CQI support to facilities can result in dramatic improvement in monitored indicators, but provider commitment is required, and low CHMT interest or support and/or turnover in health providers disrupts CQI activities.

RECOMMENDATIONS

- Integrated services (e.g. RCH/Option B+/HIV; HIV/TB; HIV/FP; HIV-RCH; HIV-RCH/nutrition) exist in many facilities, but require commitment and specialized support from facility managers, districts, implementing partners, and national systems to ensure staffing; training, supplies and equipment are in place to support such service delivery approaches.
- Option B+ is an opportunity to strengthen MNCH/PMTCT services with an eye toward the continuum of care for mother-baby pairs rather than the cross-sectional view typical of current RCH program indicators. Also, Option B+ may facilitate better child wellness service integration postpartum (during mother-baby follow-up).
- A large proportion of women entering HIV treatment services through PMTCT are adolescents or young women, and tailored support is required to retain these young women in care.
- CHWs play a vital role in supporting comprehensive HIV care and enabling uptake of facility-based care initiatives and service delivery. EGPAF and other implementing partners should continue to advocate for expanding CHW roles in HIV testing, FP, ART refilling, case finding (index client HIV testing, TB screening/referral), and supporting ART retention.
- Systematic quarterly planning with CHMTs using quarterly data reviews with scorecards to benchmark progress on key indicators can help CHMTs to hold sites accountable for their performance and improve priority setting through more focused supervision and targeted mentorship.
- The absence of a national biometric, or otherwise functional and comprehensive unique identification system mitigates monitoring of HIV-positive patients and their health outcomes over time. Investments are needed in systems that maximize access to and the use of internet-reliant data transfer, synchronization of database updates, and searchable (networked) patient databases of all care and treatment clients to facilitate transfer of records, identification of self-transfers, and duplication of those re-engaging in care after LTFU.
- Digital communication platforms, such as mobile phone applications, web-based dashboards to custom visualize data and social media supportive supervision/mentoring are innovative adjuncts that can improve access to information and data communication.

References

- ¹ National Bureau of Statistics, 2016. The United Republic of Tanzania 2015. Tanzania Figures, Dar es Salaam June, 2016. Accessed <http://www.nbs.go.tz/> in October 2016.
- ² The Joint United Nations Programme on HIV and AIDS (UNAIDS). Tanzania HIV Estimates. 2015. Accessed <http://www.unaids.org/en/regionscountries/countries/unitedrepublicoftanzania> in August 2016.
- ³ National Bureau of Statistics, 2007-2008 and 2011-2012 and Demographic Health Survey-Malaria Indicator Survey 2015-2016. Accessed <http://www.nbs.go.tz/> and <http://www.dhsprogram.com/publications/Publication-Search.cfm> in September 2016.
- ⁴ Tanzania Service Provision Assessment (TSPA) Survey. Ministry of Health and Social Welfare (MOHSW), Dar es Salaam; Ministry of Health, Zanzibar; National Bureau of Statistics; Office of Chief Government Statistician (Zanzibar); Inter City Fund (ICF) International USA. 2007.
- ⁵ National Bureau of Statistics, THMIS 2007/8 and THMIS 2011/12.
- ⁶ MOHCGDEC PMTCT M&E Technical Working Group (TWG). PMTCT Annual Program Report – Tanzania Mainland, 2015.
- ⁷ MOHSW, TSPA 2014/15, Dar es Salaam; Ministry of Health, Zanzibar; National Bureau of Statistics (DSM); Office of Chief Government Statistician (Zanzibar); ICF International USA. 2016.
- ⁸ MOHSW. PMTCT National Treatment Guidelines. 2011.
- ⁹ MOHSW, National Bureau of Statistics, 2016. Tanzania Service Provision Assessment Survey. 2014/15.
- ¹⁰ MOHCDGEC, PMTCT M&E TWG, 2016. PMTCT Annual Program Report – Tanzania Mainland 2015.
- ¹¹ Chambuso. Influence of HIV/AIDS on cervical cancer: A retrospective study from Tanzania. *Journal of Global Oncology*. Published online on jgo.ascopubs.org on June 1, 2016.



EGPAF-TANZANIA

Plot #8 & 10, Off Haile Selassie Road
Oyster Bay
Dar Es Salaam, Tanzania

P +255 22 260 1692

WWW.PEDAIDS.ORG