Long-term Outcomes After Loss to Follow-Up From PMTCT Services for Women and Children in Kenya

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BACKGROUND

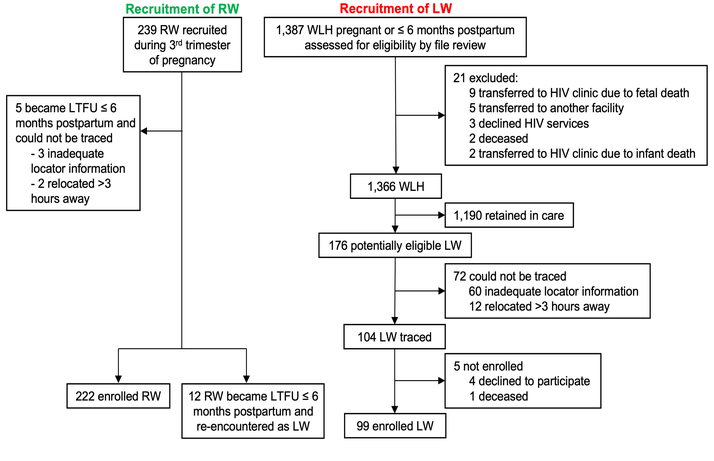
- Many prevention of mother-to-child HIV transmission (PMTCT) studies do not assess outcomes after 18 months postpartum and exclude those lost to follow-up (LTFU).[1,2]
- **Objective:** We used community tracing to determine early and long-term outcomes of women and children retained in care and LTFU from PMTCT services in Kenya.

METHODS

- **Study design:** Prospective cohort
- **Eligibility:** Women living with HIV (WLH) ≥18 years of age enrolled in antenatal clinic (ANC) at 5 public facilities in western Kenya (Busia District Hospital, Kitale District Hospital, Huruma Sub-District Hospital, Moi Teaching and Referral Hospital, Uasin Gishu District Hospital).
- **Recruitment and follow-up:** WLH retained in care (RW) were recruited during the 3rd trimester of pregnancy and followed with their children through 6 months postpartum. WLH who became LTFU (LW, last visit >90 days) after ANC enrollment and before 6 months postpartum were recruited through community tracing. Re-contact at 3 years postpartum was attempted for all participants using community tracing for WLH LTFU (>60 days since last missed scheduled visit) and transferred out.
- **Analysis:** We used generalized linear regression to estimate factors associated with loss to follow-up by 6 months postpartum, adjusting for characteristics at ANC enrollment (age, education, facility, travel time to facility, gravidity, income, and new vs. known HIV positive).

RESULTS

Figure 1. Recruitment of participants.



Outcomes for those LTFU from PMTCT services were worse than for those retained in care. Most LTFU clients re-engaged in care by 3 years postpartum.

- 333 WLH were recruited from March 2018 to January 2019 (Fig 1).
- At 6 months postpartum, 222 WLH were RW and 111 LW (79 disengaged from care, 32 silently transferred) (Table 1).
- 6-month HIV-free survival was lower for children of LW vs. RW (Table 2).
- At 3 years, 230 WLH were retained at the study facility, 30 documented transfer, 70 LTFU, 3 deceased (Fig 2).
- 3-year child HIV-free survival was 81.9%, 3.7% were living with HIV, 3.7% deceased, and 10.8% had unknown vital status (Table 3).

Table 1. Characteristics of enrolled women, by retention status at 6 months postpartum.

Characteristics	Total N=333 n (%)	RW N=222 n (%)	LW N=111 n (%)
Age at ANC enrollment, med. years (IQR)	31 (24-34)	32 (26-35)	28 (23-33)
Primigravida	59 (17.7)	31 (14.0)	28 (25.2)
Newly HIV positive at ANC enrollment	120 (36.0)	59 (26.6)	61 (55.0)
Years on ART at ANC enrollment, med. (IQR)	1.7 (0-5.5)	2.4 (0-6.0)	0 (0-3.7)
Viral load <1000 copies/mL[a]	270 (81.3)	205 (92.3)	65 (59.1)
Miscarriage or spontaneous abortion[b]	13 (3.9)	1 (0.5)	12 (11.0)

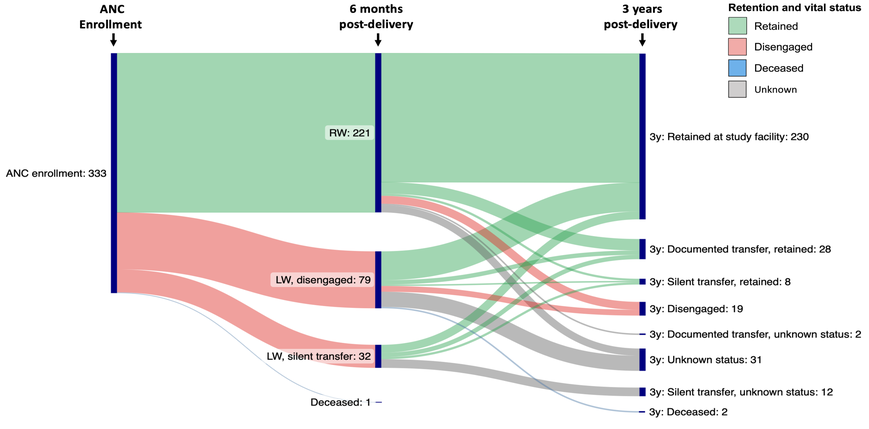
[a]Among 222 RW and 110 LW at study enrollment. [b]Among 222 RW and 109 LW.

Table 2. Characteristics of liveborn infants, by maternal retention status at 6 months postpartum.

Characteristics of liveborn infants by maternal retention status	Total N=325 n (%)	Infants of RW N=226 n (%)	Infants of LW N=99 n (%)
Vital status at 6 months			
Alive	318 (97.9)	224 (99.1)	94 (95.0)
Deceased	7 (2.2)	2 (0.9)	5 (5.0)
HIV positive[a]	8 (2.5)	1 (0.5)	7 (7.5)
HIV-free survival	310 (95.4)	223 (98.7)	87 (87.9)

[a]Among infants alive through 6 months

Figure 2. Retention status among women after enrollment in ANC, by 6 months and 3 years postpartum.



Reasons for not returning to the study facility

The most frequently self-reported reasons for not returning to the study facility were transport cost/difficulty (43%), poor service quality (23%), and risk of HIV stigma or status disclosure (20%).

Associations with loss to follow-up

Being newly diagnosed with HIV at ANC enrollment was the only factor associated with loss to follow-up in the adjusted analysis (aRR 1.21, 95% CI 1.11-1.31).

Table 3. Characteristics of children at 3 years after birth, by maternal retention status at 6 months.

Characteristics	Total N=325 n (%)	Children of RW N=226 n (%)	Children of LW N=99 n (%)	P value
Months postpartum at follow-up, median (IQR)	34 (33-36)	34 (33-36)	35 (34-37)	<0.01
HIV-free survival				<0.01
Alive and HIV negative	266 (81.8)	208 (92.0)	58 (58.6)	
Alive and HIV positive	12 (3.7)	1 (0.4)	11 (11.1)	
Deceased	12 (3.7)	5 (2.2)	7 (7.1)	
Unknown vital status	35 (10.8)	12 (5.3)	24 (24.2)	

CONCLUSIONS

- Maternal viral suppression and child HIV free survival were worse among those LTFU from PMTCT services compared those retained in care, highlighting the need to re-engage and support those who become LTFU.
- Most LW were re-engaged in care by 3 years, suggesting PMTCT services and data systems need to better accommodate the barriers and transitions women experience during pregnancy and postpartum, especially for those newly diagnosed with HIV during pregnancy.

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