

Maternal HIV Viral Load Threshold for Guiding Extended Infant Prophylaxis Initiation

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BACKGROUND

- ❖ WHO recommends infant postnatal prophylaxis (PNP) for breastfed HIV-exposed uninfected (HEU) children when the maternal viral load (VL) is ≥ 1000 cp/mL.
- ❖ PNP may then be stopped once maternal VL measures < 1000 cp/mL.
- ❖ In most countries, the very long VL turnaround times (several months) leave many children highly exposed without PNP (i.e. those mothers with $VL \geq 1000$ cp/mL).
- ❖ The 1000 cp/mL threshold is based on the risk of sexual transmission but may not be appropriate for PMTCT purposes.

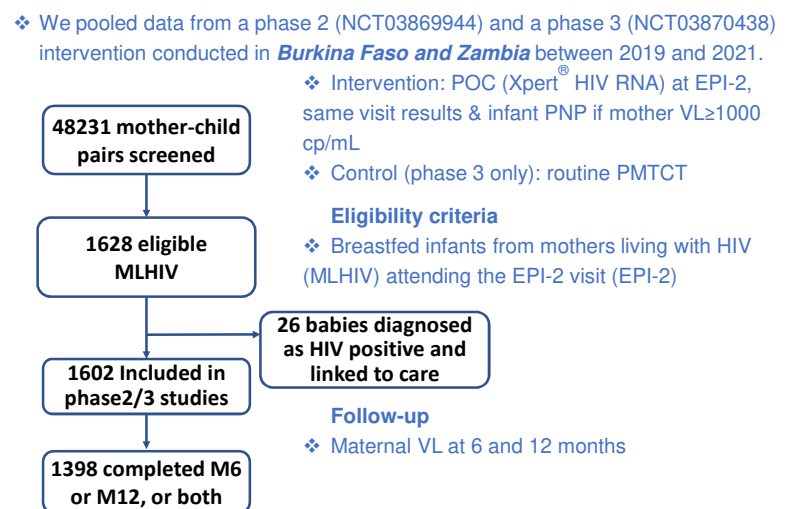
HYPOTHESES

- ❖ A single VL at 2nd immunization visit (EPI-2, 6-8 weeks) can identify children at high risk of transmission (i.e. maternal $VL \geq 1000$) during breastfeeding.
- ❖ The usual threshold of VL positivity (i.e. ~ 40 cp/mL) could be a safer and pragmatic alternative for guiding PNP initiation in resource-constrained contexts.

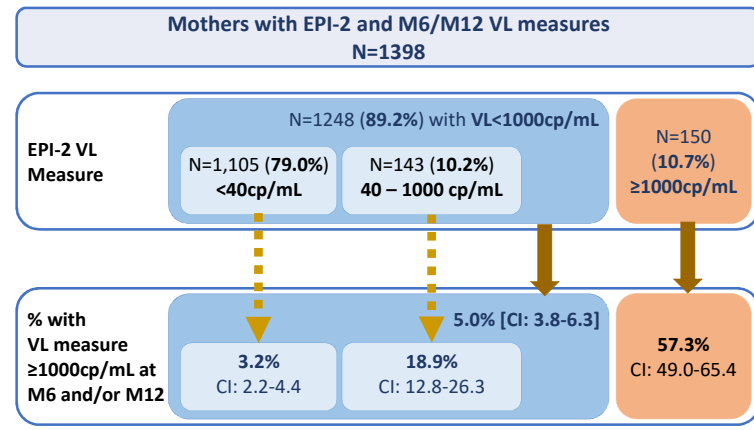
OBJECTIVES

- ❖ To assess the risk of heightened HIV exposure during breastfeeding for children not eligible for PNP at EPI-2 (mother VL < 1000 cp/mL).
- ❖ To challenge the VL threshold of 1000 cp/mL for PNP initiation.

METHODS



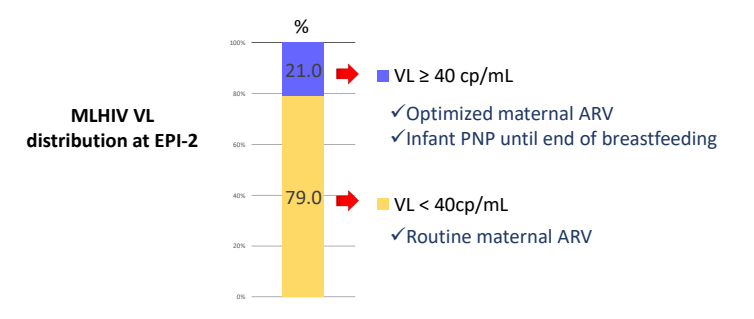
RESULT#1 Mother VL dynamics from EPI-2 up to M12



CONCLUSIONS AND KEY MESSAGES

- ❖ In resource-constrained settings, regardless of HIV prevalence and health system organization, a single HIV VL at early postnatal period can accurately identify infants requiring PNP for the breastfeeding period.
- ❖ For children born to mothers with $VL \geq 40$ and < 1000 cp/mL at EPI-2, and presently not eligible for PNP, the risk of high HIV exposure during breastfeeding remains high (6-fold that of children born to mothers with $VL < 40$).
- ❖ An alternative lower threshold (40 cp/mL) for PNP initiation at EPI-2 would greatly reduce this risk.

Proposed simplified PMTCT in resource-constrained contexts



RESULT#2: Risk of having a HIV VL ≥ 1000 cp/mL at M6 or M12 according to EPI-2 VL

Maternal VL at EPI-2 (cp/mL)	N	Crude RR [95%CI]	N	aRR* [95%CI]	p-value
< 40	1398	Ref.	1398	Ref.	< 0.001
[40 – 1000[6.0 [3.7–9.5]		6.0 [3.7–9.6]	
≥ 1000		18.1 [12.7–25.8]		18.0 [12.6–25.7]	< 0.001

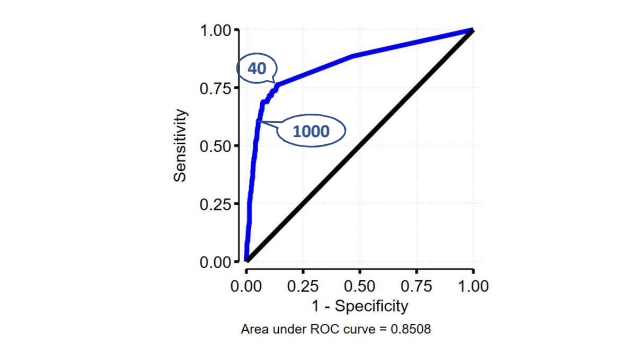
*aRR adjusted for ARV regimen at baseline (containing DTG or not); study arm (intervention or control); mother's age (15-19, 20-24, 25 and over). Other parameters not retained for the final model: country of origin, time of HIV diagnosis

Analysis by country

Burkina Faso (cp/mL)	N	aRR* [95%CI]	Zambia (cp/mL)	N	aRR [95%CI]
< 40	241	Ref.	< 40	1157	Ref.
[40 – 1000[3.0 [1.3 – 6.6]	[40 – 1000[7.3 [4.1 – 13.1]
≥ 1000		6.5 [3.4 – 12.3]	≥ 1000		25.0 [16.2 – 38.5]

*aRR as above except for Burkina not adjusted for mother's age

RESULT#3: Performance of EPI-2 mother VL to predict future high HIV exposure ($VL \geq 1000$ cp/mL)



VL threshold	Sensitivity	Specificity
40 copies/mL	76%	86%
1000 copies/mL	58%	95%

