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INNOVATIONS AND IMPACT TOWARD THE ELIMINATION OF MOTHER-TO-CHILD TRANSMISSION IN KENYA



**Elizabeth Glaser
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Fighting for an AIDS-free generation

Mother-to-Child Transmission Remains a Challenge

Mother-to-child transmission of HIV (MTCT) is the transmission of HIV from a mother to her child during pregnancy, labor, delivery, or lactation and breastfeeding. Enormous progress has been made in reducing MTCT over the last ten year. This is highlighted by the 53% reduction of new pediatric infections between 2010 and 2020 declining from 320,000 to 150,000.¹ Despite this extraordinary progress, we are not closing the gap fast enough in MTCT; the last few years have shown a stagnation in PMTCT coverage. MTCT rates still vary considerably by country and region. We do know however that a proven package works universally, including ensuring early identification of pregnancies, early access to antenatal care (ANC) services, provision of tailored services to reduce potential risks, and continued engagement in cases through postnatal care services. EMTCT remains a critical priority for Kenya, where innovations in prevention, risk management, and quality service provision are being implemented.

Across western and central Africa, MTCT rates continue to be high, with an estimated transmission rate of 20.2%, compared with those in Eastern and Southern African of 9.9%, resulting in approximately 180,000 children acquiring HIV.² For these countries to achieve elimination of mother-to-child HIV transmission (EMTCT), they need to ensure the availability and implementation of quality, comprehensive care and services for women of reproductive age and pregnant women.



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Prioritizing EMTCT in Kenya

In Kenya, as of 2020, prevention of mother-to-child transmission (PMTCT) coverage was 94% nationally and 98% in Homa Bay County.² The national MTCT rate increased alarmingly between 2015 and 2020 from 8.3% to 10.8%.³ Pregnancy and breastfeeding remain periods of high risk of transmission. According to the National AIDS and STI Control Programme, 5% of mothers are newly infected with HIV during pregnancy and 17% during breastfeeding, which pose increased risks of transmission to the infants. Furthermore, 21% of mothers who are pregnant or breastfeeding and living with HIV do not receive antiretroviral therapy (ART) and 47% drop off of ART, which highlights the heightened risk for transmission and poor health outcomes in these phases. Approaches geared toward addressing MTCT need to be prioritized and employed nationally in order to make significant gains toward elimination.

In recognition of the urgency of prioritizing PMTCT, the Elizabeth Glaser Pediatric AIDS Foundation (EGPAF) in Kenya identifies this as a key area of focus. Through its U.S. Centers for Disease Control and Prevention (CDC)-funded project, Timiza90 (Reaching 90), EGPAF-Kenya aims to support the implementation and expansion of high-quality, sustainable, and comprehensive HIV prevention, care, and treatment programs. Within that scope, a multipronged approach is implemented at supported health facilities to support early identification and quality implementation of PMTCT services for pregnant women and early intervention for identified HIV-exposed infants.

EGPAF-Kenya currently supports 12 counties and 217 facilities. Since 2000, EGPAF-Kenya has supported over 2 million women with PMTCT services, enrolling over 100,000 pregnant women in treatment and preventing HIV transmission to approximately 20,000 babies. The MTCT rate in Homa Bay County has decreased from 16.5% in 2015 to 9.1% in 2020, but maintaining momentum and continuing to make progress toward eliminating MTCT is critical.²

Implementation of PMTCT Approaches

EGPAF-Kenya implements a suite of approaches aiming to address recognized gaps in the PMTCT cascade. These approaches aim to ensure early and timely engagement with pregnant women and infants in care and initiation of ART, comprehensive services designed to reduce their risk of HIV transmission, and innovative retention models to retain or reengage them in care.

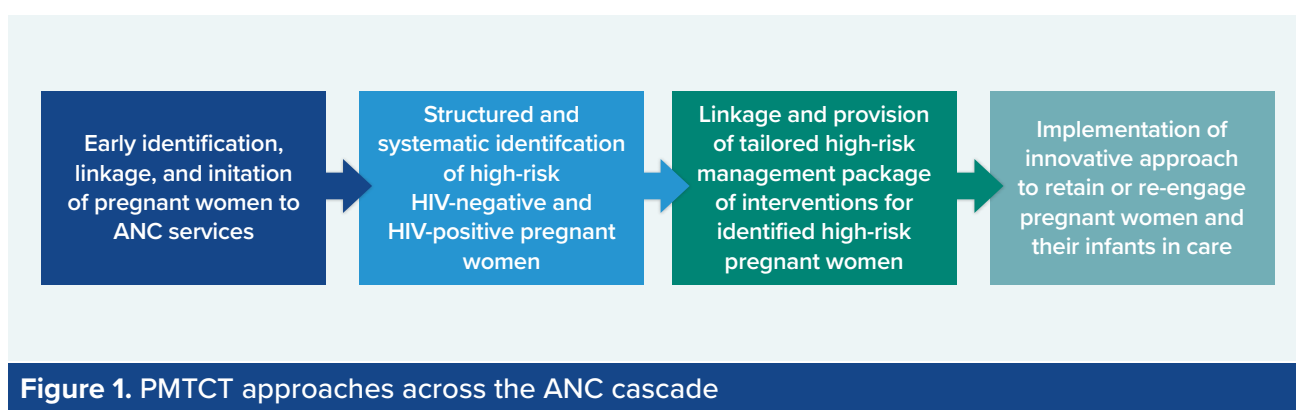


Figure 1. PMTCT approaches across the ANC cascade

INITIATING EARLY ACCESS TO ANC SERVICES FOR PREGNANT WOMEN

Rationale: Low and late attendance to antenatal care (ANC) services among pregnant women remains a critical challenge to providing them with optimal care. It also exacerbates the challenge of identifying and linking pregnant women with timely, appropriate care. Delayed identification of HIV-positive pregnant women hinders timely initiation of ART, increasing the risk of transmission.

Objective: Improve early identification, linkage, and access to ANC services in Homa Bay County for HIV-positive pregnant women.

Intervention: Provide pregnancy screening for all women of reproductive age seeking outpatient services in EGPAF-supported health facilities in Homa Bay using a standard questionnaire. Refer women screening positive to the lab for a pregnancy test. Following a positive pregnancy test and receipt of outpatient department (OPD) services, escort women to the maternal and child health (MCH) clinic to initiate ANC services.

Approach:

- ✓ Sensitization of county and sub-county health management teams
- ✓ Sensitization of clinical staff (clinicians, lab technicians) in OPDs at supported health facilities
- ✓ Advocacy for procurement of pregnancy test kits
- ✓ Development of and training on the use of screening and monitoring tools
- ✓ Implementation of the intervention (integrating pregnancy screening into OPD)

Tools and resources supporting implementation:

- ➔ Standard questionnaire
- ➔ OPD pregnancy screening card
- ➔ ANC register
- ➔ Lab register
- ➔ OPD pregnancy screening summary tool

Impact: The integration of pregnancy screening in OPDs at five pilot sites from October 2019–September 2020 resulted in the screening of 1,022 women. Of those screened, 505 (49%) were found to be pregnant and linked to ANC services. Of all women at their first ANC visits across pilot sites, 12%–28% were women identified and subsequently linked to ANC services through OPD-based screening.

STANDARD QUESTIONNAIRE

PREGNANCY SCREENING QUESTIONS
(Integrating pregnancy screening in OPD)

(Adopted from CDC contraceptive guidance for Health care providers 2016 and USAID/FHI: How to reasonably be sure a client is not pregnant 2015)

Name of client: _____

Age: _____

Date: _____

Tick where applicable

1. Did your last menstrual period start within the past 7 days No () Yes ()
2. Have you abstained from sexual intercourse from your last menstrual period/delivery?
No () Yes ()
3. Are you on FP method Yes () No ()
4. Have you had a baby in the last 4 weeks? Yes () No ()
5. Have you had a miscarriage in the past 7 days Yes () No ()

If **NO** to all the questions, refer to lab for pregnancy test
If **YES** to all the questions, the client is **not pregnant** refer to other services

Pregnancy test requested: Yes ()

Name of requestor: _____ Designation: _____

Pregnancy test results: _____ Results reported by: _____

| OPD pregnancy screening summary tool | |
|---------------------------------------------------------------------------|-----|
| Indicator | OPD |
| Number of women screened for pregnancy | |
| Number of women suspected to be pregnant linked to MCH clinic | |
| Number of women suspected to be pregnant sent to lab for a pregnancy test | |
| Number of women confirmed to be pregnant from lab test | |
| Number of pregnant women linked to ANC services | |
| Number of pregnant women starting ANC at the facility | |
| Gestational age at first ANC | |
| Number of women at 0–16 weeks | |
| Number of women at 17–28 weeks | |
| Number of women at > 28 weeks | |



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IDENTIFICATION AND MANAGEMENT OF HIGH-RISK WOMEN

Rationale: The risk of acquiring HIV is significantly increased during pregnancy and in the postpartum period. Without the elimination of new infections in women, particularly in pregnant women, the elimination of MTCT will not occur. The identification of high-risk women and their subsequent linkage to tailored support is an efficient approach to address short- and long-term risks.

The high-risk classification is derived from a polymerase chain reaction (PCR) positive report, which shows women who are at increased risk of infecting their infants (Figure 2). HIV transmission can be prevented for high-risk clients identified early through the identification of barriers and initiation of case management.

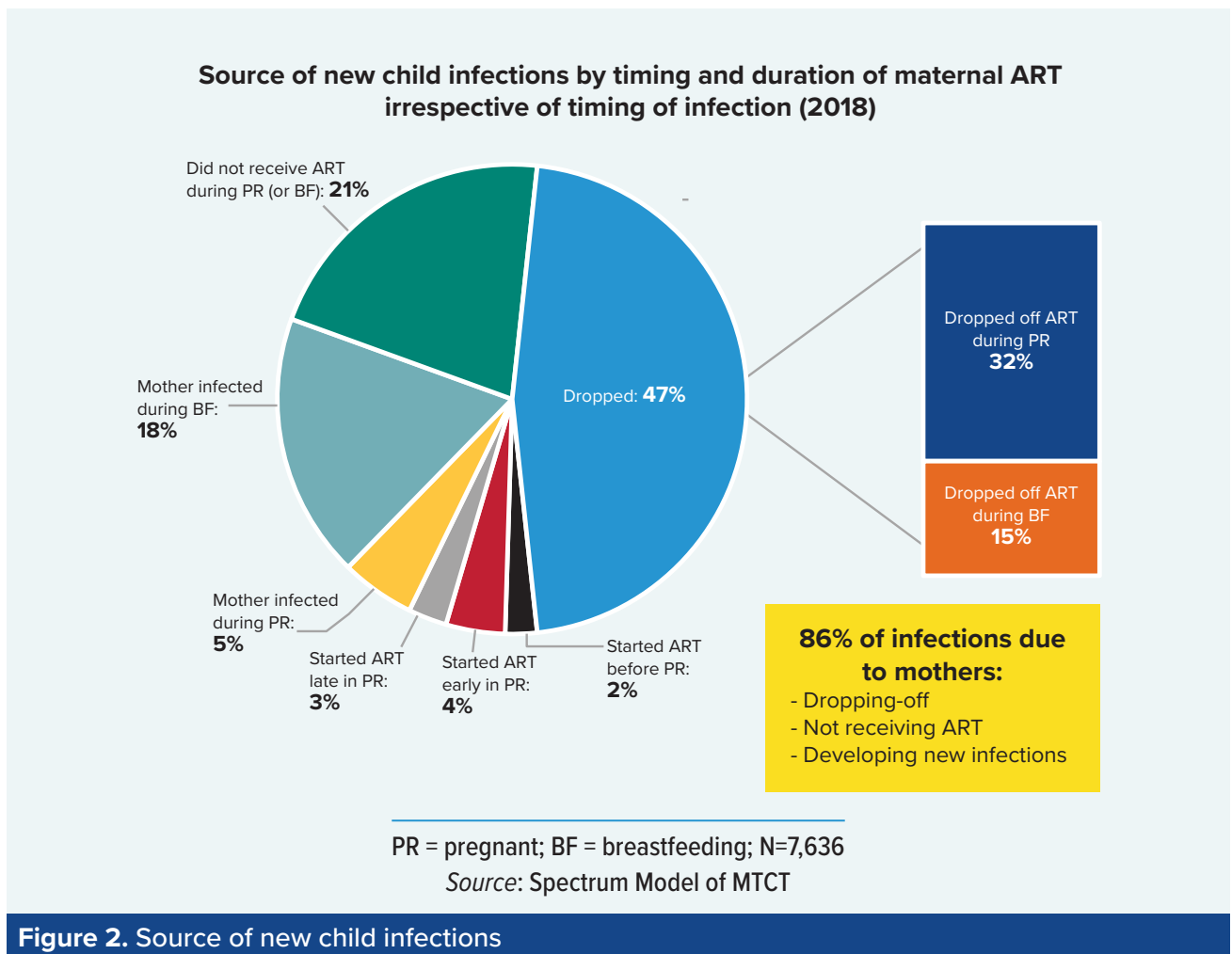


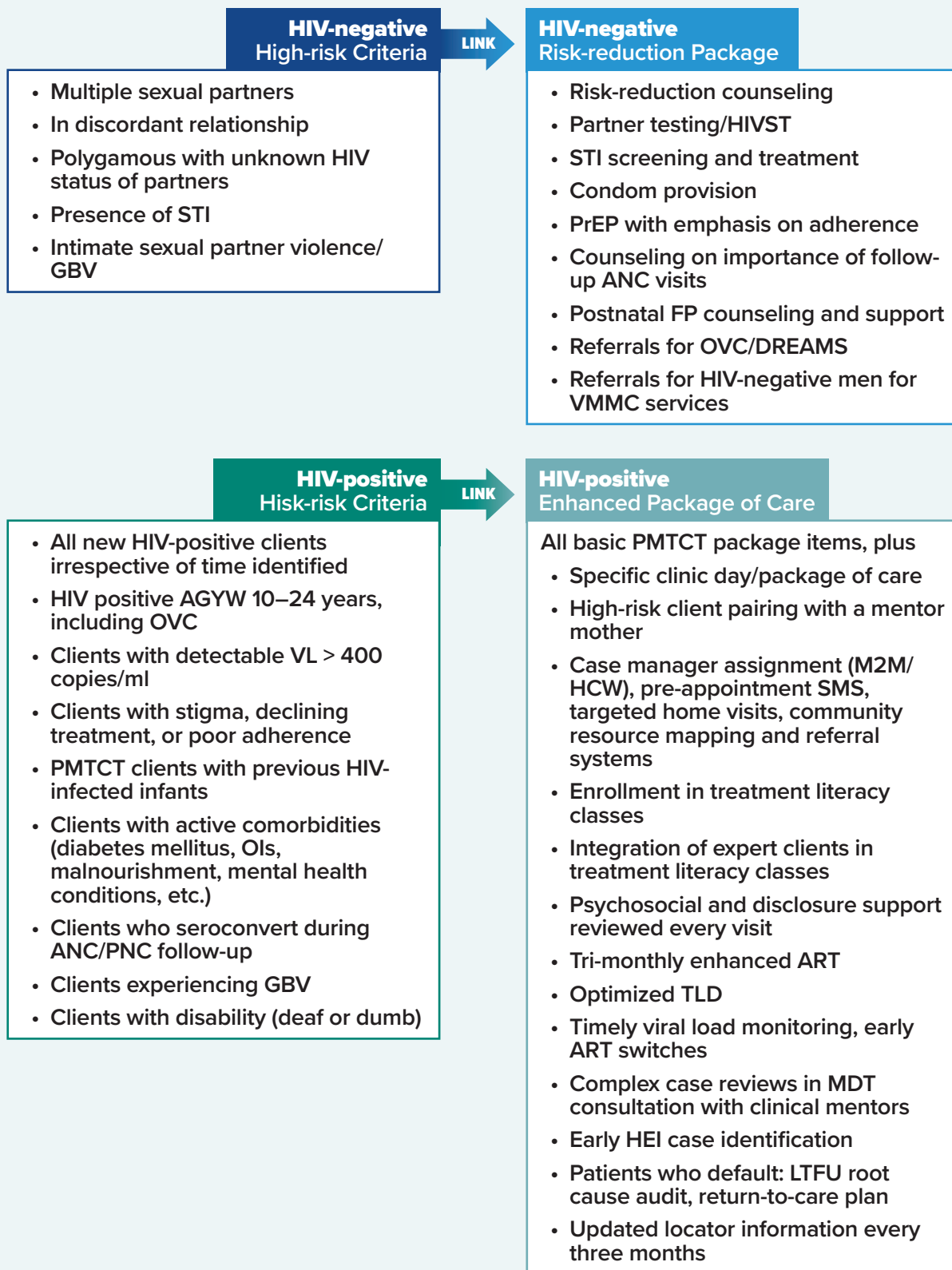
Figure 2. Source of new child infections

Objective: Systematically identify HIV-negative and HIV-positive pregnant women at increased risk of HIV acquisition or transmission in order to link them to an appropriate and tailored package of care designed to reduce risk.

Intervention: Following a PCR audit and risk assessment, HIV-positive and HIV-negative pregnant women identified as high risk are linked to a tailored package of support. For at-risk HIV-negative pregnant women, the risk-reduction package consists of a comprehensive suite of activities aimed at minimizing the risk of HIV acquisition. For at-risk HIV-positive pregnant women, the enhanced package of care entails a multifaceted approach to provide tailored support at the community and facility level and early support for HIV-exposed infants (HEI) to allow for early intervention. Figure 3 illustrates both the risk criteria and subsequent packages of care for identified at-risk women.



Photo: Eric Bond, 2019



GBV = gender-based violence; HIVST = HIV self-testing; PrEP = pre-exposure prophylaxis; FP = family planning; OVC = orphans and other vulnerable children; DREAMS = Determined, Resilient, Empowered, AIDS-Free, Mentored, and Safe; VMMC = voluntary medical male circumcision; AGYW = adolescent girls and young women; OVC = orphans and vulnerable children; VL = viral load; OI = opportunistic infection; M2M = mother to mother; HCW = health care worker; TLD = tenofovir/lamivudine/dolutegravir; MDT = multidisciplinary team; HEI = HIV early intervention; LTFU = lost to follow-up

Figure 3. Risk criteria and subsequent packages of care for HIV-negative and HIV-positive pregnant women

Approach: The approach and process is detailed in Figure 4.

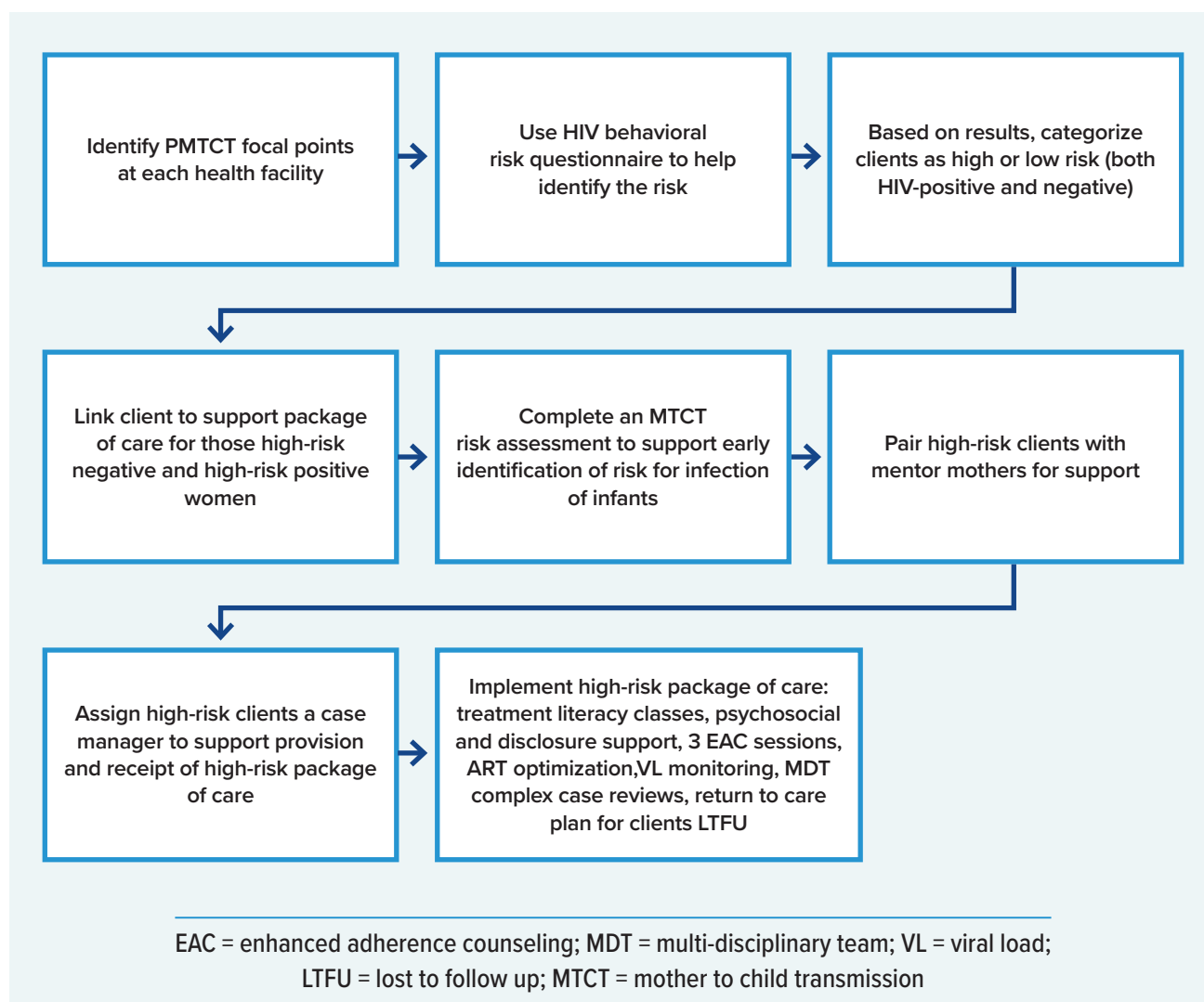


Figure 4. High-risk client management approach

Tools and resources supporting implementation:

- ➔ Risk assessment criteria
- ➔ Case management register
- ➔ PMTCT treatment literacy guide
- ➔ Treatment literacy register

Impact: From 2016–2020, uptake in ART among pregnant women in ANC increased from 98.1% to 99.8% (Figure 5). Similarly, ART initiation among HIV-positive pregnant women increased from 4,251 in 2016 to 5,112 in 2020. Viral load suppression among PMTCT clients improved from 93% in 2016 to 98% by 2020 (Figure 6). Concerning performance in early infant diagnosis (EID), HIV positivity among infants declined over time from 3.5% in 2016 to 1.4% in 2021 as illustrated in Figure 7.

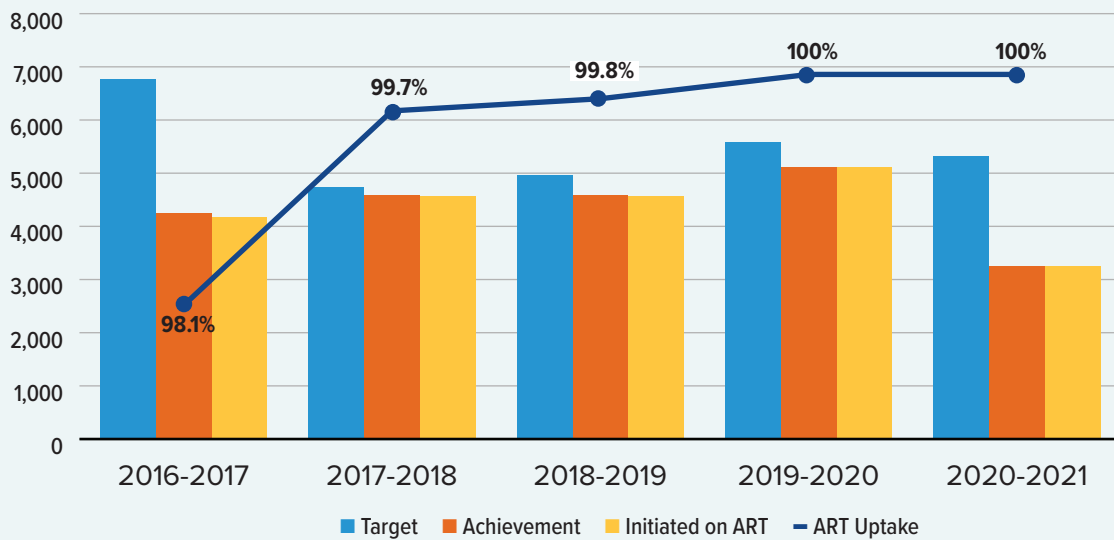


Figure 5. ART uptake among pregnant women in ANC in EGPAF-Kenya

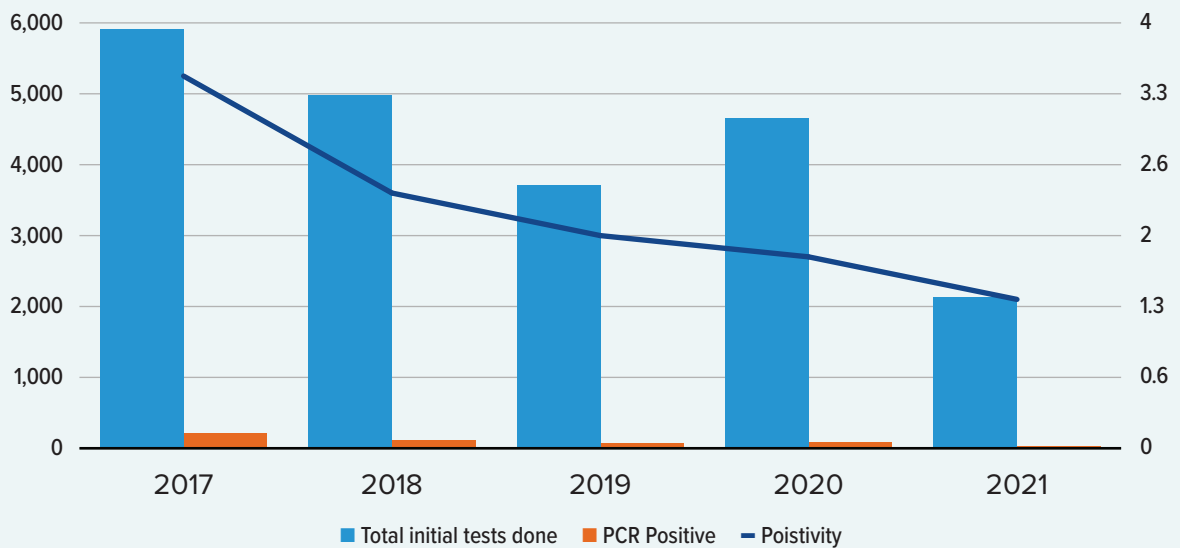


Figure 6. EID performance over time

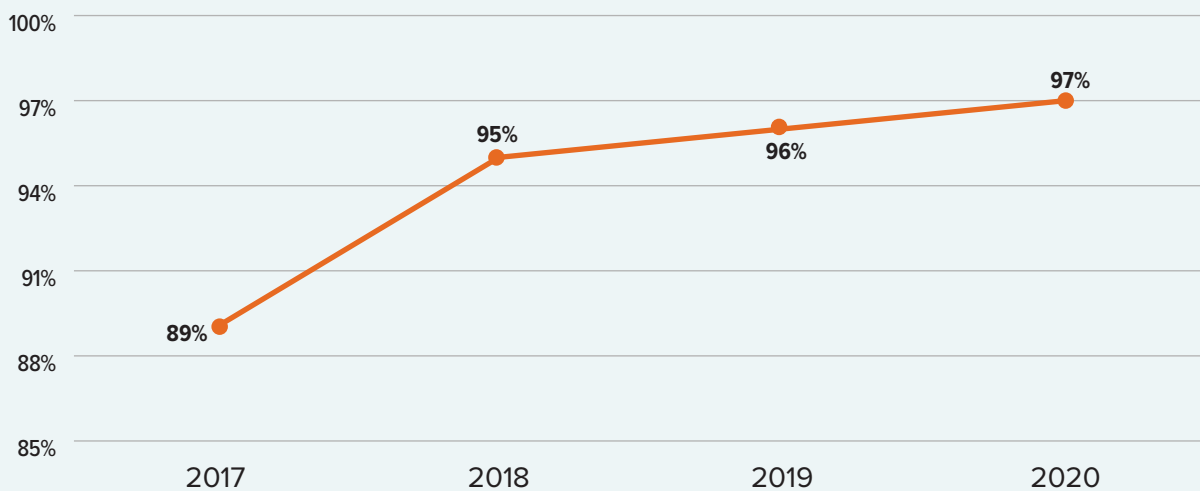


Figure 7. Viral load suppression in women in the EGPAF Kenya PMTCT program

Mentor mothers improve outcomes among high-risk pregnant women and their infants

Mentor mothers are linked to high-risk HIV positive mothers such as pregnant adolescent and young people, newly HIV-tested pregnant women, and pregnant women with a very high HIV viral load. Mentor mothers are HIV-positive women who have successfully gone through the PMTCT program and delivered HIV-negative babies and act as mentors to other women navigating the process.

Phillister Adoyo is a 24-year-old mentor mother for high-risk young women such as 21-year-old Mary Goretti Omondi—who successfully delivered a HIV-negative baby with the support of the mentor mother program. As a mentor mother, Adoyo supported Omondi in keeping up to date with her appointments to ensure she received all necessary care.

Mentors and mentees have routine one-on-one conversations at the facility and in the mentee's home, where the home environment is assessed for factors such as gender-based violence (GBV) that could hinder the success of a PMTCT intervention. Mentor mothers say that the magic is in identifying any challenges early and being able to intervene early.

RETENTION INNOVATIONS

Rationale: Retention in care allows for continued engagement of pregnant women and leads to better outcomes, better ART adherence, improved viral suppression, complete HIV exposed infant (HEI) testing, better post—natal care and reduced mortality.^{4,5}

Objective: Improve retention of pregnant women in PMTCT program at months 3, 6, 12 and 24 by identifying reasons for follow-up losses and developing individualized return-to-care plans for re-engagement.

Intervention: Retention of pregnant women in ANC care is routinely monitored. When identifying a woman who has been lost to follow-up (LTFU), a structured audit to identify the reason for nonengagement in care is conducted to inform the individual return-to-care plan. Mothers and infants are followed up as a pair for up to 24 months where various services including those tailored for the infants (nutrition, immunizations, etc.) and for mothers (viral load monitoring, family planning, cervical cancer screening, etc.) are provided.

Approach:

- ✓ Conduct routine monitoring of pregnant women engaged in care (attendance to appointments)
- ✓ Conduct LTFU root cause audit
- ✓ Construct individualized return-to-care plans
- ✓ Update locator info every 3 months

Tools and resources supporting implementation:

- ➡ Root cause audit tools
- ➡ ART cohort register

Impact: From 2016-2017, the retention among women in PMTCT increased from 89% to 97% by 2019-2020, as seen in Figure 8. As illustrated in Table 1, retention at 3, 6, 12, and 24 months increased from 2016-2020.

Table 1. Retention of women in PMTCT program from 2016-2020

| Year | 3-month retention | 6-month retention | 12-month retention | 24-month retention |
|-----------|-------------------|-------------------|--------------------|--------------------|
| 2016–2017 | — | 91% | 89% | 93% |
| 2017–2018 | 97% | 96% | 94% | 90% |
| 2018–2019 | 98% | 97% | 96% | 94% |
| 2019–2020 | 99% | 98% | 97% | 95% |

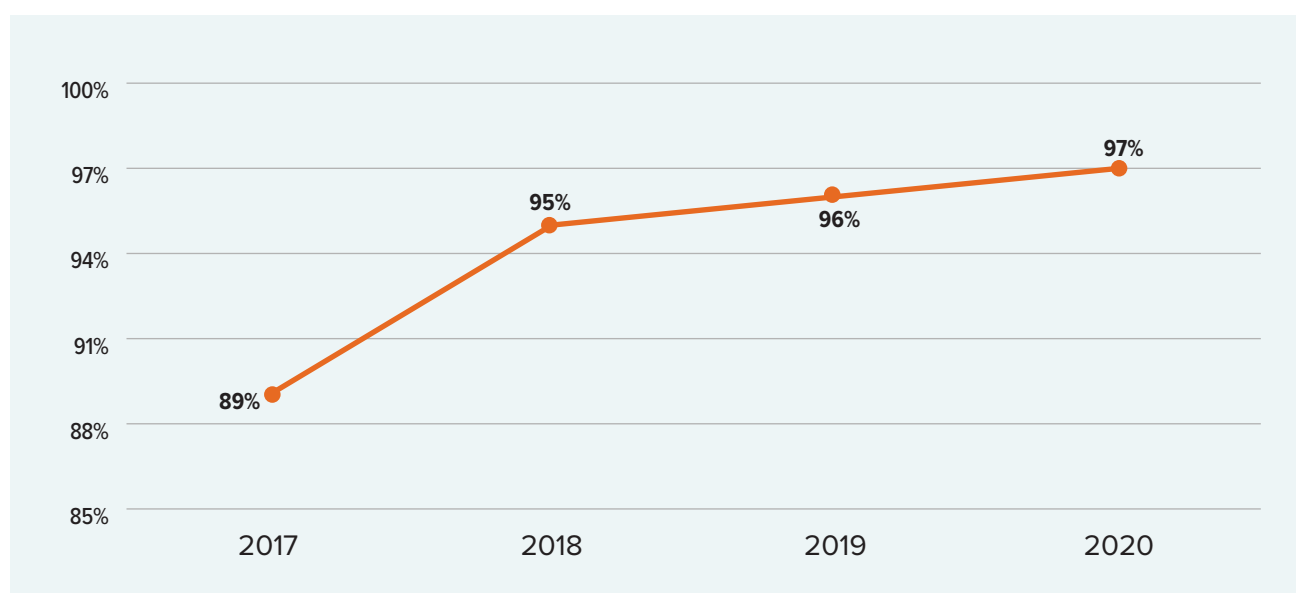


Figure 8. Retention of pregnant women in PMTCT program over time



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Lessons Learned

Overall, there have been significant improvements in PMTCT engagement, linkage to care, viral load suppression, EID performance, and retention among clients. Through the implementation of the outlined approaches, several meaningful lessons were learned:



UTILIZING A MULTIFACETED APPROACH ENHANCES THE QUALITY OF CARE and reassures clients of the importance of their wellness and their importance within the health care system.



ENGAGING WITH THE KENYA MINISTRY OF HEALTH (MOH) ENSURES BUY-IN and is critical to continued prioritization of activities focused on EMTCT.



PARTNERING WITH COMMUNITY-IMPLEMENTING PARTNERS ADDS ESSENTIAL LINKAGES to assist in reaching and reengaging clients beyond the facility.



IDENTIFYING PMTCT FOCAL POINTS AT SUPPORT FACILITIES ALLOWS FOR SUCCINCT RESPONSES and implementation of approaches.



DEVELOPING AND USING TAILORED TOOLS SUPPORTS THE QUALITY IMPLEMENTATION of approaches and the ability to monitor impact.



INDIVIDUALIZING CARE FOR EACH CLIENT DEPENDING ON THEIR NEEDS GOES A LONG WAY IN SUPPORTING THEM to overcome barriers, hence improving retention, increasing viral load suppression, and reducing rates of new HIV pediatric infections



ENGAGE WITH CAREGIVERS OF CHILDREN OF ALL AGES through various means to build skills, knowledge, and improve sustainable adherence

Conclusions

The implementation of a suite of approaches aiming to address recognized gaps in the PMTCT cascade has been shown to be critical in ensuring early and timely engagement in care and initiation of ART, reduction of the risk of HIV transmission, and retention and engagement of pregnant women and infants in care. Investment in PMTCT across the cascade of care, along with continued emphasis on quality improvement approaches, remains urgently important to ensuring quality provision and services.

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