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Strengthening High Impact Interventions for an AIDS-free Generation

AIDSFREE MOTHER-BABY PAIR IDENTIFICATION AND RETENTION IN CARE THROUGH COMMUNITY HEALTH VOLUNTEERS IN KENYA

FINAL REPORT

SEPTEMBER 2019

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AIDSFree

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ACRONYMS

AIDSFree	Strengthening High Impact Interventions for an AIDS-free Generation
ANC	antenatal care
ART	antiretroviral therapy
ARV	antiretroviral
CHMT	county health management team
CHV	community health volunteer
CHEW	community health extension worker
CHW	community health worker
EGPAF	Elizabeth Glaser Pediatric AIDS Foundation
EID	early infant diagnosis
HCW	health care worker
HEI	HIV-exposed infant
HTS	HIV testing services
LTFU	lost to follow-up, loss to follow-up
MBP	mother-baby pair
MCH	maternal and child health
MOH	Ministry of Health
NASCOP	National AIDS & STI Control Programme
PEPFAR	U.S. President's Emergency Plan for AIDS Relief
PMTCT	prevention of mother-to-child transmission
PNC	postnatal care
SCHMT	subcounty health management team
SOP	standard operating procedure
USAID	United States Agency for International Development

EXECUTIVE SUMMARY

AIDSFree adapted the successful proactive mother-baby pair- follow-up approach implemented in Eswatini to identify, map, and link pregnant women and mother-baby pairs to care at health facilities in two counties in Kenya. In December 2018, AIDSFree Kenya identified and trained community health volunteers (CHVs) in Turkana (27) and Trans-Nzoia (40) counties. These facilities previously reported missed opportunities for provision of HIV testing services; prevention of mother-to-child transmission (PMTCT); and other maternal, newborn, and child health (MNCH) services due to low rates of antenatal care (ANC) attendance, skilled delivery, postnatal care, and immunization services. Health facilities in these counties lacked a structured format to identify and contact pregnant women and mother-baby pairs who had not accessed services or who had defaulted on services. Existing CHVs were often inactive due to lack of training or financial support, weak coordination systems, and the absence of tools for reporting. These conditions made it difficult to demonstrate effects of CHV home visits at the health facility. In addition, there was no proactive follow-up with mother-baby pairs at households, leading to loss to follow-up.

Through the Tembelea program, AIDSFree trained CHVs to visit households in their community and map all pregnant women and postnatal mothers with infants under two years for ANC and skilled delivery services for postnatal care, family planning and immunization/early infant diagnosis services. The CHVs enrolled pregnant women with >34 weeks gestation and postnatal mothers with infants under 2 years. Women and infants who met these enrollment criteria received monthly visits from CHVs to remind them of upcoming appointments and encourage them to complete the visits using specific tools to refer them for care. The key tools used by CHVs included the CHV longitudinal register, home contact form, mapping tool, and referral form. These tools supported CHVs in accounting for their contribution to service delivery uptake by PMTCT and MNCH services.

Between December 2018 and March 2019, trained CHVs conducted community mapping and identification of more than 1,697 pregnant women and mother-baby pairs while enrolling 663 clients—382 ANC clients and 281 mother-baby pairs. Tembelea CHVs reported issuing 2,099 referrals for first and fourth ANC visits, facility delivery, immunizations, early infant diagnosis, postnatal care, and HIV testing services. More than three-quarters of referrals (75 percent) were reported by CHVs as completed—clients were issued referral forms by CHVs and returned to the health facility to seek services. However, not all referrals reported as completed could be traced and confirmed at the facility level due to human resources challenges, including a nursing strike in February 2019. A total of 13 mothers tested HIV-positive in the linkage facilities from December 2018 to March 2019, with 92 percent (12/13) accessing maternal and infant prophylaxis. Out of these 13 HIV-positive clients, seven clients were newly diagnosed following

referral by the Tembelea CHVs. Two clients were known HIV-positive mothers who had defaulted from care and were returned through referral by the Tembelea CHVs. Twenty-three postnatal care clients referred by the CHVs were tested for HIV; of these, two (9 percent) were newly identified as HIV-positive.

Early identification of pregnant women and establishment of a structured, continuous follow-up process for their children is key to ensuring access to all the necessary services for the mother-baby pair. Furthermore, generation of quality data ensures that strategies and services are responsive to the current needs and gaps that affect achievement of elimination of mother-to-child transmission of HIV. Results from this short-term implementation were promising. Recommendations for scale-up include continuing to support existing CHVs in conducting proactive follow-up of mother-baby pairs and identifying new and defaulted clients. The Ministry of Health and HIV/MNCH partners should be encouraged to prioritize supportive supervision and facility-CHV coordination meetings as keys to successful community-facility linkages and client referral. Additional facility-level support, including HIV testing for infants at immunization visits, is also recommended to ensure appropriate services are provided at all entry points.

BACKGROUND

Keeping pregnant women and mother-baby pairs (MBPs) retained in care ensures that mothers and their infants receive HIV testing. If HIV-negative, they are offered a comprehensive prevention package, and if HIV-positive, they are initiated on antiretroviral therapy (ART) along with other comprehensive health care services.

In 2015, 74 percent of eligible women in Kenya were provided with antiretroviral (ARV) prophylaxis as part of prevention of mother-to-child transmission (PMTCT) services—totaling 59,000 out of estimated 79,000 who were eligible (UNAIDS 2016). The majority of women who did not receive ARV prophylaxis are pregnant women who did not attend a clinic for antenatal care (ANC). The infants of the women who missed services for PMTCT, including ARV prophylaxis, often present at clinics much later than other infants and are often more likely to be HIV-positive.

In the first few months post-delivery in Kenya, the rate of MBP retention in care declines steadily. While the rate of vaccination of infants at the six-week immunization visit (Penta 1) is high (98 percent), it declines to 88 percent at Penta 3 and 85 percent at the nine-month measles vaccine visit (Kenya Demographic and Health Survey 2014). This indicates that infants, both HIV-exposed and unexposed, are missing both initial and subsequent key services at child welfare clinic visits.

Enhanced retention in care that starts at ANC allows pregnant women, mothers, and their infants to receive HIV services and other child welfare services from the end of their pregnancy through the first two years of the baby's life. These services include immunizations, growth monitoring, deworming, and vitamin supplements for the infants—and for mothers, infant care and feeding counseling, family planning services, and cervical cancer screening. HIV-positive mothers also access ART refills, receive adherence counseling—or enhanced adherence counseling, if necessary—tuberculosis screening, and viral load testing per the Ministry of Health (MOH) guidelines. While HIV programs have established ways of tracking retention among PMTCT clients and HIV-exposed infants (HEIs) in Kenya through cohort monitoring, little or inadequate information is available on retention across the continuum up to and beyond two years of life for HIV-positive and non-HIV-positive women and their infants.

The Strengthening High Impact Interventions for an AIDS-free Generation (AIDSFree) Project implemented a technical assistance activity in Eswatini from November 2016 through December 2018 to retain MBPs in care through 18–24 months, when babies receive their final HIV status in order to improve PMTCT outcomes (PMTCT_FO). The AIDSFree community focal mother model demonstrated success in improving retention of MBPs in care through PMTCT final outcome at 18–24 months and was documented as a U.S. President's Emergency Plan for AIDS Relief

(PEPFAR) Solution. This model used a proactive community-based approach—trained and compensated community focal mothers who visited all enrolled MBPs (regardless of HIV status) at home, *before* they missed a visit, to encourage them to continue visiting the health facility. During home visits, community focal mothers developed and regularly reviewed a care plan to anticipate mobility over the next 18 months. This proactive approach helped mothers plan for visits, anticipate challenges, and improve their retention in care.

Due to the success of the Eswatini activity in retaining 100 percent of enrolled mother-baby pairs in care per the MOH schedule, the U.S. Agency for International Development (USAID) approved a scope of work for AIDSFree to adapt this model in Kenya. AIDSFree emphasized rapid program start-up with a five-phase approach (Table 1):

Table 1. AIDSFree Phased Approach for Technical Assistance

Phase	Details
1	**Rapid desk review** completed (October 2018).
2 & 3	With Mission concurrence to initiate implementation in October 2018, AIDSFree conducted a **landscape analysis** with **key stakeholder interviews** to inform program and materials adaptation. In November 2018, USAID/Kenya provided guidance to AIDSFree to change county focus to **Trans-Nzoia and Turkana**, rather than Kisumu and Homa Bay.
4	**Identification, selection, and training of CHVs** in both counties was completed in December 2018.
5	Following the trainings, **community mapping** and **mother-baby pair identification and follow-up** was initiated in Trans-Nzoia and Turkana counties in December 2018. In January-March 2019, AIDSFree focused on collaborating with the MOH and other implementing partners to implement the Tembelea model, while building the capacity of partners, counties, and subcounties to encourage endorsement and scale-up.

LANDSCAPE ANALYSIS

The AIDSFree team conducted the landscape analysis in October 2018, including a desk review and engagement of key stakeholders to adapt the MBP follow-up model to the Kenyan context.

Desk review: Retaining mothers and their infants in care after delivery is critical to providing effective PMTCT services and to reducing new pediatric HIV infections. To inform the intervention's design, AIDSFree conducted a desk review to determine factors related to mother-infant cohort retention in PMTCT care in sub-Saharan African countries (Box 1).

Strategies to improve retention in care: A 2018 publication by the Child Survival Working Group identified strategies to improve retention of MBPs in PMTCT programs (Achebe 2018). These include:

- **Peer support** at community and facility level, such as a mothers2mothers (m2m) model that provides education and psychosocial support to mothers living with HIV.
- **Home visits** by community health workers (CHWs) to encourage facility attendance and community sensitization to maternal and child health.
- **Client reminder systems** to improve both retention in care and ART adherence, either through CHWs making calls, or electronic reminders using text messaging/SMS systems.
- **Tracking and tracing standard operating procedures (SOPs)** to instruct health care workers (HCWs) in identifying MBPs who have missed scheduled clinic appointments, the

Box 1. Key Barriers and Facilitators to Retention in Care

Barriers

- **Structural**: Lack of integration of MBP services at health facilities; health facility schedule constraints and wait times; poor quality services; discriminatory health provider attitudes; lack of early infant diagnosis (EID) services; wait time for HIV test results; distance and lack of transportation to clinic.
- **Socio-behavioral**: Lack of social support; stigma and discrimination; nondisclosure of HIV status.
- **Socioeconomic**: Poverty, including lack of funds for transportation to clinic and lack of funds to pay for health services.
- **Individual**: Low education, including lack of understanding the importance of adhering to all facility appointments as a MBP.

Facilitators

- **Structural**: Positive experiences with the health system; MBP linkage in the health information system/facility registers, including paired records and a shared unique identifier; electronic PMTCT databases.
- **Socio-behavioral**: Peer counseling and support, both at the facility and community levels; supportive partner, family, friends; other forms of psychosocial support.

(Obai 2017; Achebe 2018)

procedure for CHWs to trace MBPs in communities and help them return to care, and how HCWs and CHWs should coordinate and communicate to find and follow up with MBPs.

- **Integrated MBP clinics** so that mothers and their children receive services at the same appointment in the same room, including ART for mothers living with HIV.

Kenya stakeholder engagement: Highlights of stakeholder discussions included expression of strong support from the National AIDS & STI [sexually transmitted infection] Control Programme (NASCOP), USAID, county leadership, community health volunteers (CHVs), and health workers. Though the original program design in Eswatini enrolled mother-baby pairs at six weeks postpartum, stakeholders in Kenya emphasized the challenge of late presentation to ANC and poor retention in both ANC and PNC services, as well as the ongoing challenge of home births. This needed to be addressed in the intervention. Health facilities rarely meet ANC, facility delivery, and PMTCT targets based on expected need. Because strong community structures exist in Kenya, the intervention emphasized integrating the MBP approach into, and strengthening, the work of existing CHVs, rather than developing a new community cadre. Stakeholders highlighted low motivation among current CHVs as a challenge that would need to be addressed for the intervention to succeed. There has been strong facility-level investment in Kenya for tracing lost to follow-up (LTFU) among clients (primarily reactive strategies) but there has been minimal community-level proactive engagement.

INTERVENTION DESIGN AND IMPLEMENTATION

This AIDSFree mother-baby pair identification and retention in care model—the Tembelea approach—was designed to provide proactive community-level follow-up of mothers at late gestation (>34 weeks) and MBPs through CHVs in Kenya. Pregnant women identified in the community or at facility level during late gestation, at labor and delivery, and up to six weeks post-delivery were enrolled in the Tembelea program (Box 2) for proactive follow-up. They were assigned to CHVs regardless of their HIV status. The trained CHVs conducted home visits to develop a Clinic Appointment Plan (see Annex 2) that anticipates participants' mobility and to plans for potential challenges to retention in facility care. This proactive approach helps mothers plan for upcoming health facility visits and ensures improved retention in—and use of—facility services. These services included ongoing follow-up in ANC, HIV testing, skilled delivery, and family planning for the mother. It further helps to improve the rate of women completing ANC visits as per schedule and the rate of mother-baby pairs retained in care through 18–24 months after delivery. This clinic appointment plan was reviewed at every visit during implementation and adjustments to appointments made as appropriate. AIDSFree worked collaboratively with the CHVs, health facilities, the subcounty health management teams (SCHMTs) and county health management teams (CHMTs), as well as implementing partners Elisabeth Glaser Pediatric AIDS Foundation (EGPAF) and AMPATH, to implement the model.

Box 2. AIDSFree Tembelea Program

Tembelea—in Swahili, "to visit"—is a home visiting program in Kenya developed by AIDSFree to increase identification, and retention in care, of pregnant women and mother-baby pairs by trained CHVs. These CHVs conducted community mapping and proactive monthly home visits to encourage uptake and completion of antenatal care, skilled delivery, and the full package of postnatal/postpartum services, including immunizations, early infant diagnosis, and HIV testing per the MOH algorithms. The design included structured capacity building for CHVs, through mentorship and review meetings, to improve data compilation and use.

CHVs encouraged pregnant women in the community to develop a birth plan that included skilled facility delivery and access to the full package of child welfare services. For infants, this package included immunizations, growth monitoring, and ensuring that all HEIs' final HIV status was determined at 18–24 months. For mothers, these key health services included family planning and HIV re-testing in accordance with the NASCOP algorithm.

In addition, the AIDSFree Tembelea design encouraged CHVs to interact with all women of reproductive age within their communities to ensure early identification of those needing

services and of those who had missed their appointment clinics or were LTFU. They issued women referrals forms to access first ANC services, fourth ANC, skilled delivery, postnatal clinic services, immunization; HIV services for the mother and EIDs; and ongoing HIV testing for infants. CHVs then followed up with the linkage facility to ensure that referrals were completed.

Subcounty and Health Facility Selection

Photo: EGPAF/Kenya

Tembelea CHVs meet to discuss enrollment updates, referral status, and challenges encountered at the community level.

Based on the guidance from USAID/Kenya to shift focus from Homa Bay and Kisumu counties, AIDSFree implemented the technical assistance activity in Turkana and Trans-Nzoia counties. To select implementation sites in the two counties, the AIDSFree team reviewed site-specific county-level PMTCT_FO data (Data for Accountability, Transparency, and Impact or DATIM 2017), ANC coverage, PMTCT coverage, and skilled deliveries. AIDSFree reviewed sites with high "PMTCT_FO unknown" and low coverage for ANC and skilled deliveries, as well as LTFU as proxy for retention (calculated as Unknown/PMTCT total enrolled HEI) (percentage). AIDSFree ranked the subcounties and then wards according to poor performance, and identified all facilities within poorly performing wards (catchment areas) to establish overall retention (average) for ward PMTCT_FO, ANC, and PMTCT coverage. Finally, the team reviewed geographical considerations (terrain, distance, proximity to referral sites) to arrive at a final selection. The subcounties, wards, and facilities selected are shown in Table 2.

Table 2. Subcounty and Health Facilities Selected

County	Subcounty	Ward	Facilities
Trans-Nzoia	Keiyo	Bidii Keiyo	Biketi Dispensary Muungano Dispensary Keiyo Dispensary Kapkoi Health Centre Kolongolo C.M. Dispensary
Turkana	Turkana West	Nakalale	Makutano Health Center Losajait Dispensary Lolupe Dispensary

Note: *During implementation of the AIDSFree Tembelea program, Losajait and Lolupe dispensaries had staffing shortages. In addition, a nurses' strike in the month of February 2019 led to the closure of three facilities (Biketi, Muungano, Keiyo) and the MCH ward in Kapkoi Health Center.*

Engagement of Ministry of Health and Other Key Stakeholders

AIDSFree continued to engage with the National MOH and NASCOP to provide updates to the national PMTCT technical working group throughout implementation. The county and subcounty health management teams played an integral role in the model design, training, and implementation.

AIDSFree engaged partners implementing HIV service delivery EGPAF in Turkana and AMPATH in Trans-Nzoia) and worked closely with their project teams to ensure successful implementation of this model. Specific activities included entry meetings and sensitization of each of the partners' staff on Tembelea project; joint county, subcounty, and community meetings; and joint supportive supervision to health facilities.

Selection of Community Health Volunteers

AIDSFree engaged the CHMTs and SCHMTs, who emphasized working within existing community structures rather than creating a new community cadre. The landscape analysis indicated that existing CHVs were not active due to lack of training/financial support, weak coordination systems, and absence of tools for reporting. AIDSFree developed selection criteria and a screening tool. In Trans-Nzoia County, the CHVs were invited for a joint screening process with both the SCHMT and AIDSFree project staff, following a community remapping activity to ensure that the whole ward was supported by the Tembelea program. In Turkana County, the AIDSFree team was advised by the CHMT to work with all the CHVs in the selected ward; the team therefore met with all CHVs and all were invited for a four-day training.

Under the current MOH structure, CHVs are trained, coached, and supervised by facility-based community health extension workers (CHEWs), who are salaried frontline formal employees of the health system hired through the SCHMT. AIDSFree engaged CHEWs to help strengthen this

relationship and operationalize the CHEW facility-community engagement. CHEWs were engaged to support CHVs to identify and enroll pregnant women and MBPs and provide support and guidance (Table 3).

Table 3. Pregnant Women and Mother-Baby Pair Enrollment and Follow-Up

Identification and Mapping	• CHV conducted mapping for pregnant mothers and MBPs in the community.
Screening and Allocation (Facility Level)	• CHEW and health facility focal person listed all pregnant women at >34 weeks and MBPs of >6 weeks postpartum. • CHEW allocated listed mothers and children to the respective CHVs. • health facility focal person provided information about the program to the clients and introduced the clients to their CHVs.
Enrollment	• Health worker initiated and completed enrollment into the program at facility. • Client signed enrollment/consent form. • CHV was informed of the new client and arranged for follow-up.
Implementation and Monitoring	• CHVs conducted at least one home visit per month to review Mother & Child Health Handbook and Tembelea Care Plan. CHV reminded client of next scheduled visit and referred to facility those with missed appointments/services. • Continuous monitoring and implementation of program by CHEWs and AIDSFree team was done.

Development of Training Materials, SOPs, and Tools

The project developed a suite of materials for training and standardized tools for implementation (Table 4).

The **CHV training curriculum** consists of a facilitator's guide and presentations for a four-day training program. A participant guide/job aid is available for training participants to reference during the training as well as use as a job aid and refresher tool. Additional training materials include a sample agenda, pre- and post-test, and training evaluation.

This **package of SOPs** provides guidance and tools for program implementation:

- SOP 1: Community Leader Engagement
- SOP 2: Health Facility Roles & Responsibilities
- SOP 3: Conducting Home Visits
- SOP 4: Supportive Supervision & Program Monitoring

Table 4. AIDSFree Tembelea Model Tools

Tool	Purpose	Who Completes Tool	When Tool is Used	Frequency
MOH Referral Form	To document referrals for facility services provided to clients	CHV	During mapping and implementation	Continuous (as needed for missed visits)
Enrollment and Consent Form	To document enrollment and consent into program and to obtain information about client	Facility CHEW	At enrollment	At enrollment (once)
Clinic Appointment Plan	Plan that anticipates MBPs' location at months of scheduled facility visits	CHV	Implementation	At every visit
Home Visit Contact Form	Completed at every visit to client's home upon review of Handbook	CHV	Implementation	At every visit
Mapping Tool	Completed for each client newly eligible for a service in ANC, PNC, and child welfare care	CHV	Implementation	During every visit
Community MBP Register	Register where the CHV enrolls all eligible clients for follow-up	CHV	Implementation	During every visit
Weekly and Monthly Reports	Reports submitted to AIDSFree on a weekly and monthly basis	CHV CHEWS	Implementation	Weekly and monthly

Training of Community Health Volunteers

In December 2018, AIDSFree conducted two trainings (see Box 3 for modules). Training facilitators included AIDSFree/EGPAF Kenya technical advisors, SCHMT members, subcounty medical officer, and health facility staff. In Trans-Nzoia County, 40 CHVs were trained. In addition, five CHEWs attended. In Turkana County, AIDSFree trained 27 CHVs and two CHEWs attended.

Box 3. CHV Training Modules

- Module 1: Introduction to the Model
- Module 2: HIV and PMTCT Basics
- Module 3: MBP Package of Care
- Module 4. Communication Skills
- Module 5: Conducting Home Visits
- Module 6: Understanding the Mother & Child Handbook and Using the CHV Register
- Module 7: Review & Next Steps

AIDSFree adapted materials to train CHVs in their roles, including a facilitator's guide, job aids, and monitoring and evaluation tools. CHVs received training on key communication skills through role plays, emphasizing the importance of keeping mothers', caregivers', and babies' information confidential. The training modules also covered an introduction to the Tembelea model, HIV and PMTCT basics, key health services for mothers and infants, the MOH child welfare schedule, and a review of the tools for home visits. The training included role plays to prepare CHVs for their role, and participants were briefed on their expected duties. AIDSFree trained the CHVs to identify and connect pregnant women and new mothers to care.

Photo: Jennifer Pearson/JSI

Participants during the AIDSFree CHV training in December 2018.

Community Mapping of Pregnant Women and Mother-Baby Pairs

Immediately following training in December 2018, CHVs began mapping all pregnant women and all mother-baby pairs at community level using the mapping tool (Annex 1). All MBPs were mapped regardless of their HIV status. Community mapping continued each month during home visits to continuously identify pregnant women and new mothers with babies under two years of age—as well as antenatal, postnatal, immunization, and HIV/PMTCT defaulters in the community. CHVs linked identified clients to heath facilities and confirmed completed referrals during biweekly meetings at health facilities.

Enrollment

After CHV training, the CHEWs worked with facility staff to review and list all eligible clients from the facility ANC registers for enrollment and allocation to CHVs for community follow-up. Pregnant women and MBPs were enrolled for proactive follow-up at late gestation (>34 weeks) and on/before the 6-week postnatal visit, respectively. Enrollment was conducted at facility level; however, during mapping, eligible clients identified at community level were referred to the health facility for enrollment. Health facilities sensitized mothers on the Tembelea program, enrolling them at the ANC/PNC visit, regardless of HIV status. After explaining the initiative and allowing mothers to ask any questions, HCWs asked consenting mothers to complete the enrollment form with their contact information. This allowed the supervising team to assign pregnant women and MBPs to CHVs for home visits. In addition, the HCW pre-filled the initial section of the Clinic Appointment Plan outlining the estimated facility visit schedule for the mother during ANC, delivery, and PNC, and for infant immunization and EID for exposed infants. Each participating facility received the Tembelea program briefer and enrollment form to discuss with each mother. The CHVs used this information to contact the mother and visit her at her home.

Photo: Jennifer Pearson/ISI

CHV Training in Trans-Nzoia County, December 2018

Household Visits

At the first household visit, a CHV introduced herself and reminded the participant on the initiative's objectives, identified her role as a CHV, and requested to review the Mother & Child Health Handbook to verify the completion of the age-appropriate clinic services. When meeting with the mother or baby's caregiver, the CHV stressed the importance of completing child welfare visits on time, discussed and problem-solved any challenges the MBP encountered in completing visits, and reminded the mother/caregiver of the next scheduled clinic visit to begin

planning for timely attendance. Household visits were guided by several job aids, including a step-by-step checklist developed by AIDSFree (see Annex 3). The checklist covers the full household visit from introduction, to Mother & Child Health Handbook review, to assessment of clinic visit completion, to key messages and communication of next steps to the mother/caregiver.

At the first household visit, CHVs discussed the Clinic Appointment Plan with the mother using a template developed by AIDSFree. This care plan asked mothers to think beforehand about where they would be at each of the scheduled child welfare visits for up to 18–24 months to proactively address any likelihood of missed appointments that might occur due to travel and plan accordingly (see Annex 2). CHVs then used these care plans as job aids to guide follow-up discussions with mothers by reviewing and updating them as needed at each subsequent monthly household visit.

Supportive Supervision

CHVs were supported by a supervising team, led by the facility CHEW (Box 4) with oversight by AIDSFree and the health facility focal persons. This supervision structure ensured that the CHVs received support to fulfill their role successfully and to collect the data necessary to show the intervention's impact. During the first month of household visits, the AIDSFree team accompanied CHVs during home visits to conduct intensive supportive supervision and provide guidance. Each of the eight linkage health facilities identified a focal person who acted as a liaison between the facility and the community, including the AIDSFree team and the CHVs. The focal person also met with CHVs twice-monthly at the clinic to discuss updates, challenges, and status of MBPs (transfers-out, etc.), at which time they supplied CHVs with the list of new MBPs to initiate follow-up in the community.

Box 4. Health Facility Focal Person/Facility CHEW

The health facility focal person's role included ensuring that facility health workers:

- Provided health education and services to mother-baby pairs.
- Recorded services on the Mother & Child Health Handbook and in the facility register.
- Enrolled new MBPs by requesting verbal consent from all mothers, regardless of HIV status.
- Filled in anticipated dates in the Clinic Appointment Plan with MBP's expected clinic schedules based on estimated delivery date or infant birth date.

This allowed the facility to successfully enroll MBPs and release the names and contact information of mothers to CHVs for home meetings.

MONITORING AND EVALUATION

Monitoring and Evaluation Tools

AIDSFree developed a CHV register for routine collection of community data during household visits. CHVs were guided by the home visit guide (Annex 3) and recorded information in their register, including:

- ANC visits (for pregnant women)
- Child's completion of age-appropriate clinic services
- Challenges the mother faced in attending clinic visits
- Action plan discussed to address challenges
- Mother's plan for completing upcoming clinic services on time
- Plans for the next household visit with the MBP.

This tool supported the CHV in verifying that the MOH Mother & Child Health Handbook and the facility registers were consistent and up-to-date.

Data Collection and Monitoring

AIDSFree developed a baseline data collection tool for facility data abstraction from the health facilities registers. Throughout program implementation, data were collected monthly from facility registers for monitoring. AIDSFree also reviewed and collected data from the CHVs' community registers. AIDSFree met weekly with CHVs (see Box 5) to ensure that data collection during household visits was going on well and that those data were being reported/updated at the health facilities. Endline data were collected through the end of March 2019; however, due to the short implementation period, no enrolled children reached the 18-month visit for determination of final HIV outcome.

Box 5. Quality Assurance and Monitoring

- Meetings with CHVs and CHEWs at linkage facilities to enable compilation of weekly reports
- Monthly meetings with CHVs for ongoing mentorship, review of CHV registers, and abstraction of data from the CHV register as well as handling of administrative matters
- Quarterly meetings with all CHVs to monitor program implementation and discuss suggestions for improvement
- Joint supportive supervision by CHEWs and the AIDSFree team
- Joint data quality assessment and supportive supervision by the SCHMT and AIDSFree teams

RESULTS

The results reported are based on data collected at community and facility level from December 2018 through March 2019.

Client Mapping and Enrollment

A total of 1,697 clients were mapped/identified during home visits within the three months of implementation (Table 5). In Turkana County more clients (930) were mapped than in Trans-Nzoia (767 clients)—most with infants who had defaulted on immunization services. The difficult terrain in Turkana, low literacy levels, and overall health system challenges—such as erratic availability of staff at site level—were identified as key barriers to utilization of services by community members.

Table 5. Client Mapping

Clients Mapped	Trans-Nzoia	Turkana	Total
1st ANC *(new clients)*	230	225	**455**
4th ANC *(defaulters)*	94	65	**159**
Mother-baby pairs	127	102	**229**
Immunization defaulters	316	538	**854**
Total	**767**	**930**	**1,697**

As of March 2019, Tembelea CHVs in Trans-Nzoia and Turkana counties conducted screening of pregnant women and mother-baby pairs and enrolled 663 clients—382 ANC clients and 281 mother-baby pairs who met the enrollment criteria. Table 6 shows the distribution by client type and region.

Table 6. Client Enrollment

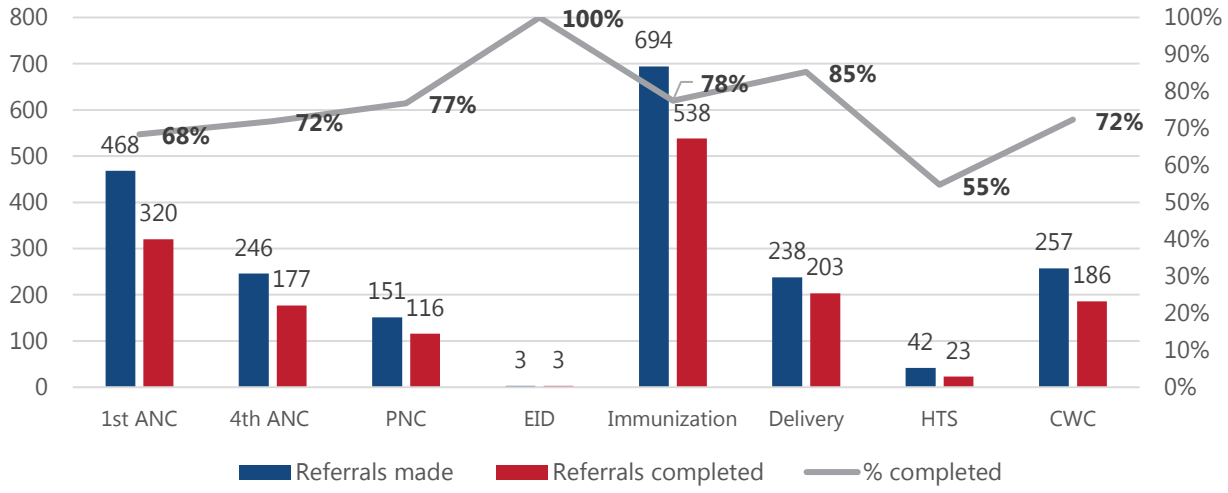
Enrollments	Trans-Nzoia	Turkana	Total
ANC clients enrolled	321	61	382
Mother-baby pairs enrolled	248	33	281
Total	**569**	**94**	**663**

Community Health Volunteer-Reported Client Referrals

Using the MOH form, CHVs provided referrals to pregnant women and MBPs in their communities and linked them to preferred health facilities. During the home visit with enrolled clients, CHVs reviewed the Mother and Child Health Handbook to refer MBPs newly identified as requiring specific services and those who had missed clinic appointments. CHVs visited the corresponding health facilities to confirm linkage. See Figures 1 and 2 for a summary of the referrals reported by CHVs, and rates of completion reported.

In Trans-Nzoia County, CHV-reported completion of referrals for all services within one week of referral was high at 80 percent (1,439/1,799 referrals). However, referral completion for some critical services, including HIV testing services (HTS) at 55 percent, first ANC at 68 percent, fourth ANC at 72 percent, and child welfare care at 72 percent were lower. This may be due to poor documentation and high levels of stigma for HIV related services, as clients may opt to visit facilities outside the catchment area. Low importance attached to fourth ANC and postnatal visits may also have contributed to the lower completion referrals for these visits. The high workload at facilities and the nursing strike in the county also affected completion and documentation of referrals. AIDSFree did not document the clients who completed their referrals after the one-week timeline.

Figure 1. CHV-Reported Client Referrals Completed—Trans-Nzoia County, Keiyo Ward

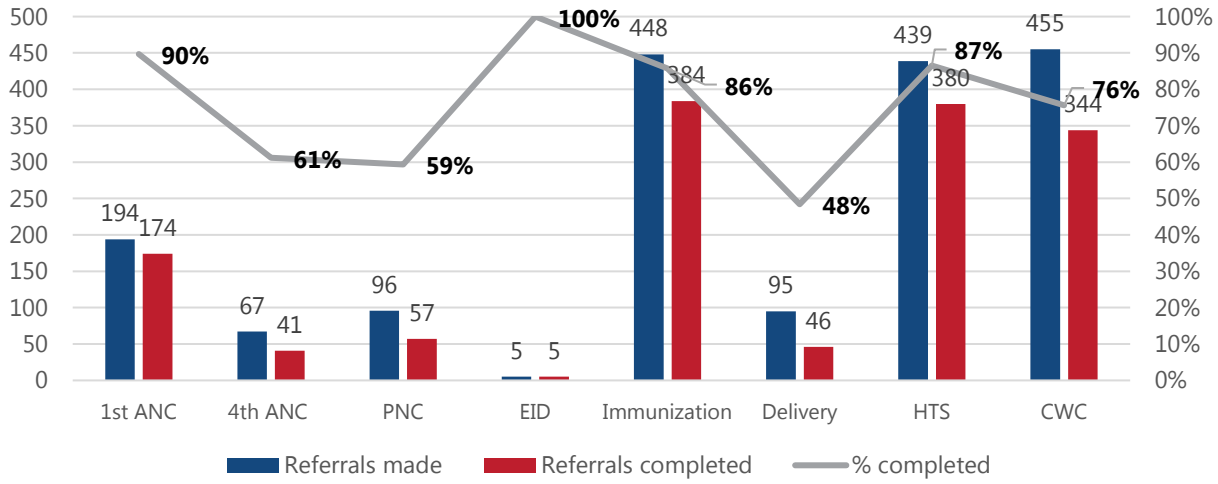


Note: In addition, 91 referrals were reported completed at facilities outside the catchment area.

Completion of referrals in Turkana County was reported as high for EID (100 percent) and first ANC (90 percent)—and lower for skilled delivery (48 percent), PNC (59 percent), and fourth ANC (61 percent). The low completion may be due to high rates of home deliveries because of distance to the health facility, rough terrain with lack transport, and cultural barriers (e.g., a new

mother should stay indoors for more than three days after delivery; mothers in Turkana preferred delivering while squatting). In addition, CHVs in Turkana County escorted clients physically—often without filling the MOH Referral Form—due to lower literacy levels among CHVs. Despite these challenges, the women in Turkana attached high importance to first ANC visits, immunization, and knowledge of one's HIV status.

Figure 2. CHV-Reported Client Referrals Completed—Turkana County, Nakalale Ward

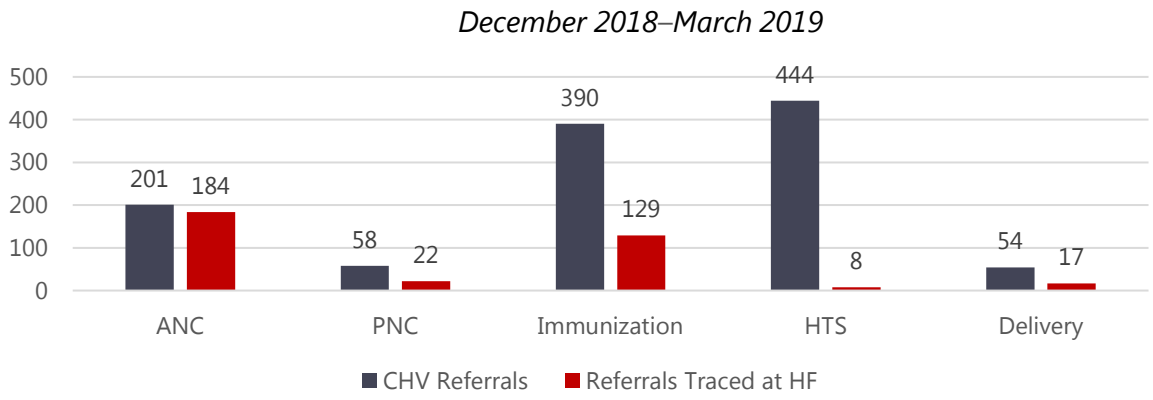


Note: In addition, five referrals were reported completed at facilities outside the catchment area.

Facility-Level Verification of Referrals Made

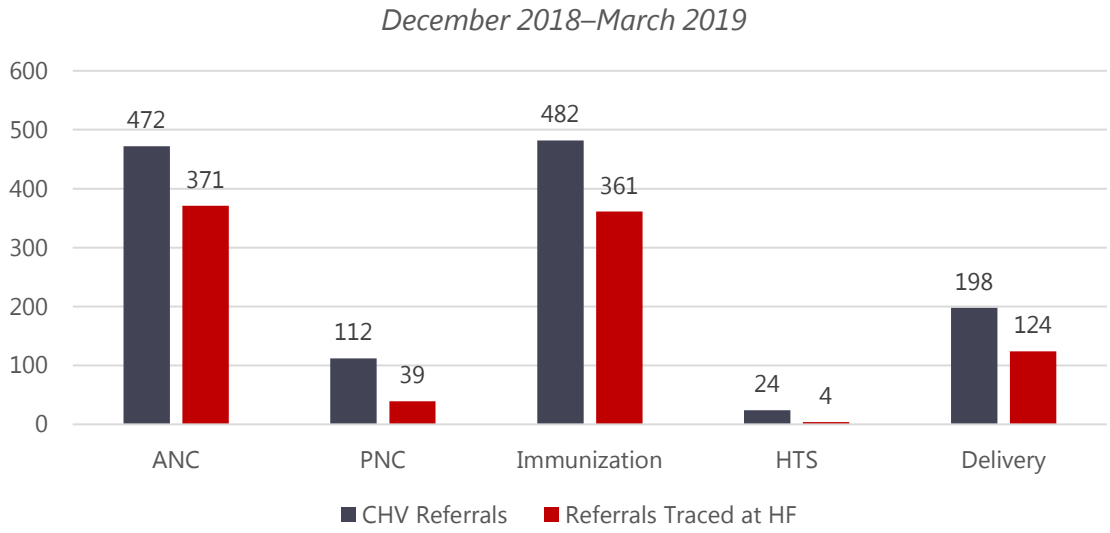
AIDSFree reviewed referrals by CHVs by tracing the referral forms to facility level to further corroborate reports from CHVs. Figures 3 and 4 show availability of referral forms at facilities within the two wards.

Figure 3. CHV Referrals Confirmed at Facility Level, Nakalale Ward



Some clients referred to health facilities in Nakalale Ward did not present referral forms at facility level especially for HTS, EID, and skilled delivery. This was attributed to client-escorted referrals by low-literacy CHVs, delays in MOH provision of referral booklets, and high workloads at the facility level that affected filing and documentation.

Figure 4. CHV Referrals Confirmed at Facility Level, Trans-Nzoia



Similarly, in Trans-Nzoia County, not all referrals reported by CHVs could be traced at the health facility. In particular, the nursing strike affected documentation of these forms at facilities where services were interrupted. The three HEIs in Trans-Nzoia were referred to other facilities (two to Kwanza Sub-County Hospital and one to Kapenguria County Referral Hospital).

AIDSFree also reviewed the referral forms of clients traced at facility level to establish whether these clients had received the services reported and further verified receipt in the respective facility registers—with a specific focus on reviewing HIV testing services provided (figures 5 and 6). HIV testing was conducted for most clients referred for ANC clients, PNC, HTS, and delivery services in both counties. However, infants attending immunization were neither assessed nor screened for HIV exposure status, since health workers were not updated on assessment of exposure status at six weeks for previously negative mothers and their children attending immunization services. Infants referred for EID did not have documented referrals.

Furthermore, a significant number of ANC services (58, 16) and facility delivery services (3, 12) in Turkana and Trans-Nzoia, respectively, were not documented in the facility register even when the referral forms showed that they received services, indicating a potential for underreporting by the facility.

Figure 5. Referrals and HIV Testing, Keiyo Ward

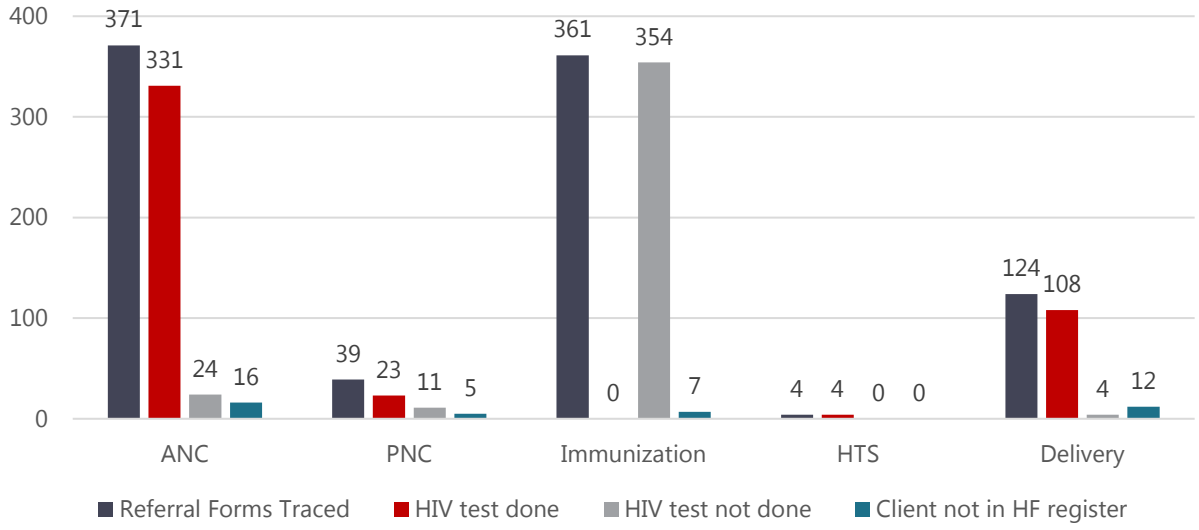
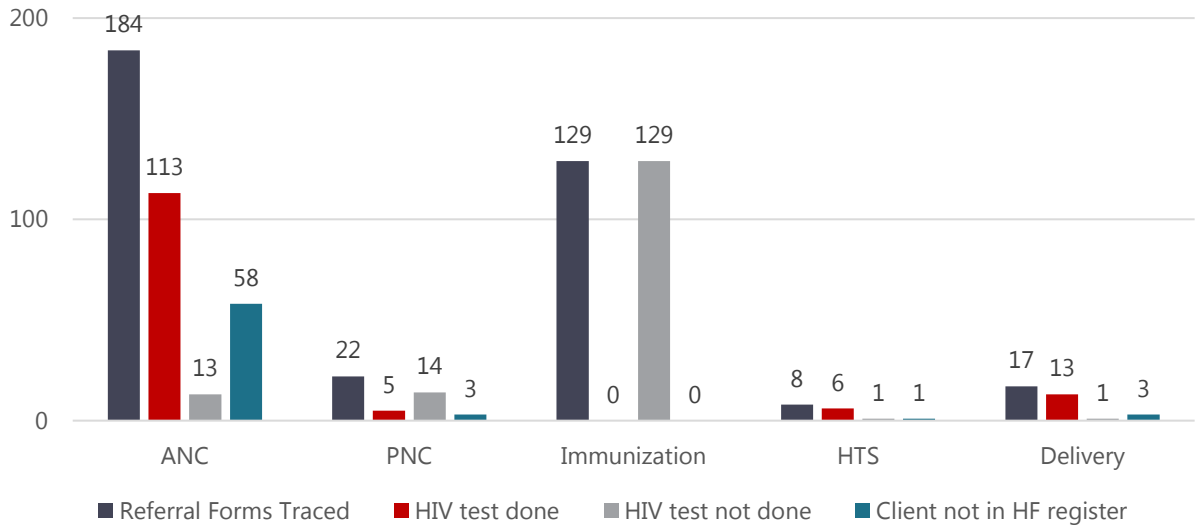


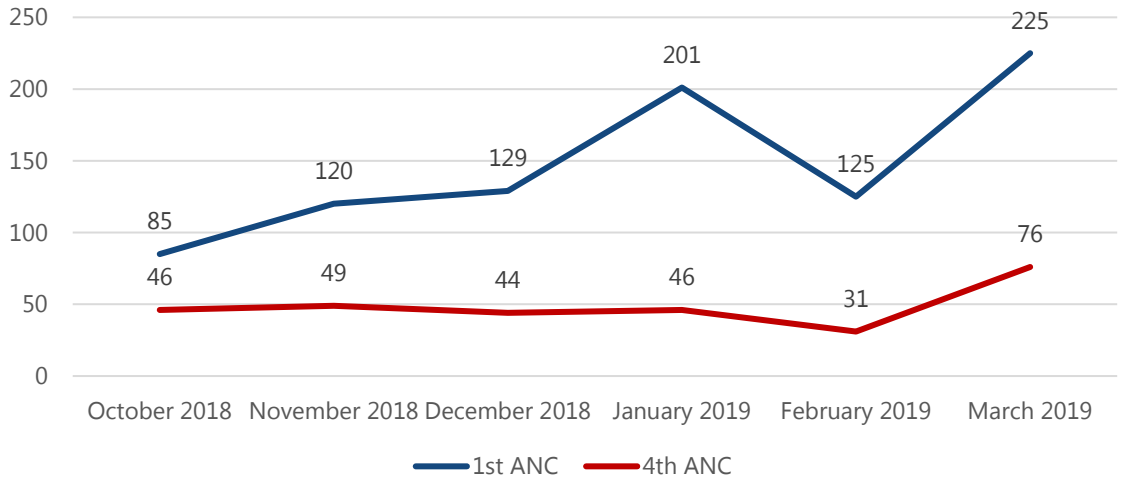
Figure 6. Referrals and HIV Testing, Nakalale Ward



Antenatal Care Coverage

By conducting community mapping, CHVs were able to identify pregnant women who had not yet visited the health facility for their first ANC visit (Figure 7). By identifying pregnancies early at the community level, CHVs can also contribute to improved ANC as per national guidelines.

Figure 7. Number of ANC Visits by Month, Keiyo, and Nakalale



The Tembelea CHVs initiated mapping and referrals in December 2018. During this period, there were increases in both first and fourth ANC visits. However, a drop was observed in February 2019 due to a nursing strike that affected Trans-Nzoia County.

In Turkana County, ANC coverage improved from 162 percent in December to 400 percent in March 2019—significantly above county estimates of expected ANC attendance (Figure 8), whereas in Keiyo Ward (Trans-Nzoia County), it improved from 55 percent in December 2018 to 86 percent in March 2019 (Figures 8 and 9). Census-based targets in Turkana County may need closer county review to reflect the true catchment numbers.

Figure 8. First ANC Coverage, Nakalale Ward

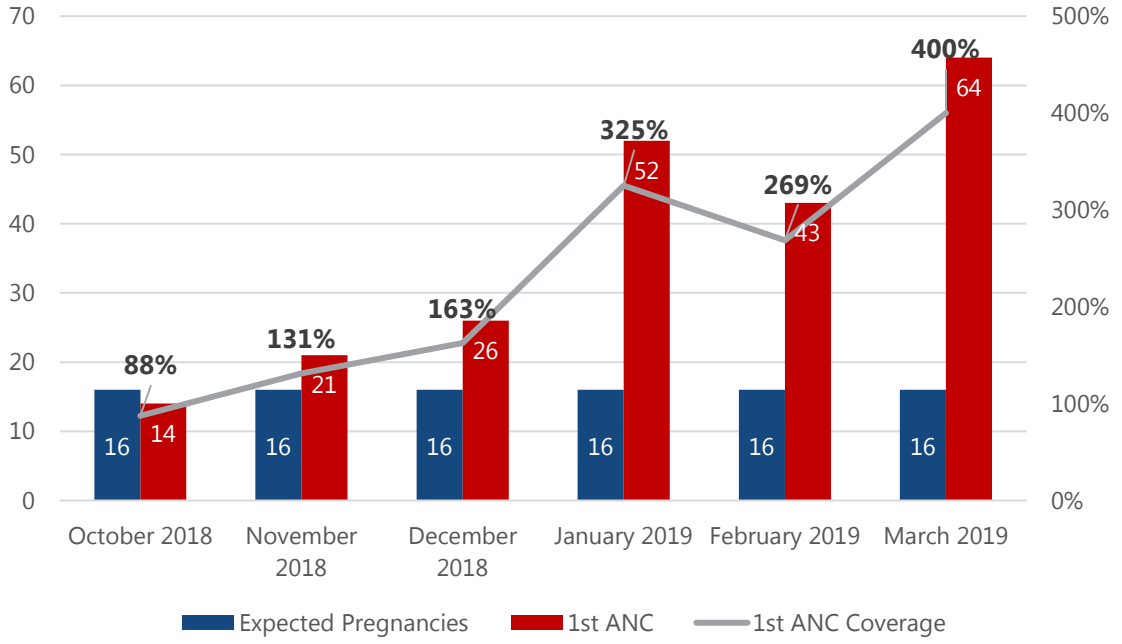
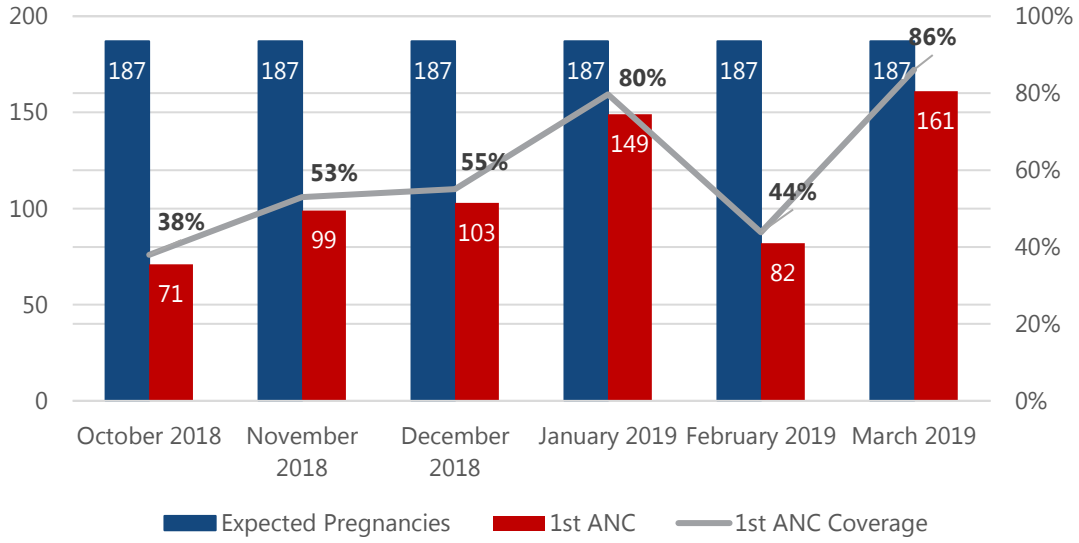


Figure 9. First ANC Coverage, Keiyo Ward



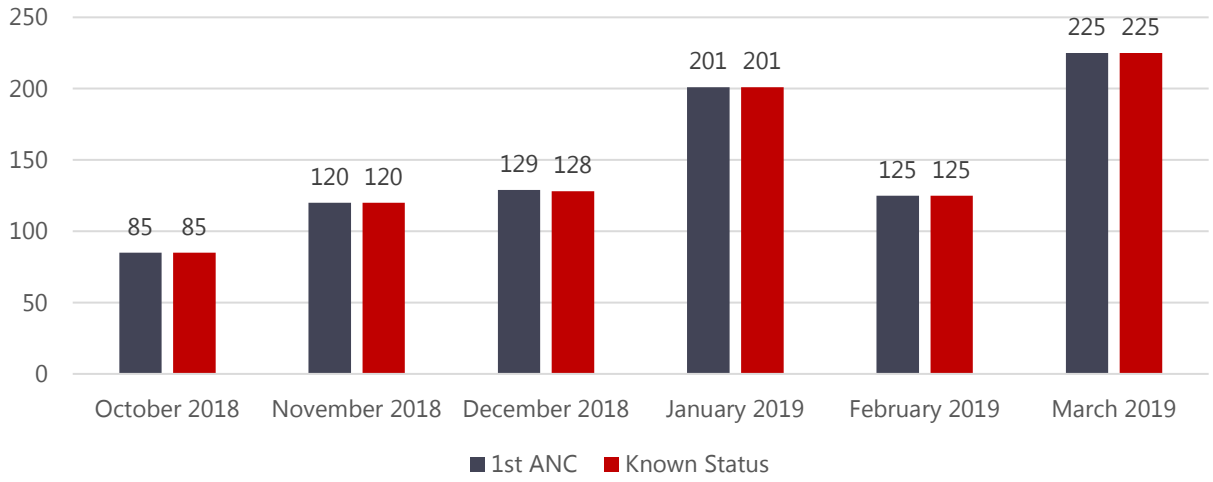
Facility Delivery

CHVs identified a total of 373 deliveries during the implementation period, of which 265 (71 percent) were reported to be facility deliveries. Home deliveries were also identified, with 108 reported to the CHVs. At the facility level, skilled deliveries were consistently observed in Kolongolo Mission Hospital a faith-based facility not affected by a public sector health workers' strike. Maternity wards in other facilities were not active throughout the period due to erratic staffing during the December holidays, human resources shortages, and the nursing strike.

PMTCT and HIV Testing

CHVs provided community-level referrals for facility PMTCT, EID, and HIV testing services. At facility level, there was an increase in the number of clients accessing first ANC services after Tembelea CHVs initiated community referrals in December 2018. A total of 13 mothers tested HIV-positive in the linkage facilities from December 2018 to March 2019, with 92 percent (12/13) accessing maternal and infant prophylaxis. All women attending first ANC had a documented HIV status (see Figure 10).

Figure 10. First ANC Uptake and Known HIV Status



Role of Community Health Volunteers in Identification of PMTCT Clients

Following referrals by Tembelea CHVs, seven (ANC=3, PNC=2, delivery=2) clients were newly diagnosed HIV-positive; two were known HIV-positive mothers who had defaulted from care and returned. A total of 23 PNC clients who were referred by the CHVs were tested for HIV, of whom two (9 percent) were newly identified as HIV-positive. This positivity among breastfeeding mothers demonstrates the importance of postnatal services in identifying missed opportunities (Table 7).

Table 7. HIV Testing and Positivity Rates after CHV Referral

Community-Facility Referral Provided by CHV	#Tested/Known Status	Positives	Known Positives	Total	Positivity Rates (%)
ANC	331	3	1	4	1
PNC	23	2	0	2	9
HTS	4	0	0	0	0
Delivery	108	2	1	3	3
Total	**466**	**7**	**2**	**9**	**2**

Retention of Mother-Baby Pairs

Due to the short implementation duration, Tembelea CHVs could not follow MBPs through 18 months. By end of the AIDSFree implementation in March 2019, 21 clients had moved out of the catchment area, and four mortalities were reported out of a total of 569 MBPs receiving CHV follow-up in Trans-Nzoia County. Based on the mini-audit conducted on the mortalities, two infants died from neonatal sepsis; one ANC client had a sudden death; and one mother had labor complications during a home delivery and died at a referral hospital. In Turkana County, all enrolled mothers were still active as of March 2019.

Table 8. Client Status as of March 2019 (Trans-Nzoia)

Active Clients, Keiyo Ward, Trans-Nzoia (March 2019)					
		Number	Transfer-Out	Deaths	Retention Rate
Keiyo	ANC	45	2	0	96%
	MBP	44	1	0	98%
Biketi	ANC	67	4	0	94%
	MBP	27	2	0	93%
Kapkoi	ANC	94	4	1	95%
	MBP	84	2	2	95%
Kolongolo	ANC	67	3	1	94%
	MBP	49	1	0	98%
Muungano	ANC	48	1	0	98%
	MBP	44	1	0	98%
Total		**569**	**21**	**4**	**96%**

ADDITIONAL FINDINGS AND OBSERVATIONS

Program data collected by the CHVs and health facilities offered additional insights and indications of program success.

Strengthening the Community-Facility Structure

AIDSFree supported the strengthening of an existing community cadre through current community structures. This was an opportunity to fill gaps to enable CHVs to provide support at community level by offering refresher training and a clearer role for CHVs. AIDSFree also provided oversight through ongoing supportive supervision and provision of tools to document CHVs' work and refer pregnant women and mother-baby pairs to health services more effectively. With support and technical assistance, CHVs filled a critical gap by visiting pregnant women and mother-baby pairs at home with tools to refer them for care. CHVs are based in the community, well-known and trusted, and able to build relationships with their clients. CHVs reported that pregnant women were seeking out their community's CHV in between visits to update them on their pregnancy, and mothers are reporting their children's immunizations to them. This relationship allowed CHVs to track the progress of pregnant women and mother-baby pairs, and to provide positive reinforcement to those completing care as well as reminders to those who have missed services. CHVs have become known in the community as champions of maternal and child health. This has helped them gain the support of the community in identifying women who need services but may have been missed by conventional services. Pregnant women enrolled in the AIDSFree Tembelea program also assisted CHVs in identifying other pregnant women who had not started attending ANC, as well as homes with children who were still due for immunization.

Photo: EGPAF/Kenya

Mother-baby pairs referred by CHVs wait for health services at Makutano Health Facility in Turkana County.

Community Mapping and Enrollment of Pregnant Women

Mother-baby pair mapping and follow-up was initiated during pregnancy (>34 weeks of gestation). Visits to prenatal mothers stressed the importance of ANC visits and skilled delivery. In Kenya, many facilities do not meet ANC and skilled delivery or PMTCT targets based on

estimates of women of reproductive age. The MBP activity stressed identifying pregnant women and MBPs at the community level using a simple community mapping tool. This offered an opportunity to identify women who may not be accessing ANC and improve their service uptake, with positive impacts on both ANC and PMTCT service delivery rates.

Improvements in Service Uptake

Improving identification of pregnant women and mother-baby pairs, successfully linking them to health facilities, and increasing their retention in care from ANC through 18 months can help contribute to reduced childhood illnesses. Though the implementation period was short and mother-baby pairs could not be traced through 18 months post-delivery, early results demonstrated that community-facility referrals and linkages by trained, supported, and compensated CHVs can increase identification of clients and their linkage to crucial HIV, PMTCT, and MNCH services.

"We are overwhelmed by the numbers. Since CHVs started supporting the Tembelea MBP project, we have experienced a sudden increase in uptake of ANC services as well as immunizations. We are so grateful for the initiative. We are now planning as a facility to set aside one more day for ANC to accommodate the increased workload."

—Centrine Ekadeli Ikolong, Clinical Officer, Makutano Health Center

Health System Improvements

Linkage Back to Care

The model allowed CHVs to work with health facilities to quickly identify MBPs who had missed a visit and issue them MOH referral forms. However, facility-level provision of services was a challenge. Though HIV testing was conducted for clients referred for ANC, PNC, HTS, and delivery services, infants attending immunization visits were not assessed nor tested for HIV exposure status—a missed opportunity that was discussed with the CHMTs for further action.

Data Quality Improvement

This intervention offered an opportunity for health facility staff to identify data quality issues in the health facility register. CHVs were able to identify when a facility register was incomplete in comparison to the Mother & Child Health Handbook. This process helped facility staff to identify when a child received services at another facility or when information was mistakenly left out of the register. Working with the CHVs enabled facilities to identify and correct register data quality issues early, before they were reported into the national database.

Health Facilities Reopened

Two health facilities in Turkana—Lolupe and Losajait—were initially inactive due to staffing gaps. Baseline data collection from these facilities was not feasible. All clients were being served by Makutano Health Center. However, AIDSFree observed that postnatal care services were provided but not documented in this facility due to the increased workload resulting from the two inactive facilities. AIDSFree worked closely with the SCHMT and the two facilities to address staffing gaps and succeeded in having additional staff posted there to provide comprehensive antenatal, postnatal, HIV testing, PMTCT, and immunization services. This eased the congestion and workload at Makutano Health Center.

LESSONS LEARNED AND RECOMMENDATIONS

The Tembelea program and its early successes offers lessons and recommendations for programs wishing to scale up the intervention in another setting in Kenya (summarized in Box 6). Below are details of key recommendations and lessons from program planning and implementation.

Box 6. Main Factors in Successful MBP Programming

Proactive Approach: Conduct home visits *before* MBPs have missed a visit to encourage appointment attendance and prevent LTFU, instead of tracing defaulters.

Identification of Pregnant Women and MBPs at Community Level: Mapping at the community level can identify women who may not have accessed ANC or PNC and support health facilities to reach their ANC and facility delivery targets.

Support for all Pregnant Women and MBPs: Provide follow-up of all pregnant women and MBPs, regardless of HIV status, as seroconversion of mothers during the breastfeeding period is a continuing driver of mother-to-child transmission of HIV.

Stakeholder Engagement: Engage early, consistently, and regularly with the MOH and health facilities throughout design and implementation.

Integration with Health Facility: Select facilities with an interest in and willingness to enroll MBPs, assign a focal person, work directly with CHVs, and allow access to facility registers.

Support and Compensation for CHVs: Provide regular supportive supervision and monetary compensation for CHVs throughout the intervention.

Focused Scope of CHV Role: Keep CHVs' focus on encouraging all MBPs—regardless of HIV status—to attend ANC, PNC, and PMTCT visits.

Documentation and Review of Referrals: Provide CHVs with adequate tools for documenting referrals and linkages.

Proactive Approach

A key tenet of the Tembelea model is the proactive approach to improving service uptake and completion of recommended visit schedule. Many retention in care programs identify MBPs only after they have missed a visit, whereas Tembelea CHVs conducted home visits with pregnant women and MBPs *before* they missed a visit, preventing delays or lapses in service delivery. The model works with mothers to create a proactive care plan so they can anticipate their location through 18–24 months and strategize to attend all visits, including identifying any barriers that might lead to missed visits and resources needed to avoid LTFU.

Identification of Pregnant Women and MBPs at the Community Level

Mapping and follow-up was initiated among ANC clients (>34 weeks of gestation) and MBPs >6 weeks. Visits to prenatal mothers stressed the importance of ANC visits and skilled delivery. The

MBP activity stressed identification of pregnant women and MBPs at the community level using a simple community mapping tool.

Support for All Pregnant Women and Mother-Baby Pairs

CHVs provided proactive follow-up visits to all pregnant women and MBPs, regardless of HIV status. It was important to the program that CHVs work with both HIV-positive and HIV-negative mothers to avoid the stigma of visiting only households with HIV-positive members, which can lead to discrimination in the community or accidental disclosure of members' HIV status. Maternal seroconversion during the breastfeeding period is a continuing driver of mother-to-child transmission of HIV, so it is critical that mothers who were HIV-negative at delivery still be assigned follow-up so they can receive regular HIV testing to identify if they have acquired HIV and be initiated on treatment to prevent mother-to-child transmission.

> *"This program used the best approach. Tembelea has proved that we can still use the CHVs to improve MNCH indicators. It has been a hard nut to crack and now it has worked. It is an opportunity for us to see how we can expand this."*
>
> —Dr. Esimit, Director of Partnerships—Turkana CHMT

Engagement of Key Stakeholders and Community Gatekeepers

Early, consistent, and regular engagement of the MOH at the subcounty level was crucial during the design, preparation, and implementation of the program. The SCHMTs were involved in initial discussions on developing a model for a community-based program to identify and retain pregnant women and MBPs in care, and provided input on the design. SCHMTs also facilitated sessions in the CHV training to provide context for the importance of the program. Throughout the program, AIDSFree met with the SCHMTs to provide updates and solve problems as a team. AIDSFree also continuously engaged with the community gatekeepers and others throughout program implementation.

AIDSFree used the landscape analysis from 2018 to discuss PMTCT and MBP retention in care with other implementing partners and key stakeholders, including health workers and CHVs. Conversations with stakeholders helped AIDSFree to determine what the established mechanisms for PMTCT and ANC/PNC were and what systems were and were not in place to track MBPs, remind them of appointments, conduct defaulter tracing, and prevent LTFU. This stakeholder engagement helped AIDSFree to avoid duplication of efforts, and enabled use of lessons learned from previous programs in Kenya.

Integration with Health Facility

Health facility staff leadership and willingness to implement the model were critical to its success. The facility focal person at each site was tasked with meeting with the CHVs during supportive supervision sessions and sensitizing new facility staff on the Tembelea CHV model to ensure effective communication and collaboration.

Photo: EGPAF/Kenya

Introduction to the Tembelea CHV program by the local chief.

AIDSFree committed to using existing facility registers to avoid increasing the burden on staff and ensure that improvements in MBP retention were recorded and reportable for the facility. HCWs took on a role in sensitizing and enrolling mothers with new babies, working with CHVs to allowing them access to the registers to verify referral completion. For that reason, it was important to ensure that HCWs were familiar with the program and could see the benefit it yields. AIDSFree worked closely with all health facility staff to help them build relationships with the CHVs and the supervising team.

Part of working closely with the clinics was identifying a focal person in each participating facility to work directly with the CHVs. The role entailed championing the program, explaining it to other health facility staff, and helping to institutionalize client enrollment. The focal person was also tasked with assigning MBPs to CHVs and participating in the monthly feedback meetings with CHVs to hear their challenges and concerns. The focal person also confirmed referrals CHVs made and updated the facility registers from the CHV register to ensure data quality.

Support and Compensation for Community Health Volunteers

It was critical that CHVs receive continuous, consistent, and active supportive supervision and mentoring by the supervising team throughout implementation. This continuous interaction helped the supervising team to identify and address CHVs' challenges and concerns, and also to provide continuous learning and mentorship opportunities.

During the first few household visits, the supervising team accompanied the CHVs to ensure that they were able to apply their training and complete the tools correctly. Supportive supervision meetings, where CHVs meet in a group with their supervising team twice a month, presented an

opportunity for CHVs to share experiences, build relationships among themselves, and be motivated in their role.

In accordance with best practices on supporting community and lay cadres, AIDSFree provided compensation to the CHVs. As the role required regular household and facility visits, the time commitment and dedication required adequate compensation in the form of a stipend, a package of support materials including a t-shirt and backpack, and airtime to make phone calls to mothers to arrange household visits and to follow up with them if they missed a child welfare visit. This compensation ensured dedication to the task, with favorable results. Compensation was based on fulfillment of CHV role—namely, that household visits were completed, not just attempted. The stipend was not based on number of MBPs each followed, but was equal for all who completed the required visits and documentation. As the number of MBPs followed varied by a CHV's location and over time, this method was deemed to be the fairest way of compensating all CHVs.

Photo: EGPAF/Kenya

Turkana County CHV appreciation.

Focused Scope of Community Health Volunteer Role

Although CHVs are often incorporated into multiple health programs and campaigns, AIDSFree designed the role of Tembelea CHVs to be narrow in scope so that the CHVs could concentrate on a key goal—ensuring identification of pregnant women and MBPs retaining them in care for successful implementation. Their role focused on community mapping, encouraging clinic visit attendance, and educating and reminding mothers and caregivers of the importance of clinic visits for the baby's and mother's health and the benefits of retention in care. Keeping the focus on identification and retention allowed CHVs to concentrate on problem-solving and planning with mothers and following up at the community level when MBPs missed visits. However, program teams implementing this approach with an existing cadre must recognize the possibility that CHVs' focus may be pulled into other initiatives.

Facilitated Documentation and Review of Referrals

Providing adequate tools for documenting referral and linkage, and orientation on using these tools, ensures collection of credible data to inform programming. CHVs should receive adequate

tools for documenting referrals and linkages and also, because literacy levels may vary, sufficient training and ongoing supportive supervision to build their capacity to use the tools. Linking CHV referrals at the community level to facility-level improvements is an important way of ensuring that CHVs are held accountable for the work they do. Joint review meetings are recommended to enable success of this linkage.

CHALLENGES AND OPPORTUNITIES

Health Facility Level

Lack of Tools/Registers Linking Mother-Baby Pairs

Because the health of the mother significantly impacts that of her baby, there is a need to monitor and track mothers and their babies as pairs through the continuum of PMTCT and health care. One of the most significant barriers to tracking retention in care in Kenya is that MOH registers do not link mother-baby pairs together, and do not provide them with a unique identifier, either in paper records or electronic medical records and health information systems. This situation makes it difficult to track MBPs across the PMTCT continuum, as well as confirm any changes in care or transfers to other facilities. Linking mother-baby pairs together is considered a best practice for improving PMTCT retention in care and would greatly improve health facilities' ability to track MBPs who relocate within Kenya.

HIV Services at Alternative Facilities

HIV-positive mothers may or may not receive ART care at the same facilities where their infants receive child welfare services due to convenience, stigma, and other factors. If a mother is receiving ART at another facility, it is difficult for the program to track whether she is adhering to her ART regimen and is up-to-date on her viral load testing—key factors in PMTCT success.

Lack of Comprehensive ART/PMTCT Services at Selected Facilities

Some health facilities in Trans-Nzoia and Turkana County were referring clients for testing and ART services to alternate facilities due to inadequate capacity of health workers to provide these services. This challenge is being reviewed by the county health teams and implementing partners.

Poor, Weak, or Inadequate Human Resources

A nursing strike in Trans-Nzoia County in February 2019 interrupted referrals while all of the intervention facilities were closed except one faith-based facility. Though CHVs continued to issue community referrals to alternate health facilities during the strike, the strike negatively affected completion of referrals.

Staff rotations challenged the intervention at the facility level. As staff would leave and new staff were hired and trained, they needed to be sensitized to the intervention. Staff were also responsible for recording visits and services provided in the facility registers. Gaps in some facility registers were observed—some were illegible or incomplete. These data gaps impede

reporting on services provided, and there is a need for quality improvement in ensuring proper records of all services provided.

Two facilities in Turkana—Lolupe and Losajait—were initially not fully active due to challenges with staffing. Baseline data collection from these facilities was not feasible. However, AIDSFree worked closely with the SCHMT to address the staffing shortages, leading to continuous provision of services at these facilities.

Data Quality

Facility data quality challenges are ongoing. A significant number of ANC and facility-based delivery services in both counties were not documented in the facility register even when the CHV-issued referral forms showed services received. This indicates a potential for underreporting by the facility. Further support is recommended at the facility level to improve data quality and documentation.

Antenatal Care Targets

ANC targets are currently based on census data. Though many facilities fall short of these targets, Turkana County may have targets that currently underestimate need. This issue was brought to the attention of county-level teams for further review and action. Additionally, the long distances between facilities, coupled with rough terrain, hinders skilled deliveries in Turkana County. Mobile health services could bring services closer to the people.

Community Level

Home Delivery

Home deliveries are still prevalent in the communities. CHVs identified a total of 108 home deliveries (70 in Trans-Nzoia and 38 in Turkana) between December 2018 and March 2019. Home deliveries can lead to birth complications for mother and child and prevent the provision of ARVs for PMTCT during labor, as well as EID and other critical health services upon delivery.

Use of Existing Cadre

In Kenya, AIDSFree used an existing cadre of CHVs to act as Tembelea CHVs, rather than recruiting a new cadre, which offered both opportunities and challenges. The current MOH policy requires all CHVs to complete a ten-day, MOH-led basic training before they begin their work, with supplemental technical training by local government. Working within existing structures rather than recruiting and screening a new cadre allowed consistency and increased opportunity for sustainability. However, a number of challenges were identified.

Training and Documentation Skills

In Trans-Nzoia County, CHVs had little support. The cadre was unpaid and the last training for CHVs in Trans-Nzoia County was conducted in 2012. Prior to the AIDSFree Tembelea program, CHVs were not documenting their activities, challenges, and successes in either county—no community-level register had been provided to CHVs. AIDSFree introduced a community-level register and provided close supervision and ongoing training to CHVs to document their progress.

Photo: Jennifer Pearson, AIDSFree, JSI

CHV training in Trans-Nzoia County, December 2018.

Literacy Levels

Because CHVs are an existing cadre, literacy levels varied and were not assessed pre-training. Training observation showed that in Trans-Nzoia County, most CHVs have sufficient reading and writing skills and the supervising team continued to monitor closely to determine which CHVs required additional support. In Turkana County, CHV literacy levels were observed to be much lower and supportive supervision needs were more intensive. Scale-up considerations include simplification of the community CHV register and other registers as well, especially in Turkana County.

TRANSITION TO LOCAL STAKEHOLDERS

Though the program implementation period was limited and data on mapping, enrollment, and referrals were only available for a period of three months, early results indicated that the model is feasible and well-accepted in the community. When trained, supported, provided with tools for documentation, and compensated, CHVs can provide proactive identification and follow up with pregnant women and MBPs in their community. This support can help facilities meet ANC/PMTCT targets and support pregnant women and MBPs to link to and be retained in care.

"We are so grateful for the initiative, we want to ensure pregnant women attend ANC, present for skilled delivery, and for children to be fully immunized."

—Centrine Ekadeli Ikolong, Clinical Officer, Makutano Health Center

AIDSFree closely engaged with the SCHMT throughout the design and implementation of the mother-baby pair model. The project held a meeting in April 2019 to share lessons learned from the CHVs and their implementation experience. AIDSFree also closely engaged with AMPATH from the design phase and throughout implementation of this model, and later shared results for potential scale-up in AMPATH-supported sites.

Photo: EGPAF/Kenya

SCHMT members presenting Tembelea CHVs with certificates of participation, April 2019.

AIDSFree partner EGPAF is exploring the potential of scale-up of the program in Timiza and 90 sites in Turkana County, and both implementation counties expressed interest in further adopting the model for improved MNCH and PMTCT indicators. Additional discussions were also ongoing with USAID/Kenya about possible scale-up opportunities following program close.

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ANNEX 1. MAPPING TOOL

This form should be completed monthly, listing all new women identified in the community.

Mapping Form

CHV Name & ID_____											Month_____			
Serial	Date	Name	Age	Mobile number	Village	Marital Status	Client type (ANC, PNC)	Delivery place (Facility/Home)	Services Referred (see key below)	Facility referred	Referral given (Y/N) Referral form No	Date client offered to visit clinic	Referral complete (Y/N)	Comments
1														
2														
3														
4														
5														

Referrals

Number	ANC	PNC	HTS	EID	CWC	Immunization —New	Immunization —Defaulters	Delivery
Referrals made								
Referrals completed								

Key

1. ANC: antenatal care
2. PNC: postnatal care
3. HTS: HIV testing services
4. EID: early infant diagnosis
5. CWC: child welfare care
6. Immunization—new
7. Immunization—defaulters
8. Delivery

ANNEX 2. CLINIC APPOINTMENT PLAN

Part A: Child's Clinic Appointment Plan

Mother's name: _____ ANC number: _____

Baby's name: _____ CWC number: _____

Location: _____ Village: _____

Mother's mobile number(s): _____ Partner/alternate number: _____

Baby's date of birth: _____ CWC health facility: _____

Do you anticipate staying outside your location (travel, school, work) before your baby is 24 months / during the next two years? ☐ YES ☐ NO

If *yes*, when (approximate date/month or baby's age): _____ For how long? _____

Instructions: *Column 1 to be filled in at clinic when MBP is assigned to CHV. Anticipated locations and caregiver information to be filled by CHV at first household visit, then reviewed, and updated, as needed, at all subsequent visits.*

	Calculate estimated month of clinic visit based on birthdate	Where do you anticipate staying on this date? *(Community/Town)*	Do you anticipate your baby will stay with you? *YES or NO*	If no, who will be baby's primary caregiver? (*Name/Relation)*	Where does this person stay & mobile number? *(Community/ Sub-area & Mobile)*	Comments in case of change to previous plan
At delivery	*Expected due date:* _____	*Delivery place:* _____	N/A	N/A	N/A	N/A
When baby is 6 weeks						
When baby is 10 weeks						
When baby is 14 weeks						
When baby is 6 months						
When baby is 9 months						
When baby is 12 months						
When baby is 18 months						
When baby is 24 months						

Part B: Mother's ANC and PNC Clinic Appointment Plan

Mother's Name: _____ ANC Number: _____
Location: _____ Village: _____
Mother's mobile number(s): _____ Partner/alternate number: _____
Do you anticipate staying outside your location (travel, school, work) during ANC or before your baby is 24 months / during the next two years? □ YES □ NO
If *yes*, when (approximate date/month or baby's age): _____ For how long? _____

Instructions: *Column 1 to be filled in at clinic when ANC/postnatal client is assigned to CHV. Anticipated locations and caregiver information to be filled by CHV at first household visit, then reviewed, and updated, as needed, at all subsequent visits.*

	Calculate estimated month/year of clinic visit based on gestation/age of child	**Where do anticipate staying on this date?** ***(Community/Town)***	**Do you anticipate your baby will stay with you?** ***YES or NO***	**What is the name of the nearby facility if you will be away from home?**	**Which alternative number can be used to reach you?** ***Name of contact person***	**Comments in case of changes to previous plan**
At 4th ANC						
At delivery						
When 6 weeks post-delivery						
When 6 months post-delivery						
When 12-months post-delivery						
When 18 months post-delivery						
When is mother is 24 months post-delivery						

Review Clinic Appointment Plan with the mother (or caregiver) at each household visit—reviewing each upcoming clinic visit and original information provided. You will update/change information as needed (mobile numbers, future plans to leave community).

ANNEX 3. HOME VISIT CHECKLIST GUIDE

These steps should be completed **<u>at every household visit</u>** with a mother-baby pair:

Steps—Be sure you complete each step	Questions
1. Follow **home entry protocol**—introduce yourself as a Tembelea CHV.	**Is ANC mother up-to-date? Check:** If mother attended the **4th ANC visit** If mother had **skilled delivery** **Is PNC mother up-to-date? Check;** If mother attended **6-week** visit If mother attended **6-month** visit If mother attended **12-month** visit If mother attended **18-month** visit If mother attended **24-month** visit **Is baby up-to-date?** If **6-9 weeks**, check 6-week visit If **10-13 weeks**, check 10-week visit If **14-23 weeks**, check 14-week visit If **6-8 months**, check 6-month visit If **9-11 months**, check 9-month visit If **12-17 months**, check 12-month visit & check most recent growth monitoring visit If **18-24 months**, check 18-month visit
2. Explain the Tembelea activity and the **purpose of your visit.**	
3. Request **time and private space** to talk about facility visits.	
4. Ask to review **Mother & Child Handbook** and to fill tools with information needed. *Review and complete each step carefully.*	
5. If antenatal client, review mother's ANC visits and testing. If postnatal, review delivery information, testing and ask baby's current age in weeks/months. **Verify baby's age and clinic visits in Mother & Child Handbook.** *To determine if mother-baby pair is up-to-date with clinic visits in Mother-Child Handbook, see schedule at right →*	

! STOP! ** IF MOTHER-CHILD HANDBOOK IS <u>NOT</u> UP-TO-DATE, TURN PAGE OVER **

IF MOTHER & CHILD HANDBOOK IS UP-TO-DATE, CONTINUE TO FILL BELOW:

Congratulate mother and reinforce importance of continuing clinic visits for mother and baby.	**Comments** *(in diary)*
Review mother-baby pair **Clinic Appointment Plan**—update information, if needed.	
Review when **next clinic visit** will be (approximate date), how to get there (clinic location/transportation).	
Remind what to bring to the next facility visit, including **Mother & Child Handbook.**	
Review **Mother & Child Handbook** for recent service information.	
Complete **Home Visit Contact Form** for home visit.	

Complete **Community CHV Register** for household visit using Handbook if recent HIV testing or immunization services completed (since last home visit).	
Thank mother for her time, remind her you will return in a month, and agree on the day/time for the **next household visit.**	**Preferred household visit days/times** *(in diary)*

IF BABY'S HEALTH CARD IS <u>NOT</u> UP-TO-DATE OR *IF PREGNANT WOMAN <u>MISSED</u> ANC VISIT* *If clinic services were missed, complete each step below—*	**Note comments in Contact Form & CHV Diary**
Discuss with the mother, and **document in diary**, the reasons they were **unable** to attend the clinic visit to receive ANC or mother-baby pair services.	
Discuss ways to **overcome any challenges** that led to missing the clinic visit.	
Complete and give her a **MOH Referral Form** for the missed clinic visit/services.	
Encourage her to visit clinic **as soon as possible** for the missed visit/services.	
Review **Clinic Appointment Plan**—update information, if necessary.	
Review when the **next clinic visit** will be (approximate date/month), how to get there (clinic location and transportation).	
Remind what to bring to the next clinic visit: mother-baby pair and **Mother & Child Handbook.**	
Review **Mother & Child Handbook** for last clinic visit.	
Complete **Case Contact Form** for this household visit.	**Note in CHV diary preferred home visit days/times**

Challenges & Action Plan: Document these in your CHV diary, Home Visit Contact Form, or Mapping Tool.

Additional Comments: Document these in your CHV diary, Home Visit Contact Form, or Mapping Tool.

Plan for Next Monthly Household Visit: Document this in your CHV diary and Home Visit Contact Form.

ANNEX 4. COMMUNITY REGISTER

Column		Instructions	Where to Find the Information in Mother & Child Handbook
A	**Serial Number**	This is a sequential counter from 1 to n where n is the last client enrolled. It assists in quickly counting the number of mother-baby pairs enrolled on the program.	n/a
B	**Mother_ID**	Enter the unique number provided to the mother. The format of the Number is: (CHV00-0001). The first five digits are the CHV number, with a dash followed by another four-digit unique serial number assigned, e.g., CHV05-0203.	Assigned by Supervising Team
C	**Names**	Record mother's three names.	Mother & Child Handbook Cover
D	**Age**	Record age of mother in years.	Page 4
E	**Contact/Number**	Enter the mother's contact/telephone number.	Page 4
F	**Village/Landmark**	Enter the name of the village/estate/landmark where the client is currently staying.	Page 4
G	**Facility attended**	Record the facilities the mother is attending. If she has not attended any, leave blank until she confirms linkage.	Page 4
H	**Enrolled as ANC/PNC**	If mother has not given birth indicate "1" for ANC; if she has given birth indicate "2" for PNC (1=ANC 2=PNC).	N/A
I	**Number of ANC visits attended before enrollment**	Record number of visits.	Page 8
J	**ANC Number**	Enter antenatal clinic number that was given to the client for this pregnancy at their first antenatal visit in the clinic.	Page 4
K	**CCC Number**	If mother is HIV+ and in care, indicate the CCC number of facility attending care from the Mother & Child Handbook.	Ask to see ART Card or facility registers

Column		Instructions	Where to Find the Information in Mother & Child Handbook
L	**Gestation at enrollment (in weeks)**	Record the duration of pregnancy expressed in weeks.	Page 8 – Fundal Height
M	**Date attended 1st ANC visit**	Record the date in the format DD/MM/YYYY of the 1st ANC visit.	Page 8
N	**Date attended 4th ANC visit**	Record the date in the format DD/MM/YYYY of the 4th ANC visit.	Page 8
O	**Expected date of delivery**	Record the date in the format DD/MM/YYYY of the expected date of delivery from the Mother & Child Handbook.	Page 4
P	**Birth plan reviewed (Y/N)**	Y=Yes N=No	Back of front cover (page 0)
Q	**Facility of planned delivery**	Record the name of the hospital/facility the mother is planning to go for delivery.	Back of front cover (page 0)
R	**Date of delivery**	Record the date of delivery in the format DD/MM/YYYY.	Page 16
s	**Place of delivery**	Record the place of delivery whether 1=Facility 2=Home/non-facility.	Page 16
T	**If (1) facility, name of facility**	Record the name of facility where the child was delivered.	Ask mother for name of facility
U	**Skilled delivery**	If delivery was conducted by a skilled personnel indicate "Y" otherwise indicate "N" if Unskilled.	Page 16
V	**HIV test at delivery**	HIV testing done at delivery?	Page 16
W	**HIV test results**	Delivery HIV test results received? (P=Pos. /N=Neg./KP=Known Pos./UK=Unknown)	Page 16
X	**PNC No**	Record the PNC number provided to the number in the facility from the Mother & Child Handbook	Page 4

Column		Instructions	Where to Find the Information in Mother & Child Handbook
Y	**Facility attended for PNC**	Record the name of the facility the mother is attending for PNC.	Page 4
Z	**PNC review (48 hours)**	Record the date the mother attended the facility for 48 hours PNC review from the Mother & Child Handbook DD/MM/YYYY.	Page 19 or 20 – Postnatal Examination
AA	**PNC Review (1–2 weeks)**	Record the date the mother attended the facility for (1–2 Weeks) PNC review from the Mother & Child Handbook DD/MM/YYYY.	Page 19 or 20 – Postnatal Examination
AB	**PNC Review (4–6 weeks)**	Record the date the mother attended the facility for (4 - 6 Weeks) PNC review from the Mother & Child Handbook DD/MM/YYYY.	Page 19 or 20 – Postnatal Examination
AC	**HIV Testing - 6 weeks**	Indicate the date and HIV result at 6 weeks from Mother & Child Handbook (P/N/KP/UK).	Page 19 or 20
AD	**HIV Testing - 6 Month**	Indicate the date and HIV result at 6 months from Mother & Child Handbook (P/N/KP/UK).	Page 19 or 20
AE	**HIV Testing - 12 Month**	Indicate the date and HIV result at 12 months from Mother & Child Handbook (P/N/KP/UK).	Page 19 or 20
AF	**HIV Testing - 18 Month**	Indicate the date and HIV result at 18 months from Mother & Child Handbook (P/N/KP/UK).	Page 19 or 20
AH	**If positive, initiated on ART? (Y/N)**	Only fill if known HIV+ Y=Yes, N=No	Page 19 or 20
AI	**Infant ID**	Enter the unique number provided to the Infant. The format of the number is: (CHV00-0001-1). The first 5 digits are the CHV number, with a dash followed by another 4-digit unique serial number assigned, e.g., CHV05- 0203-1.	Assigned by Supervising Team
AJ	**CWC Number**	Record the CWC number from the Mother & Child Handbook.	Page 22 or 23

Column		Instructions	Where to Find the Information in Mother & Child Handbook
AK	**Infant Name**	Record the names of the infant.	Mother & Child Handbook Cover
AL	**DOB**	Enter the date of birth of the infant in the format DD/MM/YYYY.	Page 22 or 23
AM	**Name of facility child attends**	Record the name of the facility the child attends.	
AN	**BCG**	Record the date in the format **MM/DD/YYYY** of the day the vaccination was given. This information is available in the Mother & Child Handbook.	Page 32
AO	**Polio birth dose**		Page 32
AQ	**OPV 1**		Page 32
AR	**DPT /Hep.B /Hib.1**		Page 32
AS	**PCV 10 (Pneumococcal) 1**		Page 32
AT	**Rota1**		Page 32
AU	**OPV 2**		Page 32
AV	**DPT/Hep. B /Hib. 2**	Record the date in the format **MM/DD/YYYY** of the day the vaccination was given. This information is available in the Mother & Child Handbook.	Page 32
AW	**PCV 10 (Pneumococcal) 2**		Page 32
AX	**Rota 2**		Page 32
AY	**OPV3**		Page 32
AZ	**DPT/Hep. B/Hib. 3**		Page 32
BA	**PCV 10 (Pneumococcal) 3**		Page 32
BB	**IPV Polio**		Page 32

Column		Instructions	Where to Find the Information in Mother & Child Handbook
BC	**Measles-Rubella (MR) – 6 months (HEI)**	Record the date in the format **MM/DD/YYYY** of the day the vaccination was given. This information is available in the Mother & Child Handbook.	Page 33
BD	**MR – 9 months**		Page 33
BE	**MR – 18 months**		Page 33
BF	**Fully Immunized Child**		Page 33
BG	**Child Exposed? Y/N/UK**	If the child is HIV-exposed indicate "Y" if not "N" and if unknown record "UK." HEI = HIV-exposed infant	Page 26 – Ticked box for HEI *(Reasons for Special Care)*
BH	**HEI Number**	Record the HEI number provided to the infant in the facility in the format **MM/DD/YYYY.**	Facility register
BI-BP	**Date tested 6 weeks Date tested 6 months 12 months 18 months**	Record the date of HIV test at the various months and the result, this information is available from the Mother & Child Handbook.	Page 35
BQ	**Outcome @18 months**	Indicate the outcome of the HEI at 18 months from the Mother & Child Handbook.	Page 35
BR	**Infant HIV status (P/N/UK)**	Record the HIV status of the infant whether Positive or Negative.	Page 35
BS	**Started ART (Y/N)**	If the infant is HIV+, record if they are on ART or not.	Page 35

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