Mother-to-child transmission of HIV in Kenya: a multi-year national evaluation

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PMTCT-HEI Survey 2016

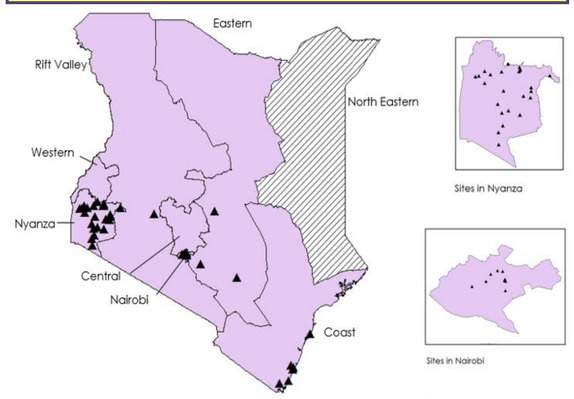
Background

With the efforts toward elimination of mother to child transmission (EMTCT), the number of infants with HIV has declined sharply. However, EMTCT programs need to be monitored to identify gaps and design interventions to further reduce MTCT. This study determined MTCT at 6 weeks, 9 and 18 months, and cofactors for MTCT in a multi-year, nationwide registry-based survey in Kenya.

Methods

- We conducted a nationally representative chart review of HIV Exposed Infants (HEI) enrolled in 62 randomly selected facilities in Kenya.
- All HEI registry and HEI card data from 2011-2013 were scanned and digitized using Captricity©.
- MTCT was defined as infant positive DNA PCR test at 6 weeks, 9 months or 18 months.
- Age-specific estimates for HEI indicators included data points within ±2 weeks.
- Cohort analysis included infants with PCR result at <3 months of age followed to last known visit. Cox regression determined correlates of MTCT.
- Estimates were weighted to account for survey design and clinic level clustering.

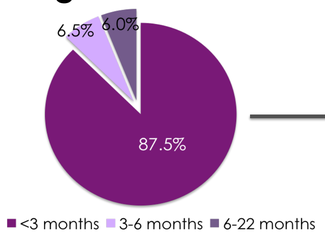
Distribution of survey sites across Kenya[1]



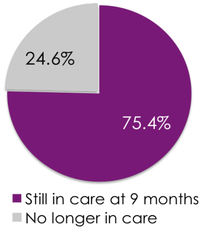
[1] Regions include Eastern, Coast, Rift Valley, Nairobi and Nyanza. Data was not collected in Central, Western and North Eastern.

Results

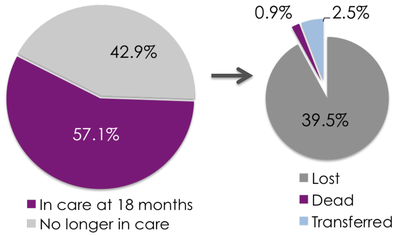
Age at 1st PCR



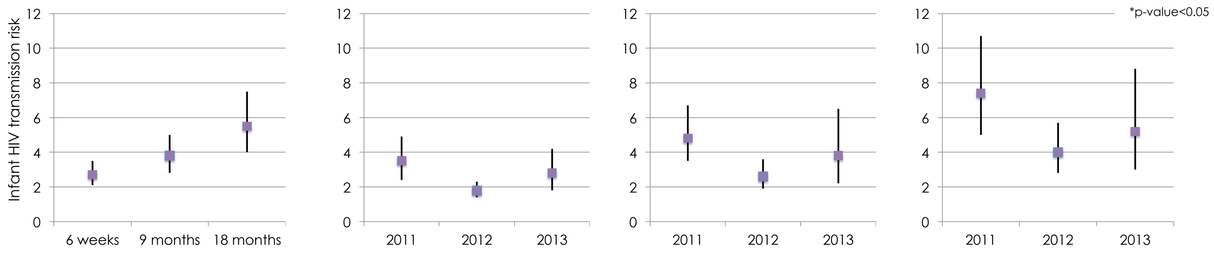
HEI in care at 9 months



HEI in care at 18 months



Infant HIV transmission combined and by year among HEI with known PCR result at <3 months (n=6034)



Combined HIV transmission, 2011-2013 | HIV positive at 6 weeks* | HIV positive at 9 months | HIV positive at 18 months*

Enrollment characteristics and correlates of MTCT among HEI with known PCR test result <3 months of age

	n	Weighted % or mean (95% CI)	Univariate HR (95% CI)	Univariate P-value	Multivariable[1] aHR (95% CI)	Multivariable[1] P-value
Age at enrollment into HEI care, weeks	6034	6.6 (5.7-7.4)	1.02 (1.00-1.04)	0.03	0.99 (0.96-1.02)	0.55
Complete EMTCT						
Maternal and infant ARVs	4383	73.0 (66.0-79.0)	Reference		Reference	
Maternal ARVs only	654	10.6 (7.9-14.2)	2.35 (1.41-3.92)	0.001	2.27 (0.83-6.25)	0.11
Infant ARV prophylaxis only	530	8.7 (6.4-11.7)	1.99 (1.23-3.23)	0.006	1.61 (0.67-3.87)	0.28
None	467	7.7 (5.8-10.1)	7.41 (4.62-11.89)	<0.001	5.65 (2.21-14.4)	0.001
Maternal ARVs						
HAART	4137	68.6 (58.8-77.0)	Reference			
Option A (AZT+NVP+3TC)	805	13.5 (8.1-21.6)	2.48 (1.68-3.66)	<0.001	-	
Single-dose NVP only	95	1.5 (1.1-2.2)	2.58 (1.02-6.54)	0.045	-	
None	997	16.4 (12.8-20.7)	4.74 (3.00-7.47)	<0.001	-	
Infant ARV prophylaxis						
NVP for 6 weeks (maternal ART/EBF)	3196	53.3 (40.5-65.7)	Reference			
NVP during breastfeeding	1162	19.0 (11.4-29.9)	0.75 (0.36-1.57)	0.44	-	
NVP+AZ+3TC for 7 days	232	4.1 (2.1-8.1)	0.84 (0.44-1.60)	0.60	-	
Single-dose NVP only	323	5.3 (3.3-8.4)	3.55 (2.36-5.33)	<0.001	-	
None	1121	18.3 (14.2-23.3)	4.30 (2.88-6.41)	<0.001	-	

ARVs, antiretroviral drugs; CI, confidence interval; HAART, highly active antiretroviral therapy; HR, Hazard ratio; aHR, adjusted hazard ratio
[1]Multivariable model adjusted for age at enrollment in HEI care, birth weight, complete EMTCT, and facility size (small, medium, large).

Figure 3. Field teams digitizing paper-based registry data

Conclusions

- Despite decreases from 2011-2013, MTCT remains high underscoring the benefit of early HEI enrollment and need for rapid expansion of ART to all HIV-infected women irrespective of immune status.
- High loss to follow-up at 18 months underscores the need for better strategies to improve retention and the implementation of interventions to track and retain HEI in care.

Consent was received for all photographs

Acknowledgements

Collaborative HIV Impact on MCH Evaluation (CHIME) Study Team

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