Preventing Mother-to-Child Transmission of HIV in Nigeria

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Conflict of Interest Disclosure

No Conflict of Interest to Declare
UNIVERSITY OF JOS, NIGERIA

JOS UNIVERSITY TEACHING HOSPITAL (JUTH), LAMINGO-JOS

ADULT ARV CLINIC, JUTH, JOS

PMTCT/PEDIATRIC ARV CLINIC, JUTH, JOS
Innocence is no barrier to its devastation
MTCT OF HIV CAN OCCUR

- In-utero [5-10%]
- During labour/delivery [10-20%]
- Through breastfeeding [5-20%]
Factors affecting mother-to-child transmission of HIV-1

**VIRAL**
- Viral load
- Viral genotype and phenotype
- Viral resistance

**MATERNAL**
- Maternal immunological status
- Maternal nutritional status
- Maternal clinical status
- Behavioural factors (Smoking, Alcohol, Injection drug use)
- HIV infection acquired during pregnancy or breastfeeding
- **Genital tract infections** (STIs, Chorioamnionitis)

**OBSTETRICAL**
- Prolonged rupture of membranes (> 4 hours)
- Mode of delivery
- Intrapartum haemorrhage
- Obstetrical procedures
- Invasive fetal monitoring

**FETAL**
- Prematurity
- Genetic susceptibility
- Multiple pregnancy
- Placental malaria

**INFANT**
- Breastfeeding
- Gastrointestinal tract factors
- Immature immune system
Relationship between maternal viral load level and mother to child transmission


1. Primary prevention of HIV among women of childbearing age.
2. Prevention of unintended pregnancies among women living with HIV.
3. Prevention of HIV transmission from a woman living with HIV to her infant.
4. Provision of appropriate treatment, care and support to women living with HIV, their children and families.
### At the peak of the AIDS Epidemic

**Global summary of the HIV/AIDS epidemic December 2002**

<table>
<thead>
<tr>
<th>People living with HIV/AIDS</th>
<th>Total</th>
<th>42 million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults</td>
<td>38.6 million</td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>19.2 million</td>
<td></td>
</tr>
<tr>
<td>Children under 15 years</td>
<td>3.2 million</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>New HIV Infections in 2002</th>
<th>Total</th>
<th>5 million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults</td>
<td>4.2 million</td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>2 million</td>
<td></td>
</tr>
<tr>
<td>Children under 15 years</td>
<td>800 000</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AIDS deaths in 2002</th>
<th>Total</th>
<th>3.1 million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults</td>
<td>2.5 million</td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>1.2 million</td>
<td></td>
</tr>
<tr>
<td>Children under 15 years</td>
<td>610 000</td>
<td></td>
</tr>
</tbody>
</table>

UNAIDS / WHO December 2002
New HIV infections among adults (aged 15 years and older), global, 2000–2015

New HIV infections among children (aged 0–14 years), global, 2000–2015

Source: UNAIDS 2016 estimates.
AIDS is not over, but it can be

Since 2000,

• 1.6 million new HIV infections among children averted,

• 70% reduction in AIDS-related deaths among children (0-4) globally.

• New HIV infections in children (0-14) declined from 800,000 (2002) to 150,000 (2015) annually

• Among hard hit countries, Thailand is first to be validated by WHO to eliminate MTCT

Source: UNAIDS 2016 estimates
Tremendous Achievements by Global Plan; 2009 to 2015

Prevention of mother-to-child transmission progress against Global Plan targets in selected priority countries

GLOBAL PLAN 2015 TARGETS

90% of pregnant women with HIV receiving ART

90% reduction in new HIV infections among children


South Africa: 95% (34%)
Uganda: 95% (86%)
Zambia: 87% (69%)
Cameroon: 55% (49%)
Angola: 40% (24%)
Nigeria: 36% (21%)
Distribution of new HIV infections among children (aged 0–14 years), global, 2015

Source: UNAIDS 2016 estimates
Distribution of new HIV infections by country, western and central Africa, 2015

Source: UNAIDS 2016 estimates.
‘START FREE’ ; Every child deserves an HIV-free beginning.

Targets:

• Reduce the number of newly infected children to less than
  • 40,000 by 2018 and
  • 20,000 by 2020

• Reach and sustain 95% of pregnant women living with HIV with life-long HIV treatment by 2018
• 41 000 new HIV infections among children.
• ARV coverage for pregnant women living with HIV was 30%.
• The MTCT rate was 13% at six weeks but rose to 23% at the end of breastfeeding, indicating challenges in retention of women throughout the breastfeeding period.
• Only 9% of infants exposed to HIV received early infant diagnosis (EID)
PMTCT in Nigeria: What are the issues?

- Low PMTCT coverage
- Low male partner involvement
- Poor adherence to antiretroviral therapy
- Birth outside health facilities
- Poor retention in care during breastfeeding
- Challenge with Partner disclosure of HIV status
- HIV Sero-discordance
Why has ARV Coverage remained low?

- Poor data capture [PMTCT MIS challenges]
- Exclusion of Private (for-profit) Sector
- Human resource for health challenges
- Weak Infrastructure
- Poor buy-in by States and Local Governments
- Weak coordination of donor support
- Policy issues
‘Test and Start’ : ALL HIV positive persons should commence life-long ART irrespective of CD4 count and clinical stage of the disease

• Including pregnant women at any gestational age and breastfeeding women

Integrated National Guidelines for HIV Prevention Treatment and Care  FMOH Nigeria 2016
### Summary of Changes in Recommendations: What to Start in Adults

<table>
<thead>
<tr>
<th>Target Population</th>
<th>2010 ART Guidelines</th>
<th>2013 ART Guidelines</th>
<th>Strength &amp; Quality of Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV+ ARV-NAIVE Adults</td>
<td>AZT or TDF + 3TC (or FTC) + EFV or NVP</td>
<td>TDF + 3TC (or FTC) + EFV (as fixed-dose combination)</td>
<td>Strong, moderate-quality evidence</td>
</tr>
<tr>
<td>HIV+ ARV-NAIVE Pregnant Women</td>
<td>AZT + 3TC + NVP + EFV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIV/TB Co-infection</td>
<td>AZT or TDF + 3TC (or FTC) + EFV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIV/HBV Co-infection</td>
<td>TDF + 3TC (or FTC) + EFV</td>
<td></td>
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</tr>
</tbody>
</table>

**WHO 2013**
### Recommended first-line ART regimen in pregnant and breast feeding women

<table>
<thead>
<tr>
<th>First-line ART</th>
<th>Preferred first line regimens</th>
<th>Alternative first-line regimens</th>
</tr>
</thead>
</table>
| Pregnant or breastfeeding women | TDF + 3TC + EFV  
TDF + FTC + EFV | AZT + 3TC + EFV  
AZT + 3TC + NVP  
TDF + 3TC + NVP  
TDF + FTC + NVP |
Outline of PMTCT Interventions in Clinical Settings


Life-long ART for all HIV + Pregnant and Breastfeeding Women

Check VL at 32 – 36 weeks. If > 1000 copies/ml, do C-Section otherwise, Vaginal Delivery

Exclusive Breastfeeding for 6 months with mother on life-long ART
Outline of PMTCT Interventions in Clinical Settings

- ARV Prophylaxis for HIV-exposed Infants
- Early Infant Diagnosis at 6-8 Weeks of Age
- Co-trim Prophylaxis for all HIV-exposed Infants (HEIs) from Age 6 weeks
- Final Discharge of infant at 18 months of Age after HIV Antibody Testing (RTK)
WHO promotes exclusive breastfeeding with anti-retrovirals as optimal nutrition for HIV-exposed infants
Trend of Infant feeding practice among HIV positive mothers in Jos, Nigeria

2004 - 2009
- EBF: 9%
- BMS: 91%

2010 - 2012
- EBF: 67%
- BMS: 33%

2014-2015
- EBF: 90%
- BMS: 10%

JUTH Program Data
Before Pregnancy
- N = 700
- MTCT by 18 months: 3
- MTCT Rate: 0.4%

During Pregnancy
- N = 151
- MTCT by 18 months: 3
- MTCT Rate: 2.0%

In resource-constrained settings where HIV is prevalent, adoption of WHO ‘Option B+’ deserves serious consideration.

Durability of current ART regimens in of critical importance in ending the epidemic in Nigeria

- Support and promote adherence
- Promptly identify treatment failure and managed appropriately
- Track prevalence of transmitted antiretroviral-resistant viruses among ARV-naïve pregnant.
HIV-1 Subtype Distribution in Nigerian Patients on ART Therapy

NIGERIA

Ibadan (n=60)

Lagos (n=98)

Maiduguri (n=40)

Los (n=160)

B. Chaplin et al. 2007 (n=358)
HIV-1 Subtypes Among Antiretroviral-Naïve Pregnant Women in Jos, Nigeria.

The total proportion of subtype G (G + G’) detected = 19/34 (56.0%).

## HIV-1 Drug Resistance Mutations by Study Groups in Jos Nigeria

<table>
<thead>
<tr>
<th>Sample Group</th>
<th>No of samples (%)</th>
<th>No of WHO SDRM (%)</th>
<th>WHO Surveillance Drug Resistance mutation Detected</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ARV-Naive Primigravid &lt;25 years</strong></td>
<td>18 (52.9)</td>
<td>0 (0)</td>
<td>0</td>
</tr>
<tr>
<td><strong>ARV-Naive Primigravid 26-30 years</strong></td>
<td>11 (32.4)</td>
<td>1 (2.9)</td>
<td>M41L*</td>
</tr>
<tr>
<td><strong>Recent Infection Detected by BED and Multi assays</strong></td>
<td>5 (14.7)</td>
<td>0 (0)</td>
<td>G190A*</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>34 (100)</td>
<td>1 (2.9)</td>
<td>1</td>
</tr>
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</table>

*HIV-1 drug resistance mutations found on the WHO SDRM list: one each of NRTI and NNRTI mutations. The subject harbouring the mutations was 27 years old.*


RCOG World Congress Cape Town 2017
A systematic review of interventions to improve prevention of mother-to-child HIV transmission service delivery and promote retention

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Abstract

Introduction: The success of prevention of mother-to-child transmission of HIV (PMTCT) is dependent upon high retention of mother-infant pairs within these programmes. This is a systematic review to evaluate the effectiveness of interventions that aim to improve PMTCT service delivery and promote retention throughout the PMTCT steps.

Methods: Selected databases were searched for studies published in English (up to September 2015). Outcomes of interest included antiretroviral (ARV) drugs or antiretroviral therapy (ART) initiation among HIV-positive pregnant and/or breastfeeding women and their infants, retention into PMTCT programs, the uptake of early infant diagnosis (EID) of HIV and infant HIV status.

1. Mobile phone-based reminders may improve the uptake of EID of HIV

2. Studies on male partner involvement in PMTCT reported reductions in HIV transmission to infants
Men involvement in ANC enhances PMTCT

- Male involvement in ANC is desirable:
  - Increases male participation in VCT
  - Decreases Infant Infection
  - Increases HIV-free survival

- Promotes Partner disclosure of HIV positive status

- Enhances management of HIV Sero-discordance

Mother to Mother (M2M) Peer Support for Women in Prevention of Mother to Child Transmission (PMTCT) Programmes: A Qualitative Study

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Médecins Sans Frontières, Operational Centre Barcelona-Athens, Belgravia, Harare, Zimbabwe

Abstract

Introduction: Mother-to-Mother (M2M) or “Mentor Mother” programmes utilise HIV positive mothers to provide support and advice to HIV positive pregnant women and mothers of HIV exposed babies. Médecins Sans Frontières (MSF) supported a Mentor Mother programme in Bulawayo, Zimbabwe from 2009 to 2012, with programme beneficiaries observed to have far higher retention at 6–8 weeks (99% vs 50%, p<0.0005) and to have higher adherence to Prevention of Mother to Child Transmission (PMTCT) guidelines, compared to those not opting in. In this study we explore how the M2M programme may have contributed to these findings.

Methods: In this qualitative study we used thematic analysis of in-depth interviews (n = 79). This study was conducted in 2 urban districts of Bulawayo, Zimbabwe’s second largest city.

Results: Interviews were completed by 14 mentor mothers, 10 mentor mother family members, 30 beneficiaries (women enrolled both in PMTCT and M2M), 10 beneficiary family members, 5 women enrolled in PMTCT but who had declined to take part in the M2M programme and 10 healthcare staff members. All beneficiaries and health care staff reported that the programme had improved retention and provided rich information on how this was achieved. Additionally respondents described how the programme had helped build about beneficial behaviour change.

Conclusions: M2M programmes offer great potential to empower communities affected by HIV to catalyse positive behaviour change. Our results illustrate how M2M involvement may increase retention in PMTCT programmes. Non-disclosure to one’s partner, as well as some cultural practices prevalent in Zimbabwe appear to be major barriers to participation in M2M programmes.

- M2M program may improve retention in care down the PMTCT cascade
- Non-disclosure to partners and cultural challenges may hinder participation
The Impact of Mentor Mother Programs on PMTCT Service Uptake and Retention-in-Care at Primary Health Care Facilities in Nigeria: A Prospective Cohort Study (MoMent Nigeria)

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Background: Nigeria is a key target country in the global effort toward elimination of mother-to-child transmission of HIV. Low coverage of prevention of mother-to-child transmission (PMTCT) interventions, adherence, and retention-in-care rates in HIV-positive pregnant women are contributing factors to high mother-to-child transmission of HIV (MTCT) rates. In Nigeria, rural areas, served largely by primary health care facilities, have particularly poor indicators of PMTCT coverage. Mentor Mothers are HIV-positive women who serve as peer counselors for PMTCT clients, providing guidance and support in keeping appointments and promoting antiretroviral adherence and retention-in-care. The Mother Mentor (MoMent) study aims to investigate the impact of structured Mentor Mother programs on PMTCT outcomes in Nigeria.

Prospective Cohort Study in Nigeria. Final outcome awaited
STEPS TO ‘START FREE ERA’ IN NIGERIA

HIV-free Generation

‘Test and Start’

POC EID

Male Involvement

MCH services & RH/HIV integration

Combination Prevention

Task-Shifting

Decentralization

Private Sector Engagement

Community engagement for participation and action

RCOG World Congress Cape Town 2017
How do we get there?
Acknowledgements

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- JUTH / University of Jos Management
- FMOH / NASCP
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- PEPFAR / Government and People of USA
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