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THE CARE AND TREATMENT FOR SUSTAINED SUPPORT (CATSS) PROJECT

FINAL REPORT: 2016–2019

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EXECUTIVE SUMMARY

The three-year Care and Treatment for Sustained Support (CaTSS) project was implemented by Management Sciences for Health (MSH) in close partnership with the Government of Nigeria and local partners. The project was funded by the US President's Emergency Plan for AIDS Relief (PEPFAR) through the US Agency for International Development (USAID) and brought about significant improvements in case finding and treatment outcomes for HIV/AIDS and tuberculosis (TB) in the North West Nigeria region. To support self-reliance and sustainability of the gains, the project implemented a peer mentorship program that transferred critical HIV patient and program management skills to frontline health workers and state ministries of health. This initiative enhanced the capacity of the host state government to both manage and lead HIV/AIDS and TB programs and provide sustainable, integrated, quality HIV/AIDS and TB services in their health facilities.

While CaTSS was originally intended to sustain the gains of the previous PEPFAR-supported HIV/AIDS and TB program in the region, the project was implemented with the same rigor as other PEPFAR scale-up projects and assigned equally ambitious targets. In terms of reach across the treatment cascade, the project tested 1,093,092 people and supported nearly 35,000 of those who tested positive to adhere to lifesaving antiretroviral treatment. By the end of project, more than 85% of the individuals on treatment successfully suppressed the virus, and 77% of the individuals who suppressed the virus achieved an undetectable status and therefore cannot transmit the virus to others.

These results were achieved in a region characterized by a relatively low average HIV prevalence of 2% in people between 15 and 64 years of age. Prevalence among the same age group was further calibrated downward to between 1% (Kwara State) and 0.4% (Sokoto State) by the 2018 National AIDS Indicator and Impact Survey (NAIIS).

During the life of the project, CaTSS successfully managed the introduction of new policies such as Test and Start and new programmatic requirements such as high-frequency data reporting. The CaTSS-supported deployment and use of the electronic medical record (EMR) system in all project-supported facilities significantly improved the project's ability to respond to the demand for frequent data reporting, ensure patient-centered quality of care, and adaptively manage the program. This positioned CaTSS to improve testing efficiencies, linkage, and retention, as well as viral suppression as highlighted in the key results section of this report.

The critical challenges, lessons learned, and recommendations for addressing HIV/AIDS and TB programming in North West Nigeria highlighted in this report guide the way for sustainable programming and bridging the gaps in unmet needs in the region.

INTRODUCTION

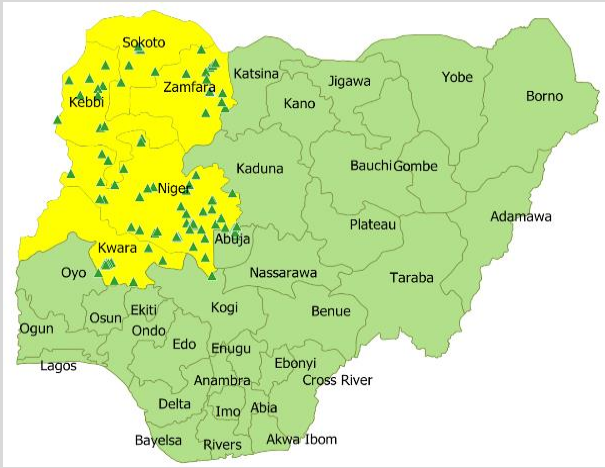
THE CARE AND TREATMENT FOR SUSTAINED SUPPORT (CATSS) PROJECT

The Care and Treatment for Sustained Support (CaTSS) Project was funded by the US President's Emergency Plan for AIDS Relief (PEPFAR) through the US Agency for International Development (USAID) and implemented by Management Sciences for Health (MSH). The project was implemented between November 15, 2016, and December 31, 2019, in five states in North West Nigeria: Niger, Kwara, Kebbi, Sokoto, and Zamfara.

Through CaTSS, USAID/PEPFAR, the Government of Nigeria (GON), MSH, and local partners collaborated to strategically support the maintenance and uninterrupted delivery of quality HIV/AIDS and tuberculosis (TB) care and treatment services. These services were integrated into Nigeria's health system to achieve USAID Nigeria's Development Objective 2: "a healthier, more educated population in targeted states." CaTSS supported the Government of Nigeria in its efforts to achieve HIV epidemic control and reach the ambitious 95-95-95 goals: 95% of people living with HIV (PLHIV) diagnosed, 95% of diagnosed PLHIV on antiretroviral therapy (ART), and 95% of PLHIV currently on ART virally suppressed. This final report summarizes the project's accomplishments, key lessons learned, and recommendations for achieving epidemic control in low HIV prevalence areas of Nigeria.

PROJECT SCOPE AND OBJECTIVES

The overall goal of the CaTSS project was to strategically support the maintenance and uninterrupted delivery of quality HIV/AIDS and TB care and treatment services integrated into the host country health system. Originally designed as a two-year project (November 2016–November 2018), CaTSS received two extensions to its period of performance: one no-cost extension through March 2019, followed by one costed extension through December 2019.



CaTSS states (yellow) and supported health facilities (green triangles)

The original CaTSS program description had three result areas:

1. Sustained access to and utilization of HIV/AIDS and TB care and treatment services
2. Increased host government capacity to plan, manage, coordinate, and lead HIV/AIDS programs at state and local government levels
3. Improved capacity of health care facilities to provide sustainable, integrated, quality HIV/AIDS and TB services

With the March 2019 project modification, these three result areas were replaced with the following two result areas:

1. Sustained access and improved coverage of high-quality, comprehensive HIV/AIDS treatment, care, and related services through improved efficiencies in service delivery
2. Improved quality and integration of HIV/AIDS services

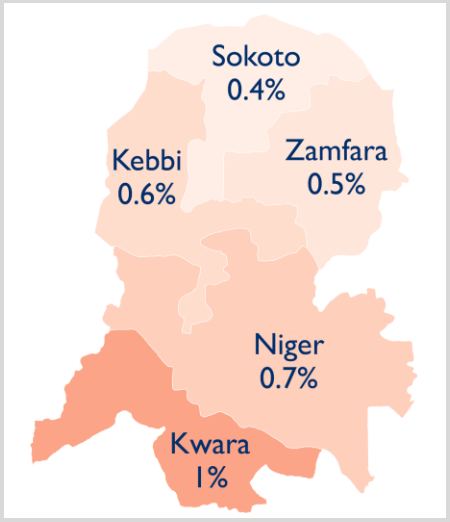
CaTSS supported 44 local government areas (LGAs) and 107 facilities (41 comprehensive care and treatment [CCT] sites and 66 prevention of mother-to-child transmission [PMTCT] sites) throughout the five project-supported states during most of the life of the project. During the third project year, CaTSS transitioned 37 low-yield PMTCT facilities (those that identified fewer than 20 new positive patients in 12 months) to state governments. This is in addition to transitioning 10 CCT and 7 PMTCT facilities in Niger state to the new PEPFAR/USAID-funded Meeting Targets and Maintaining Epidemic Control - Reaching Impact, Saturation, and Epidemic Control (TMEC-RISE) project.

PROJECT CONTEXT

MSH was awarded the CaTSS project to sustain and build on the achievements of the Prevention and Organizational Systems–AIDS Care and Treatment (Pro-ACT) project (July 2009–November 2016), which, at its close, operated in the same five states as CaTSS. When CaTSS began, the five states in which it operates were designated by PEPFAR as "sustained response" states, meaning that project activities were confined to designated health facilities with an emphasis on maintaining patients already enrolled on ART in treatment and providing HIV testing services (HTS) only to those who requested it or who presented at the facility with symptoms. This is in contrast to other states in Nigeria that were designated as "scale-up states," where community-based case finding, linkage to care, and treatment initiation activities were supported.

The original design of the CaTSS project was based on an estimated HIV prevalence rate of 2% in the CaTSS-supported states among adults between the ages of 15 and 64. In 2018, however, the USG supported the GON to implement the Nigeria AIDS Indicator and Impact Survey (NAIIS), a national household-based survey that assessed the prevalence of HIV and the coverage and impact of HIV services and measured HIV-related risk behaviors.

The 2018 Nigeria AIDS Indicator and Impact Survey (NAIIS), released in March 2019, showed that the HIV prevalence among adults aged 15–64 was approximately half of that previously measured but still stood at 1.5% nationally. According to the NAIIS report, the average HIV prevalence in the North West region among adults aged 15–64 was recalibrated from 2% to 0.6% (females = 0.7%; males = 0.4%), making the North West a low-prevalence region characterized by difficulty in finding people who are infected and have yet to be enrolled in treatment.



HIV prevalence in CaTSS-supported states, North West Nigeria, NAIIS 2018

Consistent with CaTSS programmatic data, a stark gender disparity in HIV prevalence data was revealed: women aged 35–39 years are more than six times more likely to be living with HIV than men (1.9% versus 0.3%) in the same age group.

PROGRAMMATIC SHIFTS

In 2019, following the NAIIS results, PEPFAR changed its designations of intervention states from "scale up" and "sustained response" to "green", "yellow", and "red" states based on level of unmet need and drive for treatment saturation. With relatively low prevalence in the North West region, all five CaTSS states were designated as "yellow" states. Just before the close of the CaTSS project, USAID requested the project to submit a plan for "surge" activities as a proposal to saturate Niger and Kwara states and achieve epidemic control.

To achieve epidemic control in the country, the PEPFAR strategy shifted to more intensely focus on high-frequency reporting (HFR) and granular facility-level data analysis to promptly identify gaps in reaching programmatic targets and drive programmatic course corrections across the HIV care and treatment cascade. USAID/PEPFAR also moved from an entirely paper-based system for monitoring and evaluation and patient care to the use of an electronic medical record (EMR) system in all supported health facilities. This shift facilitated the HFR and interagency performance tracking using the online and real-time National Data Repository (NDR).

In the last year of the CaTSS project, USAID Nigeria began development of its Country Development Strategy (CDS) for 2020 to 2025. The CDS will focus on a re-orientation of USAID strategies, partnership models, and program practices to achieve greater development outcomes and work toward a time when foreign assistance is no longer necessary. This is in line with the Journey to Self-Reliance, the 2017 USAID policy framework that highlights how USAID intends to empower host country governments and its partners to achieve locally sustained results, mobilize public and private revenues, strengthen local capacities, and accelerate enterprise-driven development.

Other strategic programmatic shifts that occurred within the life of the project were:

- "Test and Start" (launched in the revised 2016 guidelines), which discontinued eligibility criteria for ART initiation and moved to same-day initiation for every newly identified positive patient
- Transition to optimized ART regiments in children and adults living with HIV
- Introduction and scale-up of viral load (VL) testing as a requirement for patient quality of care
- Introduction of Enhanced Site Monitoring (ESM) that was characterized by more frequent support visits and mentorship by the USAID HIV/AIDS technical team to CaTSS-supported health facilities
- Introduction of Index Case Finding as a testing modality with a target set at 30% of all newly identified positives
- Recalibration of the definition of TX_CURR from 90 to 28 days past medication pickup due date
- Introduction of HIV self-testing, HIV recency testing, and cervical cancer screening among HIV-positive women

PROJECT APPROACH

To help CaTSS implementation states reach the 95-95-95 targets, the project applied six major strategies:

- Targeted and efficient HIV testing, including index case testing, use of HIV risk stratification checklists for provider-initiated testing and counseling, and distribution of rapid test kits based on yields
- Faster linkage to care and treatment, including patient-support mechanisms such as peer escorts; same-day initiation of ART; and integration of HIV services with antenatal care (ANC), labor and delivery, family planning, and TB services
- Differentiated service delivery models that support ART adherence and retention in care, including transition to the recommended drug regimen (tenofovir/lamivudine/dolutegravir [TLD]), and multi-month dispensing of antiretrovirals (ARVs) for patients' convenience and procurement cost savings
- Optimization of viral load testing services, including Undetectable = Untransmittable messaging to reduce stigma and discrimination against PLHIV
- Enhanced site management and EMR for improved client care
- Continuous engagement of GON and local counterparts through a customized technical assistance and mentoring approach that reinforces ownership while transferring requisite skills and knowledge for HIV patient management

CaTSS deployed a data-driven, patient-centered, and cost-effective approach focused on the delivery of efficient HIV services in all supported facilities, customizing the level and emphasis of technical assistance based on patient volume, positivity, and timing of transitioning of low-yield facilities to the GON. Using a collaborating, learning, and adapting (CLA) approach, the project conducted granular, high-frequency data reporting and root cause analyses and adapted its management and implementation approaches to respond to the results and continuously improve performance.

The CaTSS project also drove a continuous quality improvement (CQI) system and optimization of services. Working in partnership with GON counterparts at the state, LGA, and facility levels, the project strengthened planning, implementation, reporting, and analysis of interventions. This helped to reinforce local ownership and leadership of activities and supported institutionalization of best practices and sustainability of CQI and application of health management information systems and OpenMRS as a sustainable EMR system.

RESULTS

Major results of the project along with PEPFAR targets for achieving epidemic control in the North West region of Nigeria are presented in the following sections.

FIRST 95: 95% OF PEOPLE LIVING WITH HIV KNOW THEIR HIV STATUS

Over the life of the project, CaTSS tested 1,093,092 people and identified 28,137 new PLHIV. Total numbers are depicted in Figure 1 and positivity rates in Figure 2.

FIGURE 1: NUMBER OF PEOPLE TESTED BY QUARTER (FY17–FY20)

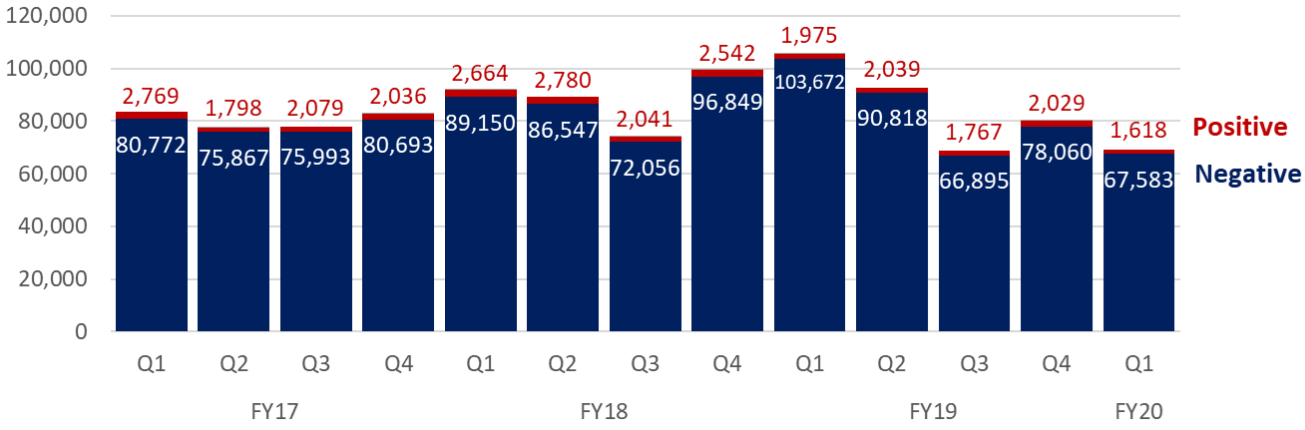
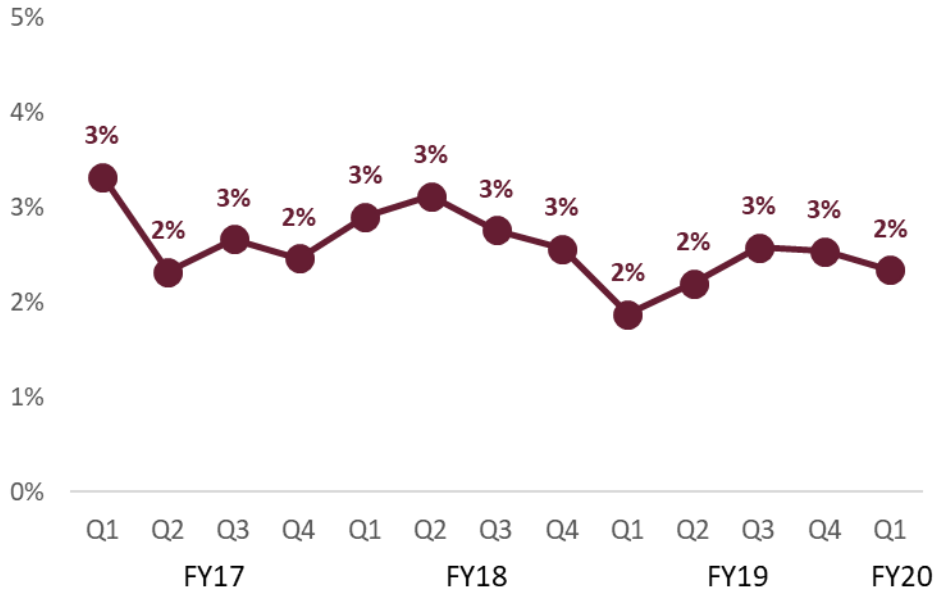


FIGURE 2: POSITIVITY RATE (FY17–FY20)



TARGETED TESTING YIELDS RESULTS

To achieve the first 95, CaTSS supported the GON to scale up index case testing (ICT) with the aim of reaching all sexual partners and biological children of newly identified males and females. Through ICT, a person with confirmed HIV infection (index case), upon consenting, is counseled to either contact or receive project assistance to contact their biological children and sexual partners to see if they will accept an HIV test. The approach has proven to be a key intervention in diagnosing PLHIV and enrolling and sustaining them on treatment and care in other settings. ICT was CaTSS' highest yielding testing modality. By end of FY19, 93% of newly identified positive clients at CaTSS-supported facilities were offered ICT, which resulted in a 19% positivity yield. This yield grew from the 4% recorded in the last quarter of FY18. This trend was maintained in the first quarter of FY20, which showed an improvement in the offer rate to 96% as well as an improved positive rate of 22%.

FIGURE 3: INDEX CASES, TESTED CONTACTS, POSITIVES, AND POSITIVITY RATES

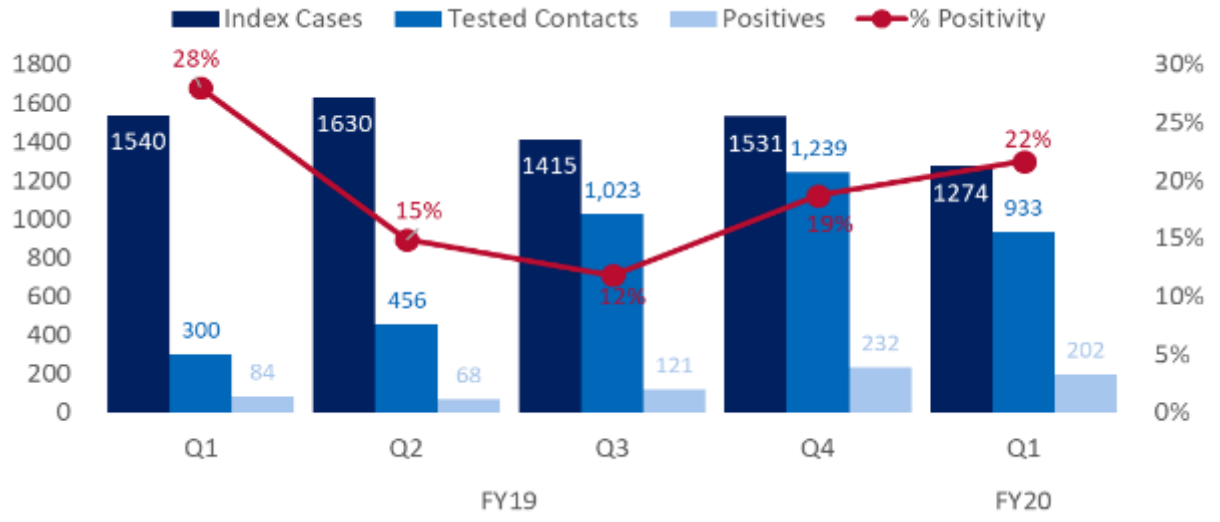


Photo: Gwenn Dubourthournieu

EFFICIENT USE OF RESOURCES

To ensure efficient use of PEPFAR-provided HIV rapid test kits (RTK), the project used program data to prioritize testing points such as TB Directly Observed Therapy Short Course (DOTS) clinics, ANC, medical male and pediatrics wards, and HCT units. Due to the consistent low yield, the project discontinued testing in blood banks. Facility staff were also trained on and applied the PEPFAR HIV risk stratification tool to optimize yield from the general population especially in the outpatient departments of support facilities. To avoid expiration of short-dated RTKs, CaTSS routinely analyzed and redistributed them to facilities based on consumption patterns.

CaTSS also optimized the health workforce through a team-based approach. The team engaged a cadre of part-time case managers, many of whom were young and HIV positive. This cadre of human resources had a significant impact on addressing linkage gaps within the age group of 25–29 years. Case managers were trained to provide and maintain a high quality of care for a fixed pool of clients. They succeeded in improving the client facility visit experience, increasing the number of appointments attended, increasing viral load testing uptake, and improving adherence to treatment as demonstrated in the project's overall performance.

Photo: MSH Staff

SECOND 95: 95% OF PEOPLE WHO KNOW THEIR STATUS ARE ON TREATMENT

LINKING PATIENTS TO TREATMENT

CaTSS initiated 22,727 newly diagnosed HIV-positive patients on ART and followed up with 41,321 current ART users to ensure treatment adherence. The project increased the percentage of new HIV-positive individuals linked to HIV treatment from less than 65% to more than 95%, achieving a 98% linkage rate in the final quarter. The hard work of the case managers and the strong oversight provided by CaTSS staff contributed to the high linkage rates. Peer navigation services provided by the case managers, especially at high-volume facilities, was also a contributory factor as they physically escorted new identified positive clients from their point of testing to the point of retesting and then to the point of enrollment on ART. This included linking clients identified at PMTCT sites to CCT sites for enrollment into ART. Peer navigators were also often PLHIV. Marked improvements in the linkage rate were recorded in Sokoto and Zamfara (Figures 5, 6). These improvements were largely due to CaTSS successfully eliminating key barriers to linkage, such as user fees for baseline investigation in tertiary institutions and non-availability of same-day issuance of HIV test results.

FIGURE 4: CATSS AGGREGATE LINKAGE RATES (FY18–FY20)

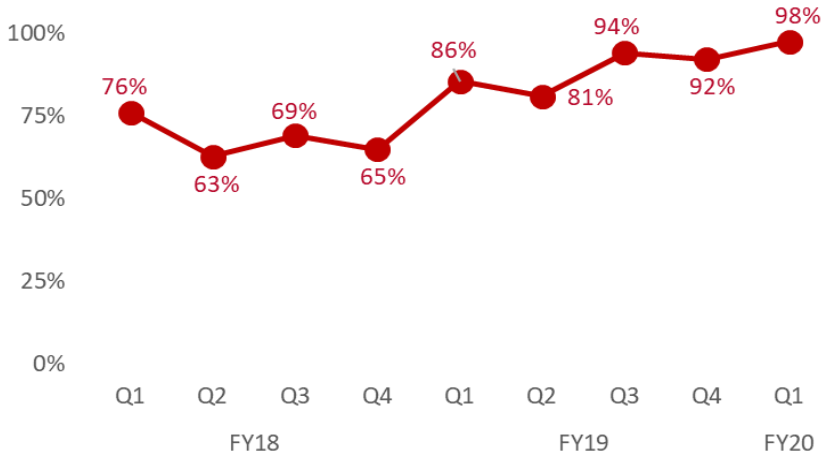


FIGURE 5: LINKAGE RATES, SOKOTO (FY18 Q1–FY20 Q1)

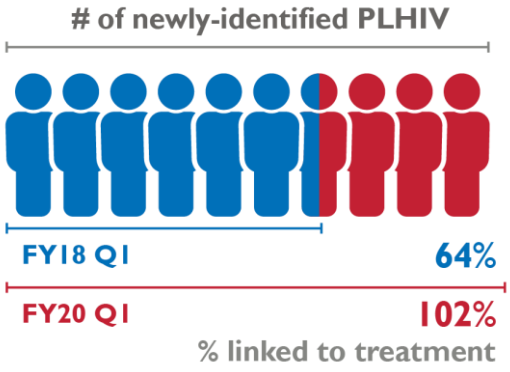
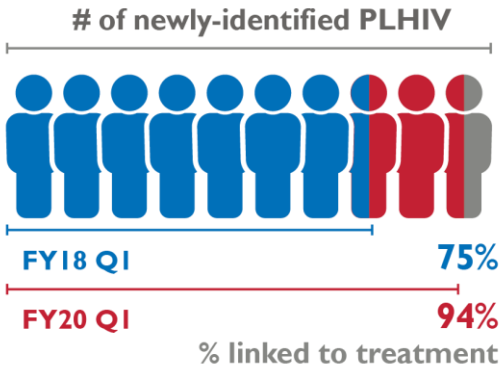


FIGURE 6: LINKAGE RATES, ZAMFARA (FY18 Q1–FY20 Q1)



Removal of User Fees

The Usmanu Danfodio University Teaching Hospital (UDUTH), whose 46.2% linkage rate in FY19 Q3 was largely responsible for poor overall linkage for Sokoto state, recorded a significantly improved linkage rate of 93.5% in FY19 Q4. This improvement can be directly attributed to sustained advocacy to the management of the hospital on the importance of removing user fees for renal function baseline investigations, a longstanding barrier to ART initiation at this facility. The advocacy was driven by evidence to support the fact that the optimized ART regimen did not pose an immediate risk of renal impairment for the clients. The removal of this barrier also facilitated significant improvements in the peer navigation service provided at UDUTH.

STRENGTHENING HIV AND TB INTEGRATION

The total number of PLHIV reached with TB preventive therapy (TPT) during the life of CaTSS was 1,106 (TX_TB_N). TPT drives were used in CaTSS-supported states to improve the uptake of TPT using INH for eligible PLHIV who screened negative for active TB. Beyond commencing INH for eligible clients, the project also instituted measures to improve the six-month completion rate for TPT by ensuring synchronization of ART and INH drug pickup dates, adherence counseling, and improved documentation. This resulted in an increased TPT completion rate from 49% at the beginning of FY19 Q3 to 78% in FY20 Q1.

MEETING THE NEEDS OF PATIENTS TO STRENGTHEN ADHERENCE AND RETENTION

CaTSS made great strides in scaling up multi-month scripting and dispensing of TLD, the ARV regimen recommended for first- and second-line treatment, so that patients who were eligible did not have to return to a facility on a monthly basis for medication pickup. Clients who met the eligibility criteria received a three-, four-, or six-month supply at a time. By December 2019, CaTSS had placed 36,475 clients on TLD (13,166 males and 23,309 females), representing more than 83% of the project's overall client load of 43,946.

Photo: MSH Staff

Reaching more women with TLD

At the International AIDS Society Conference in July 2019, the World Health Organization (WHO) affirmed dolutegravir (DTG) as the preferred first-line ARV regimen for all adults and adolescents, including women and adolescent girls of childbearing age, with appropriate counseling on potential risks and benefits. CaTSS worked with facility staff to transition women to the optimized regimen known as TLD. In FY19 Q4, the project recorded an increase of more than 150% in TLD uptake among women.

PREVENTING MOTHER-TO-CHILD TRANSMISSION

CaTSS focused on sustaining the delivery of equitable and client-centered PMTCT services to HIV-positive pregnant or breastfeeding women and their infants, with the overarching goal of eliminating mother-to-child transmission of HIV in project-supported sites. In line with this, CaTSS conducted supportive supervisory, mentoring, and coaching visits to health facilities in the five project states and provided system-strengthening platforms geared toward sustainable quality HIV/AIDS care, treatment, and prevention services. In the life of the project, 415,624 pregnant women who attended ANC in supported health facilities were provided with HTS with their HIV status made known to them on the same day (PMTCT STAT_N). Of the newly identified HIV-positive pregnant women, 97.3% (4,652/4,782) were started on ART to prevent mother-to-child transmission of HIV.

The project prioritized the uptake of the LPV/r-based optimized regimen as the preferred first line for children as recommended by national guidelines. During the life of the project, CaTSS recorded 1,914 new and transitioned pediatric clients currently using optimized regimens (ABC+3TC+LPVr, ABC+3TC+DTG, and TDF+3TC+DTG) in facilities across all five states. This number is from a total of 2,933, which represents 65% of pediatric clients in that age group using the optimized regimens.

ENGAGING PATIENTS AND COMMUNITIES

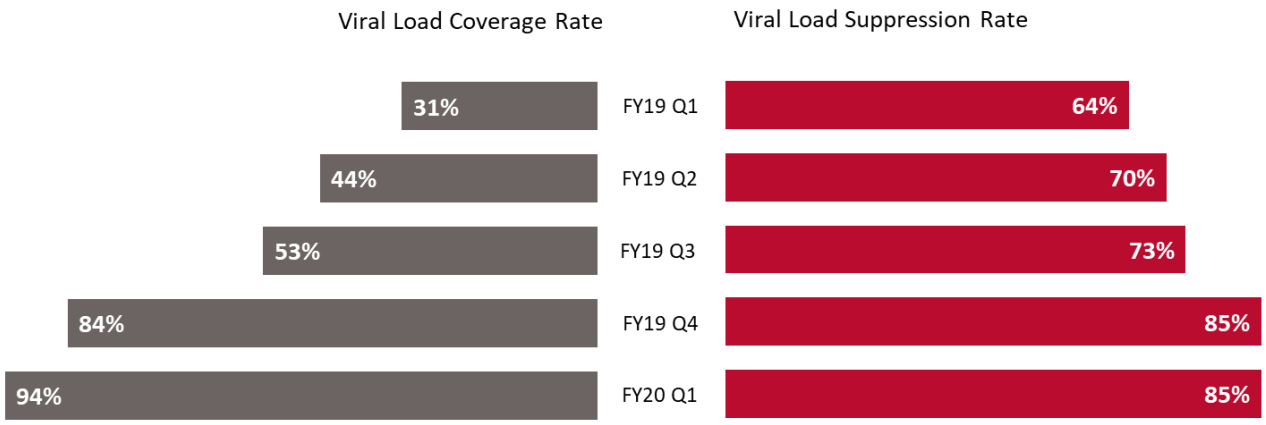
The success of CaTSS interventions relied on close coordination with patients and communities. Following data review, the project team conducted focus group discussions or consultations with patients in the location, age, and gender groups that were demonstrating weak adherence through missed appointments or refill pickups or poor viral suppression. These root cause analyses informed programming improvements, such as the designation of separate service hours for men and enhanced disclosure counseling and education for pediatric patients transitioning into adult care. CaTSS continued to engage with community leaders and orphans and vulnerable children (OVC) networks that had been partners under Pro-ACT to ensure coordination and to assist in case identification. Mentor mothers were indispensable members of the extended CaTSS team and contributed to high performance across the life of the project. The project increased the percentage of newly identified HIV-positive pregnant women started on ART to prevent mother-to-child transmission of HIV from 85% to more than 95% and maintained a PMTCT linkage rate above 95% throughout the life of the project, capping it with a 99% linkage rate in the final quarter.

Photo: Femi Owolabi/MSH Staff

THIRD 95: 95% OF PEOPLE ON TREATMENT HAVE SUPPRESSED VIRAL LOADS

CaTSS significantly improved the coverage of viral load testing and viral suppression rates in project-supported facilities and states. By the end of the project, 94% of patients on ART had their viral load tested, and 85% of those had an undetectable viral load, making them much less likely to transmit the virus to their partners or children. These results were achieved through a multi-pronged strategy, including improved sample transport and results logistics; the use of an electronic viral load register; transitioning to optimized regimens (TLD transition); and patient education through information, education, and communications materials.

FIGURE 7: VIRAL LOAD COVERAGE RATE AND VIRAL LOAD SUPPRESSION RATE (FY19–FY20)



IMPROVING PATIENT FLOW

By scheduling viral load appointments to coincide with drug pickup, pairing caregiver and child appointments, using appointment registers, and filling Viral Load Request and Order Forms prior to patients seeing the clinician, CaTSS improved patient flow and made better use of both patient and provider time. CaTSS also introduced ***clinic-side phlebotomy units*** to collect samples directly at service delivery points in select high-volume facilities. This eliminated access barriers related to the difficulty of navigating the facilities and reduced missed opportunities and client waiting time. These efforts contributed to a sustained increase in the number of HIV-positive pregnant and breastfeeding women who had viral load testing.

STRENGTHENING LABORATORY SERVICES

CaTSS established direct engagement and communication with all Polymerase Chain Reaction (PCR) labs handling samples from CaTSS-supported facilities to improve tracking and, ultimately, turnaround times. The laboratory team monitored samples sent and results received from designated PCR labs using tracking tools and fostered closer ties with these PCR labs. The team also conducted bi-monthly line listing and tracking of outstanding results to ensure rapid recall for repeat sample collection when necessary.

The creation of the electronic viral load (eVL) register allowed for faster identification of active clients and those eligible for viral load testing. The eVL register captures client VL sample collection and results received with dates for all viral load tests, updated the day they were done. CaTSS used the eVL register to more rapidly identify clients eligible for viral load on a weekly basis and to adequately prepare in advance to have their VL sample collected. In addition, the project introduced the VL sample tracker that helps with tracking the numbers of samples collected by facilities and sent to the PCR labs and return of results.

Scaling VL coverage requires defining and supporting relevant components of the value chain. CaTSS focused on the following seven-tiered value chain to achieve its coverage results.

1. Continuous folder audit and tagging for VL eligibility
2. Proactive call back to health facility of eligible clients for sample collection
3. Active transfer and tracking of samples to designated PCR labs and follow up for updates
4. Close tracking of dispatched results
5. Facility case manager actively follows up on received results at facility
6. Daily update of result on e-Viral Load register, EMR, and patients' folders
7. VL update as part of daily situation room analyses

Lab scientist Deborah Mamman demonstrates viral load sample collection and storage at the General Hospital Suleja during a visit by Gordon Comstock, director of program delivery at MSH. The upgraded freezers, purchased with support from USAID, can be powered by solar energy, providing a reliable alternative to electricity. Photo: CaTSS project/MSH staff

SUSTAINING EPIDEMIC CONTROL

Over the life of the project, CaTSS worked in close partnership with USAID, the Federal Ministry of Health (FMOH), state and LGA-level GON counterparts, and other implementing partners to strengthen various aspects of the Nigerian health system that underpin sustainable epidemic control. Key intervention areas included data collection, management, and use; governance; and health workforce development.

DATA FOR IMPROVED PATIENT CARE AND DRIVING PROGRESS TOWARD EPIDEMIC CONTROL

The FMOH's National Data Repository (NDR) was launched in 2018. The repository was developed through a partnership between the Nigerian government and PEPFAR to provide a central repository for monitoring multi-sectoral efforts to address HIV and progress toward achieving the UNAIDS 95-95-95 goals. Through CaTSS support, the five project-supported states now have their de-identified patient data and progress against the 95-95-95 goals captured on the NDR.

To get the states to this level, CaTSS rapidly scaled up the implementation of the OpenMRS EMR system in all 107 health facilities. The process entailed working closely with the respective state governments and facility management teams to resolve infrastructure challenges that had been impeding the effective implementation of the system, such as limited power, trained staff, and the necessary computer and internet systems. CaTSS supported the states to procure and install solar power equipment that served as an alternative power system in locations that were off grid. The project also increased the number of electronic data entry clerks to bridge the human resources gaps for operating the EMR system and facilitate the synchronization of patient-level data to the NDR.

To make the EMR system even more functional, CaTSS worked closely with state governments and facility management teams to upgrade the EMR system to a version that enables the integration of fingerprint readers and biometric systems to make data retrieval faster and eliminate duplicate data entry.

With the EMR running smoothly in all 107 health facilities and patient data regularly and automatically synchronizing to the NDR, states are better able to cope with the demands of high-frequency reporting, review progress, and course correct in a timely manner. This singular development will support permanent improvements in the use of data for decision making by states and facilities, as well as long-term improved quality of care for patients.

STATE MENTORSHIP PROGRAM

The CaTSS mentorship program was designed to "increase the capacity of the state governments to plan, manage, coordinate, and lead the HIV/AIDS programs." With the increasing emphasis on government ownership and sustainability, it became necessary for state governments to increasingly take on roles that were previously held by CaTSS staff. To support this transition, CaTSS developed a mentorship program in which CaTSS technical staff provided targeted and stepwise capacity development to selected staff from state governments on key HIV/AIDS program areas to achieve the aims of 100% linkage of newly identified positive patients to ART, 85% retention of PLHIV on ART, and increased viral load uptake. These goals were in addition to supported health facilities maintaining good

performance in the routine PEPFAR Site Improvement through Monitoring Systems (SIMS) rating. CQI projects were implemented to address any gaps found, especially in the quality of HIV/AIDS and TB care and treatment services.

The program brought about significant results only three months after it began. Immediate results included a 30% increase in the technical assistance that CaTSS-supported health facilities received and an increase in the linkage rates in nine supported health facilities in Sokoto state from 57% to 64% in 2017.

Other results achieved as a project along the treatment cascade at the time include 98.5% linkage to ART, with some states having reached 100%; retention rate of 89%, 4% above the 85% target; VL coverage of 91%; and suppression of 85%. The performance of the health facilities on SIMS was maintained, and mentors were able to adequately prepare the sites for the assessments.

CONTINUING EDUCATION FOR HEALTH PROFESSIONALS

CaTSS introduced the Centre for Health Professionals Continuing Education (CHPCE) as a capacity building program to address human resources for health (HRH) training gaps in the states. The trainings offered in the centers were designed to be sustainable and aligned to the PEPFAR HRH strategies and global best practices. The CHPCE model was created as a sustainability model to transition the CaTSS HIV/AIDS technical capacity to state government agencies and improve their institutional capacity to own, manage, and coordinate continuous in-service training of health workers for enhanced performance and sustained improvement in the health outcomes of their citizens.

Through seed grants provided to state governments, the centers successfully implemented in-service training programs that qualified as continuing medical education (CME) for staff. The trainings offered by the centers were both designed and delivered by staff of the MOH of the respective states, who were trained by CaTSS as multidisciplinary facilitators. The centers were registered with professional bodies and offered CME credits to participants, making the courses attractive to various cadres of health workers.

Through this initiative, the region now has more than 80 master facilitators with enhanced skills for facilitation and application of adult learning approaches. This is in addition to training curricula for TB, HIV/AIDS, and malaria program leadership and management.

Even though the current level of functionality in the state varies, the centers successfully trained 433 health care workers (59 medical doctors, 83 nurses and midwives, 78 medical laboratory scientists, and 213 allied health professionals) who currently offer enhanced HIV/AIDS and other health services in their state.

KEY LESSONS LEARNED AND RECOMMENDATIONS

KEY LESSONS LEARNED

- **Importance of data for decision making.** The discontinuation of provider-initiated testing and counseling (PITC) among pregnant women in FY17 (except on request or based on symptomatology) resulted in missed opportunities to test for HIV in situations where test kits were not provided by the GON. CaTSS programmatic data demonstrated that only 20% of these HIV pregnant women were symptomatic. PITC for HIV pregnant women was reinstated in FY18.

- **Contingency planning with private health facilities.** The CaTSS project worked extensively with government-owned facilities and was susceptible to the effect of any industrial actions. The project witnessed two nationwide industrial strikes by government personnel (one in 2017 and the other in 2018) that lasted cumulatively for more than 11 weeks. This significantly affected the quality of care as patients did not have access to care and those due to pick up their drugs could not and were therefore without their medication for the duration of the strikes. This experience underscores the need for contingency planning for HIV/AIDS patient care. A plausible approach is to have a network of willing private health providers who can act as alternate sites for patient drug pickup.

- **Utilizing state health care workers as peer mentors.** Empowering health care workers through capacity development and skills transfer is vital for the technical sustainability of HIV/AIDS programming. The mentors who CaTSS worked with contributed significantly to achieving the projects goals and strengthening the HIV response in the region by applying their acquired skills.

- **Innovation and flexibility for successful HIV/AIDS programming.** CaTSS responded to the dynamics inherent in the drive to achieve epidemic control with a series of strategy changes and introduced several innovative solutions. These included the launch of the Nigeria HIV Guidelines mobile application in 2017 to improve access to new treatment guideline updates by clinicians, the development of an electronic viral load register to better track viral load testing, the introduction of a patient quality of care checklist that enabled clinicians to identify the services that a patient has received and what they were due for with a glance of the patient folder, and the introduction of a Family Centered Decentralized Approach that increased access to and retention in PMTCT sites for families that would have otherwise had to travel to different treatment facilities to receive treatment services separately.

- **A cadre of health care volunteers for service delivery.** Among the critical obstacles to a sustainable HIV/AIDS program in the region are the paucity of HRH and funding availability. By using a cadre of volunteers, some of whom are PLHIV themselves and others having basic health care training, the program was able to bridge the HRH gap at a reasonable cost. Grouped into patient case managers, data clerks, and electronic data clerks, they provide a wide range of services to the patients, including keeping track of patient appointment registers, helping them navigate the health facility during their appointment days, maintaining contact and making follow

up calls, and capturing treatment data in the EMR. Because volunteers were provided with the basic equipment and tools to provide these services and training, they contributed significantly to improving the overall patient experience and quality of care in the health facilities. Since most of them live near the health facilities where they volunteer, they remain accessible to state governments. Involving these part-time workers in HIV care reaps other benefits, including income generation; the acquisition of new skills; and legitimization, particularly for PLHIV, of the important role they and others in their community play in ensuring patient-centered care.

- **High-frequency reporting.** PEPFAR introduced HFR to work jointly with implementing partners to analyze program performance data along the treatment cascade. This entailed weekly granular data analysis and reporting for more enhanced site monitoring and course correction from feedback from the PEPFAR team. This was only possible due to CaTSS' prompt introduction and staff capacity development on patient data capture and updates on the EMR and data analytical systems such as OpenMRS and PowerBI.

RECOMMENDATIONS

The extended CaTSS team learned many lessons over the life of the project that led to the development of new strategies and approaches, including those outlined in the previous section. Our GON and community counterparts own these improvements and knowledge and will lead the way for PEPFAR-supported programming in the region. As Nigeria continues to strive for HIV epidemic control, it will be important to continually assess progress to inform the prioritization and refinement of activities. For example, the categorization of the five CaTSS states as "sustained response states" served its purpose at that time and allowed for investments to be channeled to higher-prevalence, higher-burden locations. Yet to reach epidemic control in the North West, it is necessary to remove restrictions on the provision of community-based services to ensure that patients are met with services when and where they need them. USAID's interest in a surge plan for saturation in Kwara and Niger states perhaps reflects this recognition. There is great potential to reach individuals who are hard to reach due to either distance or health seeking behaviors through community-led interventions that include private-sector players. The use of data will continue to be an integral part of HIV programming in Nigeria. It is critical that the gains achieved under the CaTSS project are sustained and built on through the use of low-cost technologies to facilitate the scale up of EMR in other health facilities.

Photo: Johnson Okolie/MSH Staff

ANNEXES

ANNEX 1. CATSS STRATEGIC COMMUNICATIONS

Project Information Sheet

Strengthening Human Resources for Health in Nigeria (Technical Highlight)

Volunteer Escorts in Nigeria: A Key Link to HIV Treatment and Care (Success Story)

Mentor Mothers in Nigeria Empower HIV-positive Pregnant Women to Stay on Treatment (Success Story)

Living Positively with HIV: Nigerian Entrepreneur Grows her Business, Cares for Herself and her Family, and Mentors Others (Success Story)

Targeted Intervention Helps Vulnerable Children Return to School in Nigeria (Success Story)

Scaling up EMR in Nigeria (Success Story)

Just a Handful of Naira: Village Savings and Loans Associations in Nigeria (Success Story)

Mayowa's story: Defying the Odds and Living Positively with HIV (Success Story)

Being Healthy is a Joy: Nigerian Adolescents are Making HIV Undetectable (Success Story)

From Patient to Mentor: Eliminating Mother-to-child Transmission of HIV in Nigeria (Success Story)

ANNEX 2. CATSS SUMMARY PERFORMANCE MONITORING PLAN (PMP)

Table 1. CaTSS End-of-Project Progress-to-Target Annual Data

The table below includes all indicators included in the M&E plan for the CaTSS award. This table compares the annual indicator achievement against the year's target. All MER changes are footnoted in the table below. Not applicable (N/A) is used to mark any indicator that was not collected in a particular year because of MER guidance or when there was not a target set for the CaTSS project in a particular year. The data are compared against the baseline for all 42 indicators summarized below.

#	Indicator	Baseline	FY17			FY18			FY19			FY20 (Q1)		
			Target	Actual	% Achievement	Target	Actual	% Achievement	Target	Actual	% Achievement	Target	Actual	% Achievement
1	Number of civil society organizations (CSOs) receiving grants to deliver community HIV/AIDS services linked with health facilities	12	16	11	69%	N/A	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Number of adults and children newly enrolled on antiretroviral therapy (ART) (TX_NEW)	3,738	4,424	7,424	168%	9,172	6,841	75%	9,054	6,881	76%	8,927	1,581	18%
3	Number of adults and children currently receiving ART (TX_CURR)	28,418	30,670	33,455	109%	38,323	39,557	103%	46,272	41,321	89%	43,350	34,448	79%
4	Total number of adults and children	6,519	4,804	6,692	139%	36,882	7,169	19%	N/A	N/A	N/A	N/A	N/A	N/A

#	Indicator	Baseline	FY17			FY18			FY19			FY20 (Q1)		
			Target	Actual	% Achievement	Target	Actual	% Achievement	Target	Actual	% Achievement	Target	Actual	% Achievement
	who initiated ART in the 12 months prior to the beginning of the reporting period (TX_RET_D)[1]													
5	Number of adults and children who are still on treatment at 12 months after initiating ART (TX_RET_N)	4,580	3,843	4,783	124%	33,194	5,082	15%	N/A	N/A	N/A	N/A	N/A	N/A
6	Percentage of ART patients with a viral load result documented in the medical record and/or laboratory information systems (LIS) within the past 12 months with a suppressed viral load (<1,000 copies/ml) (TX_PVLS)	154%	90%	65%	73%	90%	64%	71%	85%	85%	100%	95%	86%	91%

[1] TX_RET was removed in MER 2.3

#	Indicator	Baseline	FY17			FY18			FY19			FY20 (Q1)		
			Target	Actual	% Achievement	Target	Actual	% Achievement	Target	Actual	% Achievement	Target	Actual	% Achievement
7	Number of adult and pediatric patients on ART with a viral load result documented in the patient medical record and/or supporting laboratory results in the past 12 months (TX_PVLS(D))	2,005	30,670	3,475	11%	36,882	12,483	34%	44,543	31,319	70%	41,666	28,712	69%
8	Number of adult and pediatric patients on ART with suppressed viral load results (<1,000 copies/ml) documented in the patient medical record and/or supporting laboratory results within the past 12 months (TX_PVLS(N))	3,086	27,603	2,261	6%	33,194	8,003	24%	37,869	26,494	70%	39,593	24,358	62%
9	Number of service delivery points that utilize a patient-level electronic medical record system (by service delivery point)	19	19	19	100%	19	19	100%	107	107	100%	53	53	100%
10	Status of continuous quality improvement (CQI) and	41	41	41	100%	41	41	100%	41	41	100%	30	30	100%

#	Indicator	Baseline	FY17			FY18			FY19			FY20 (Q1)		
			Target	Actual	% Achievement	Target	Actual	% Achievement	Target	Actual	% Achievement	Target	Actual	% Achievement
	proficiency testing (PT) programs for PEPFAR-supported laboratories and blood centers/banks (LAB_PTCQI)													
11	Percentage of adults and children who tested positive who enrolled in clinical care (linkage rate)	49%	90%	86%	86%	90%	75%	83%	N/A	88%	N/A	N/A	98%	N/A
12	Percentage of HIV-positive pregnant women who received ARVs to reduce risk of mother-to-child-transmission (MTCT) during pregnancy and delivery (PMTCT_ART_NAT)	92%	95%	93%	93%	95%	103%	103%	96%	96%	100%	95%	99%	103%
13	Number of HIV-positive pregnant women who received ARVs to reduce risk of MTCT during pregnancy (PMTCT_ART)	1,437	1,175	1,427	121%	1,508	1,568	104%	2,378	1,385	58%	3,780	272	7%
14	Number of pregnant women who tested HIV positive	1,437	1,237	1,532	124%	1,593	1,549	96%	2,479	1,460	58%	3,969	276	7%

#	Indicator	Baseline	FY17			FY18			FY19			FY20 (Q1)		
			Target	Actual	% Achievement	Target	Actual	% Achievement	Target	Actual	% Achievement	Target	Actual	% Achievement
	(PMTCT_STAT_POS)													
15	Number of health facilities providing antenatal care (ANC) services that provide both HIV testing and ARVs for PMTCT on site	128	128	128	100%	128	128	100%	107	107	100%	53	53	100%
16	Percentage of pregnant women with known HIV status at ANC (includes those who already knew their HIV status prior to ANC) (PMTCT_STAT)	83%	95%	75%	75%	95%	92%	93%	94%	94%	100%	99%	97%	98%
17	Number of pregnant women with known HIV status at ANC (includes those who already knew their HIV status prior to ANC) (PMTCT_STAT_N)	122,435	98,985	128,924	130%	97,520	129,024	132%	197,311	134,378	68%	166,351	23,298	14%
18	Number of pregnant women attending antenatal clinics (ANC) and/or had a facility-based delivery and were tested for	N/A	N/A	N/A	N/A	N/A	124,778	N/A	96,355	133,933	139%	162,382	23022	14%

#	Indicator	Baseline	FY17			FY18			FY19			FY20 (Q1)		
			Target	Actual	% Achievement	Target	Actual	% Achievement	Target	Actual	% Achievement	Target	Actual	% Achievement
	HIV during pregnancy and tested HIV negative (Newly Identified Negative)													
19	Number of HIV-positive pregnant women identified in the reporting period (excluding known HIV positive at entry) (Newly Identified Positive)	N/A	N/A	N/A	N/A	N/A	549	N/A	N/A	579	70%	1,474	87	5.9%
20	Number of new ANC clients in reporting period (PMTCT_STAT_D)	146,922	104,195	172,594	164%	102,655	144,644	141%	209,553	142,667	68%	168,028	24,069	14%
21	Percentage of infants born to HIV-positive women who had a virologic HIV test done within 12 months of birth (PMTCT_EID)[2]	65%	95%	90%	90%	95%	83%	87%	91%	110%	122%	66%	64%	97%

[2] In MER 2.3 (FY19) the denominator was updated

#	Indicator	Baseline	FY17			FY18			FY19			FY20 (Q1)		
			Target	Actual	% Achievement	Target	Actual	% Achievement	Target	Actual	% Achievement	Target	Actual	% Achievement
22	Number of infants who had a first virologic HIV test (sample collected) by 12 months of age during the reporting period	1,265	1,175	1587	117%	1,511	1,261	83%	2,254	1,591	71%	3,771	434	12%
23	Number of HIV-infected infants identified in the reporting period whose diagnostic sample was collected by 12 months of age (PMTCT_HEI_POS)[3]	N/A	N/A	79	N/A	177	51	29%	N/A	55	N/A	N/A	7	N/A
24	Number of individuals who received HIV testing services (HTS) and received their test results	151,979	184,722	322,007	174%	328,198	354,629	108%	379,774	347,255	91%	314,033	69,201	22%
25	Number of adults and children who tested positive	7,063	3,927	8,682	221%	10,191	10,027	98%	10,102	7,810	77%	10,675	1,618	15%

[3] New indicator added in MER 2.2 (FY18)

#	Indicator	Baseline	FY17			FY18			FY19			FY20 (Q1)		
			Target	Actual	% Achievement	Target	Actual	% Achievement	Target	Actual	% Achievement	Target	Actual	% Achievement
	(HTS_TST_POS)													
26	Number of people living with HIV/AIDS (PLHIV) in HIV clinical care who were screened for tuberculosis (TB) symptoms at the last clinical visit TB_SCREEN (TX_TB_D)	30,538	0	32,100	N/A	38,823	36,071	93%	46,272	39,256	85%	37,179	31,698	85%
27	Number of ART patients who were started on TB treatment during the semiannual reporting period. (TX_TB_N)	355	0	472	N/A	7,765	367	5%	565	174	31%	8,927	84	1%
28	Total number of new and relapsed TB cases during the reporting period (TB_STAT_D)	2,100	2,487	4,869	196%	1,868	3,793	204%	3,927	3,802	97%	4,451	898	20%
29	Number of new and relapsed TB cases with documented HIV status during the reporting period (TB_STAT_N)	1,500	2,238	4,331	194%	1,680	3,507	209%	3,927	3,346	85%	4,376	811	19%

#	Indicator	Baseline	FY17			FY18			FY19			FY20 (Q1)		
			Target	Actual	% Achievement	Target	Actual	% Achievement	Target	Actual	% Achievement	Target	Actual	% Achievement
30	Number of HIV-infected patients in HIV care or treatment (pre-ART or ART) who started TB treatment	35	383	467	122%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
31	Number of TB cases with documented HIV-positive status who started or continue ART during the reporting period (TB_ART_N)	278	383	622	162%	402	374	93%	565	347	61%	987	84	9%
32	Number of ART patients who completed a standard course of TB preventive therapy within the reporting period (TB_PREV_N)	1,657	0	1,413	N/A	23,236	6,562	28%	26,807	6,489	24%	38,834	3,479	9%
33	Number of ART patients who are expected to complete a course of TB preventive therapy during the reporting period (for programs using continuous IPT, this includes only the patients who are scheduled to	2,457	0	2,908	N/A	25,817	12,060	47%	29,788	10,401	35%	45,682	4,436	10%

#	Indicator	Baseline	FY17			FY18			FY19			FY20 (Q1)		
			Target	Actual	% Achievement	Target	Actual	% Achievement	Target	Actual	% Achievement	Target	Actual	% Achievement
	complete the first 6 months of therapy) [TB_PREV_D][4]													
34	Number of people receiving post-gender-based violence (GBV) clinical care based on the minimum package (GEND_GBV)	373	373	68	18%	300	252	84%	296	325	110%	673	112	17%
35	Number of people receiving post-exposure prophylaxis (PEP) services by age and gender (disaggregate of the sexual violence service type) GEND_GBV (PEP)	N/A	N/A	156	N/A	140	109	78%	135	86	64%	673	13	2%
36	Number of contacts who were tested for HIV and received	N/A	N/A	N/A	N/A	N/A	58	N/A	N/A	3,018	N/A	N/A	933	N/A

[4] TB_PREV (D) was modified in MER 2.4 (FY20 Q1)

#	Indicator	Baseline	FY17			FY18			FY19			FY20 (Q1)		
			Target	Actual	% Achievement	Target	Actual	% Achievement	Target	Actual	% Achievement	Target	Actual	% Achievement
	their results (positive and negative) (INDEX Tested)[5]													
37	Number of contacts who tested positive for HIV and received their results (INDEX Tested Positive)	N/A	N/A	N/A	N/A	N/A	11	N/A	N/A	505	N/A	N/A	202	N/A
38	Percentage of clients who tested positive for HIV (INDEX Positivity)	N/A	N/A	N/A	N/A	N/A	19%	N/A	N/A	19%	N/A	N/A	22%	N/A
39	Number of positive index clients linked to ART (INDEX ART Link)	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A	479	N/A	N/A	197	N/A

[5] HTS_INDEX was added as a standalone indicator to monitor index testing services in MER 2.3 (FY19 Q1)

#	Indicator	Baseline	FY17			FY18			FY19			FY20 (Q1)		
			Target	Actual	% Achievement	Target	Actual	% Achievement	Target	Actual	% Achievement	Target	Actual	% Achievement
40	Number of beneficiaries served by PEPFAR orphans and vulnerable children (OVC) programs for children and families affected by HIV (OVC_SERV)[6]	18,464	18,228	13,769	76%	4,350	4,631	106%	N/A	N/A	N/A	N/A	N/A	N/A
41	Percentage of OVC beneficiaries who have self-disclosed HIV status to OVC implementing partners (OVC_KNOWNSTAT)	70%	90%	110%	100%	100%	100%	N/A	N/A	N/A	N/A	N/A	N/A	N/A
42	Number of OVCs (<18 years old) whose HIV status is known or unknown by the OVC implementing partner (OVC_KNOWNSTAT Num)	3,818	N/A	10,299	N/A	0	3239	N/A	N/A	N/A	N/A	N/A	N/A	N/A

[6] The calculation for OVC_SERV was updated in MER 2.2 (FY18)

Table 2. CaTSS End-of-Project Quarterly Data

The table below summarizes the same 42 indicators as in Table 1; however, this table shows the CaTSS quarterly progress from FY17 to FY20 Q1. For annual achievement against the targets, see Table 1. This table also includes data disaggregated by gender where appropriate. All MER changes are footnoted below. Not applicable (N/A) is used to mark any indicator that was not collected in a particular year because of MER guidance or when there was not a target set for the CaTSS project in a particular year.

#	*Indicator*	FY17				FY18				FY19				FY20
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
1	Number of civil society organizations (CSOs) receiving grants to deliver community HIV/AIDS services linked with health facilities	0	11	11	11	10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Number of adults and children newly enrolled on antiretroviral therapy (ART) (TX_NEW)	1,711	1,636	1,758	2,319	2,030	1,748	1,413	1,650	1,692	1,652	1,665	1,872	1,581
	Female	1,029	1,202	1,124	1,647	1,458	1,192	937	1,077	1,116	1,098	1,080	1,239	1,024
	Male	682	434	634	672	572	556	476	573	576	554	585	633	557
3	Number of adults and children currently receiving ART (TX_CURR)	33,713	30,917	32,548	33,455	35,389	36,726	36,391	39,557	33,334	35,903	38,081	41,321	34,448
	Female	22,212	21,213	21,978	23,142	24,603	25,513	25,258	27,421	23,117	25,842	26,409	28,540	23,758

#	*Indicator*	FY17				FY18				FY19				FY20
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
	Male	11,501	9,704	10,570	10,313	10,786	11,213	11,133	12,136	10,217	10,061	11,672	12,781	10,690
4	Total number of adults and children who initiated ART in the 12 months prior to the beginning of the reporting period (TX_RET_D)[7]	1,602	1,957	1,648	1,485	0	0	0	7,169	N/A	N/A	N/A	N/A	
	Female	1018	1245	1068	995	0	0	0	4269	N/A	N/A	N/A	N/A	N/A
	Male	584	712	580	490	0	0	0	2900	N/A	N/A	N/A	N/A	N/A
5	Number of adult and children who are still on treatment at 12 months after initiating ART (TX_RET_N)	1128	1378	1170	1,107	0	0	0	5128	N/A	N/A	N/A	N/A	N/A
	Female	741	905	785	701	0	0	0	3100	N/A	N/A	N/A	N/A	N/A
	Male	387	473	385	346	0	0	0	2028	N/A	N/A	N/A	N/A	N/A

[7] TX_RET was removed in MER 2.3

#	*Indicator*	FY17				FY18				FY19				FY20
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
6	Percentage of ART patients with a viral load result documented in the medical record and/or laboratory information systems (LIS) within the past 12 months with a suppressed viral load (<1,000 copies/ml) (TX_PVLS)	76%	53%	68%	66%	67%	66%	52%	64%	64%	74%	81%	85%	85%
	Female	76%	53%	70%	65%	67%	66%	51%	63%	63%	74%	80%	84%	
	Male	77%	54%	64%	70%	66%	66%	54%	66%	66%	74%	84%	85%	
7	Number of adults and pediatric patients on ART with a viral load result documented in the patient medical record and/or supporting laboratory results in the past 12 months (TX_PVLS(D))[8]	786	961	267	1,461	4,713	4,372	1,909	1,489	14,764	10,325	17,500	31,319	

[8] Reporting frequency for TX_PLVS_N and TX_PLVS_D moved from semiannually to quarterly in MER 2.3 (FY19)

#	*Indicator*	FY17				FY18				FY19				FY20
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
	Female	536	656	179	1,034	3,188	3,067	1,144	1,059	10,239	7,433	12,578	22,013	
	Male	250	305	88	427	1,525	1,305	765	430	4,525	2,892	4,922	9,306	
8	Number of adults and pediatric patients on ART with suppressed viral load results (<1000 copies/ml) documented in the patient medical record and/or supporting laboratory results within the past 12 months (TX_PVLS(N))	601	512	181	967	3,147	2,868	1,001	987	9,457	7,606	14,172	26,494	
	Female	408	347	125	669	2,143	2,010	587	669	6,461	5,480	10,062	18,577	
	Male	193	165	56	298	1,004	858	414	283	2,996	2,126	4,110	7,917	
9	Number of service delivery points that utilize a patient-level electronic medical record system (by service delivery point)	19	19	19	19	19	19	19	19	107	107	107	107	53
10	Status of continuous quality improvement (CQI) and proficiency testing (PT) programs for PEPFAR-supported laboratories and	41	41	41	41	41	41	41	41	41	41	41	41	30

#	*Indicator*	FY17				FY18				FY19				FY20
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
	blood centers/banks (LAB_PTCQI)													
11	Percentage of adults and children who tested positive who enrolled in clinical care (linkage rate)	62%	91%	85%	114%	76%	63%	69%	65%	86%	81%	94%	92%	98%
	Female	63%	113%	92%	137%	96%	73%	79%	72%	90%	86%	94%	94%	98%
	Male	60%	59%	74%	80%	50%	49%	56%	54%	78%	73%	94%	90%	97%
12	Percentage of HIV-positive pregnant women who received ARVs to reduce risk of mother-to-child-transmission (MTCT) during pregnancy and delivery (PMTCT_ARV_NAT)	85%	96%	95%	96%	100%	108%	100%	101%	94%	96%	96%	98%	103%
13	Number of HIV-positive pregnant women who received ARVs to reduce risk of MTCT during pregnancy (PMTCT_ARV)	334	393	334	366	378	397	365	428	358	350	341	336	272

#	*Indicator*	FY17				FY18				FY19				FY20
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
14	Number of pregnant women who tested HIV-positive (PMTCT_STAT_POS)	391	408	350	383	377	366	346	425	397	366	355	342	276
15	Number of health facilities providing antenatal care (ANC) services that provide both HIV testing and ARVs for PMTCT on site	128	128	128	128	128	128	128	128	107	107	107	107	53
16	Percentage of pregnant women with known HIV status at ANC (includes those who already knew their HIV status prior to ANC (PMTCT_STAT)	85%	68%	74%	75%	77%	91%	95%	96%	96%	94%	89%	97%	98%
17	Number of pregnant women with known HIV status at ANC (includes those who already knew their HIV status prior to ANC) (PMTCT_STAT_ N)	30,778	33,746	29,713	34,687	31,294	32,922	28,281	36,527	35,436	33,079	29,503	36,360	23,298
18	Number of pregnant women attending antenatal clinics (ANC) and/or had a facility-based delivery and	N/A	N/A	N/A	N/A	29,430	31,354	27,931	36,063	35,002	32,867	29,147	36,917	23022

#	*Indicator*	FY17				FY18				FY19				FY20
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
	were tested for HIV during pregnancy and tested HIV negative (Newly Identified Negative)													
19	Number of HIV-positive pregnant women identified in the reporting period (excluding known HIV-positive at entry) (Newly Identified Positive)	N/A	N/A	N/A	N/A	149	133	130	137	148	145	152	134	87
20	Number of new ANC clients in reporting period (PMTCT_STAT_D)	35,999	49,917	40,310	46,368	40,514	36,190	29,869	38,071	36,983	35,028	33,086	37,570	24,069
21	Percentage of infants born to HIV-positive women who had a virologic HIV test done within 12 months of age (PMTCT_EID)[9]	114%	93%	118%	90%	90%	84%	73%	85%	84%	106%	116%	134%	64%

[9] In MER 2.3 (FY19) the denominator was updated

#	*Indicator*	FY17				FY18				FY19				FY20
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
22	Number of infants who had a first virologic HIV test (sample collected) by 12 months of age during the reporting period	447	381	413	346	338	307	254	362	334	389	411	457	434
	Female	217	185	201	162	176	152	139	193	152	210	200	228	212
	Male	230	196	212	184	162	155	115	169	182	179	211	229	222
23	Number of HIV-infected infants identified in the reporting period, whose diagnostic sample was collected by 12 months of age (PMTCT_HEI_POS)[10]	19	17	24	19	6	23	8	14	4	10	18	23	7
	Female	10	9	16	8	4	9	6	10	2	4	10	13	5
	Male	9	8	8	11	2	14	2	4	2	6	8	10	2
24	Number of individuals who received HIV testing	83,541	77,665	78,072	82,729	91,814	89,327	74,097	99,391	105,647	92,857	68,662	80,089	69,201

[10] New indicator added in MER 2.2 (FY18)

#	*Indicator*	FY17				FY18				FY19				FY20
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
	services (HTS) and received their test results													
	Female	49,289	45,822	46,062	48,810	54,186	56,671	48,105	61,153	64,128	58,821	50,628	59,111	46,871
	Male	34,252	31,843	32,010	33,919	37,628	32,656	25,992	38,238	41,519	34,036	18,034	20,978	22,330
25	Number of adults and children who tested positive	2,769	1,798	2,079	2,036	2,664	2,780	2,041	2,542	1,975	2,039	1,767	2,029	1618
	Female	1,634	1,061	1,227	1,201	1,524	1,641	1,187	1,489	1,240	1,278	1,146	1,324	1045
	Male	1,135	737	852	835	1,140	1,139	854	1,053	735	761	621	705	573
26	Number of people living with HIV/AIDS (PLHIV) in HIV clinical care who were screened for tuberculosis (TB) symptoms at the last clinical visit TB_SCREEN (TX_TB_D)	19,664	5,109	2,586	4,741	19,583	5,902	3,193	7,393	N/A	N/A	36,177	39,256	31,698
	Female	10,815	2,810	1,422	2,608	13,499	4,074	2,135	5,188	N/A	N/A	N/A	25,169	20,180
	Male	8,849	2,299	1,164	2,133	6,084	1,828	1,058	2,205	N/A	N/A	N/A	14,087	11,518
27	Number of ART patients who were started on TB treatment during the	85	140	73	174	0	208	0	376	0	120	0	174	84

#	*Indicator*	FY17				FY18				FY19				FY20
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
	semiannual reporting period. (TX_TB_N)													
	Female	49	81	42	101	0	121	0	218	0	50	0	76	50
	Male	36	59	31	73	0	87	0	158	0	70	0	98	34
28	Total number of new and relapsed TB cases, during the reporting period (TB_STAT_D)[11]	920	1,217	939	1,793	941	1,068	881	903	977	1,010	893	922	898
	Female	350	475	334	532	304	324	279	328	314	315	308	318	320
	Male	570	742	605	1,261	637	744	602	575	663	695	585	604	578
29	Number of new and relapsed TB cases with documented HIV status during the reporting period. (TB_STAT_N)	744	1,074	841	1,672	864	981	821	841	916	838	758	834	811
	Female	351	399	292	536	276	306	255	305	309	265	271	292	295

[11] Reporting frequency for TB_STAT_N and TB_STAT_D moved from semiannually to quarterly in MER 2.3 (FY19)

#	*Indicator*	FY17				FY18				FY19				FY20
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
	Male	393	675	549	1,136	588	675	566	536	607	573	487	542	516
30	Number of HIV-infected patients in HIV care or treatment (pre-ART or ART) who started TB treatment	85	140	77	165	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Female	50	83	45	97	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Male	35	57	32	68	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
31	Number of TB cases with documented HIV-positive status who started or continue ART during the reporting period (TB_ART_N)[12]	54	74	320	174	77	143	83	71	82	82	71	112	84
	Female	33	49	199	89	41	70	44	40	37	36	30	49	37
	Male	21	25	121	85	36	73	39	31	45	46	41	63	47

[12] Reporting frequency moved from semiannually to quarterly in MER 2.3 (FY19)

#	*Indicator*	FY17				FY18				FY19				FY20
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
32	Number of ART patients who completed a standard course of TB preventive therapy within the reporting period (TB_PREV_N)	0	0	86	1,327	758	949	2,780	2,075	1,242	1,357	1,369	2,521	3,479
	Female	0	0	61	1,114	537	607	2032	1,410	890	900	901	1,609	2,100
	Male	0	0	25	213	221	342	748	665	352	457	468	912	1,379
33	Number of ART patients who are expected to complete a course of TB preventive therapy during the reporting period (for programs using continuous IPT, this includes only the patients who are scheduled to complete the first 6 months of therapy) [TB_PREV_D][13]	401	533	1,161	813	4,744	3,453	2,055	1,808	2,453	2,386	2,187	3,375	4,436

[13]TB_PREV (D) was modified in MER 2.4

#	*Indicator*	FY17				FY18				FY19				FY20
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
	Female	298	392	911	516	3,376	2262	1,423	1,285	1,716	1,705	1,504	2,231	2,483
	Male	103	141	250	297	1,368	1,,191	632	523	737	681	683	1,144	1,953
34	Number of people receiving post-gender-based violence (GBV) clinical care based on the minimum package (GEND_GBV)	9	0	5	54	0	0	0	252	103	116	53	53	112
	Female	4	0	2	21	0	0	0	171	92	108	44	14	104
	Male	5	0	3	33	0	0	0	81	11	8	9	39	8
35	Number of people receiving post-exposure prophylaxis (PEP) services by age and sex (GEND_GBV (PEP))	15	15	17	109	0	0	0	109	0	0	0	86	13
	Female	5	6	5	53	0	0	0	76	0	0	0	60	7
	Male	10	9	12	56	0	0	0	33	0	0	0	26	6
36	Number of contacts who were tested for HIV and received their results	N/A	N/A	N/A	N/A	N/A	N/A	N/A	58	300	456	1,023	1,239	933

#	*Indicator*	FY17				FY18				FY19				FY20
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
	(positive and negative) (INDEX Tested)[14]													
	Female	N/A	N/A	N/A	N/A	N/A	N/A	N/A	23	147	214	477	610	456
	Male	N/A	N/A	N/A	N/A	N/A	N/A	N/A	35	153	242	546	629	477
37	Number of contacts who tested positive for HIV and received their results (INDEX Tested Positive)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11	84	68	121	232	202
	Female	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4	40	40	67	134	131
	Male	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7	44	28	54	98	71
38	Percentage of clients who tested positive for HIV (INDEX Positivity)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	19%	28%	15%	12%	19%	22%
	Female	N/A	N/A	N/A	N/A	N/A	N/A	N/A	17%	27%	19%	14%	22%	29%
	Male	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20%	29%	12%	10%	16%	15%

[14] HTS_INDEX was added as a standalone indicator to monitor index testing services in MER 2.3 (FY19 Q1)

#	*Indicator*	FY17				FY18				FY19				FY20
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
39	Number of positive index clients linked to ART (INDEX ART Link)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	75	63	116	225	197
	Female	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	35	39	64	131	128
	Male	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	40	24	52	94	69
40	Number of beneficiaries served by PEPFAR orphans and vulnerable children (OVC) programs for children and families affected by HIV (OVC_SERV)[15]	0	17,642	16,139	13,769	3,854	4,631	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Female							N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Male							N/A	N/A	N/A	N/A	N/A	N/A	N/A
41	Percentage of OVC beneficiaries who have self-disclosed HIV status to	N/A	88%	38%	100%	100%	100%	N/A	N/A	N/A	N/A	N/A	N/A	N/A

[15] The calculation for OVC_SERV was updated in MER 2.2 (FY18)

#	*Indicator*	FY17				FY18				FY19				FY20
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
	OVC implementing partners (OVC_KNOWNSTAT)													
42	Number of OVCs (<18 years old) whose HIV status is known or unknown by the OVC implementing partner (OVC_KNOWNSTAT Num)	0	11,667	4,521	10,299	2,821	3,239	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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