Post-partum mother-infant retention in PMTCT

CCABA Meeting
9 May, 2011

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Objectives

• Selected findings from review on postpartum LTFU of mothers-baby pairs
• 3 LTFU lessons from treatment program data
• LTFU: What it means for PMTCT M&E
• My three wishes
PMTCT Care Spectrum from Pregnancy to 18 months Post Partum

Antepartum:
- PICT in ANC
- CD4 testing
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- AZT at 28 weeks plus sd-NVP

Intrapartum:
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- FP Counseling
- AZT/NVP infant dose

1-8 weeks post Partum:
- Maternal post partum follow-up
- Enrollment into CTC
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- PCR testing at 4-6 weeks
- Growth Monitoring
- CTX initiation

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- Repeat maternal CD4 (6 mos post partum)
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- CTX continuation
- IF counseling
- HIV infected infants: ART initiation/CD4 testing

6-9 mos post partum:
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- Infant Feeding support

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Losing children: The HIV Care Continuum

PMTCT Programmes & ANC

All pregnant mothers

~ ½ have no PMTCT access

Attrition of mothers from PMTCT programs

HIV positive mothers

Paediatric HIV Care

HIV exposed infants

<1 in 10 HIV-exposed infants tested in first 2mo

Attrition of children during pre-ART process

Initiate ART

Most attrition on ART in the first year

Transition into adolescent & adult life-long treatment and care

Adolescent/Adult Care

Substantial attrition with transitioning to adult care
Parameters for review of postpartum LTFU of mothers-baby pairs

• Literature on the infant retention in PMTCT and early infant diagnosis programs was reviewed via PubMed from 1990 to the present.

• Abstracts were narrowed by relevance, focusing on manuscripts describing retention rates and loss to follow-up of mother-infant pairs.
Zambezia, Mozambique

- 1 of 2 HIV+ women enrolled in ART
- 1 of 4 brought child in for EID
- Predictors of retention:
  - TBA

(Cook, Ciampa et al. 2011)
Northern Uganda

- 1 of 2 seropositive enrolled in PMTCT
- Half of those were LTFU before infant status known
- Predictors of retention:
  - TBA

Ahoua, Ayikoru et al. 2010
Rural Malawi

- 9 of 10 mothers accepted testing
- Cumulative loss to follow up:
  - 55% at 36-week ANC visit,
  - 68% by delivery
  - 81% by the 6-month postnatal visit

(Manzi, Zachariah et al. 2005)
65% of infants dropped out of EID program before 18 months

43% dropped out within 2 months of enrollment.

Most at risk for LTFU:
- Young mothers (P<0.001)
- Mothers themselves LTFU (p< 0.033)

(Hassan, Sakwa et al. 2011)
Urban South Africa

- Transmission rate about 9% among women known to be HIV+ (15% in this population)
- More than one-third of infants never return for follow-up
- More than 70% are lost to follow-up by 4 months of age

(Sherman, Jones et al. 2004)
Urban Malawi

- The HIV status unknown for 36.9% of infants born to HIV-infected mothers.
- Parental risk of loss to follow-up:
  - Less education (P < 0.001)
  - Farming occupation
  - Teachers and students

(Ioannidis, Taha et al. 1999)
Multi-country data: The PEARL* Study

* The PMTCT Effectiveness in Africa: Research and Linkages to Care (PEARL) Study
The PEARL Study

• Introduction:
  – “What many believed at the outset would be a relatively simple matter of incorporating antenatal HIV diagnosis and maternal-infant antiretroviral prophylaxis into routine pregnancy and newborn care has in practice been frustratingly difficult to bring to scale.”

-Authors
Stringer, E. M. et al. JAMA 2010;304:293-302
The PEARL Study

- Overall rate of prophylactic coverage of 51% for HIV infected women and exposed infants
- Failed coverage significantly associated with:
  - Maternal age <20 yrs vs >30yrs (AOR: 1.44)
  - Maternal age 20-25 yrs vs >30yrs (AOR: 1.28)
  - 1 or fewer ANC visits vs 6+ (AOR: 2.91)
  - 2 or 3 ANC visits vs 6+ (AOR: 1.93)
  - 4 or 5 ANC visits vs 6+ (AOR: 1.56)
  - Vaginal delivery vs C/S (AOR, 1.22)
  - Infant birth weight <2500 g (AOR, 1.34) vs >3500g
The PEARL Study

- Demonstrated variable, substantial and diverse programmatic dysfunction in 43 facilities in 4 countries
- Called attention to the lack of program effectiveness data relating to the PMTCT cascade
  - Emphasis on efficacy data and “simple process tallies”
  - Exceptions: Rollins N et al (KZN); Plipat Y et al (Thailand)
  - True coverage data also lacking
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Multi-country data (2): Clinton Heath Access Initiative

Rates of attrition in infants from PCR testing to Initiating ART

70% of total loss occurs between testing and enrolment at ART centre

(Unpublished CHAI data, 2009)
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Lession #1: Rural challenges

PMTCT programs in rural areas are arguably more challenging than those managed in a clinical trial context or “model program” setting, but little comparative data exists to show this.
• Children starting ART in the rural group were older; median 6.7 yrs vs 5.6 years in urban group: (p = 0.0001)

• Rural group with lowest median baseline CD4 cell percentage (10.0%) compared with 12.8% in the urban (p = 0.0003)

• Rural group had highest proportion with severe immunodeficiency (p = 0.043)

(Fatti, Bock et al. 2010)
In rural clinics, the proportion of children defaulting increased with program duration. (Sutcliffe, Bolton-Moore et al. 2010)
After 4 and 3 years on ART respectively, 72.0% of adults and 81.5% of children remained in care.

Mortality at 6 months fell from 12.7% to 6.6%.

BUT...increasing loss to follow-up, reaching 4.7% at 6 months toward end of 2 ½ year study period

(Boulle, Bock et al. 2008)
LTFU increase with time (cont.)

- 5000+ adult patients from 15 treatment programs in Africa, Asia and South America, looking at risk factors for LTFU during first 6 months of treatment.
- LTFU (HR: 7.62) was higher in 2003-2004 than in 2000 or earlier.

(Brinkhof, Dabis et al. 2008)
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Lesson #3: Coverage and health-seeking behavior go together

<table>
<thead>
<tr>
<th>Typology A</th>
<th>Typology B</th>
<th>Typology C</th>
<th>Typology D</th>
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<tbody>
<tr>
<td>&gt; 80% ARV coverage</td>
<td>60-79% ARV coverage</td>
<td>30-59% ARV coverage</td>
<td>&lt;30% ARV coverage</td>
</tr>
<tr>
<td>Botswana – 99%</td>
<td>Kenya – 73%</td>
<td>Malawi – 58%</td>
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<tr>
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Coverage and health-seeking behavior

Scenario 1

Scenario 2

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LTFU: What it means for PMTCT M&E

- Effectiveness overestimated when we do not account for LTFU
  - Example: Mother-to-child HIV cumulative transmission rate up from 8.3% to 15.5% when HIV-related deaths were considered. (Ahoua, Ayikoru et al. 2010)

- Diagram of antenatal care and HIV testing process:
  - All pregnant mothers at first ANC
  - Pregnant mothers accepting testing
  - Pregnant mothers testing positive (25%)
  - 36 week ANC
  - Delivery
  - 6 months postpartum

Sherman, Jones et al. 2004
Manzi, Zachariah et al. 2005
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My three wishes

“If you had a genie, what would you ask be available to a woman and young child at the community level to ensure her and her child's health and wellbeing”
Next up: Demand-side barriers to retention and related opportunities