PMTCT UPDATE

AWACC CONFERENCE
DURBAN SEPT 2013
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Outline

• Background
• Risk of MTCT
• Historical ARV interventions
• SA PMTCT program
• Rationale for changes
• Latest guidelines
• Expected outcomes
Background

• In 2009, 370 000 children became newly infected with HIV globally and
• An estimated 42 000—60 000 pregnant women died because of HIV.
• In contrast, in high-income countries the number of new HIV infections among children and maternal and child deaths due to HIV was virtually zero.
Progress in PMTCT- UNAIDS

• As of December 2012, over 900 000 pregnant women living with HIV globally received ARV prophylaxis or treatment.

• Coverage of antiretroviral programmes for PMTCT (excluding the less-effective sd NVP regimen) increased from 57% (51–64%) in 2011 to 63% (57–70%) in 2012.

• Among pregnant women who needed antiretroviral therapy for their own health in 2012, 58% received HIV treatment – lower than the 65% (61–70%) treatment coverage for adults overall.
Pmtct progress

• As a result of scaled-up HIV prevention services, the annual number of newly infected children in 2012 was 260,000 (230,000 – 320,000) in low- and middle-income countries, 35% lower than in 2009.

• From 2001 to 2012, there was a 52% decline in new HIV infections among children.

• Expanded access to services to PMTCT protected more than 670,000 children from acquiring HIV from 2009 to 2012.

• The number of women newly infected with HIV declined by 44% from 2009 to 2012 in Ghana, by 23% in Uganda and by 21% in South Africa.
Key elements of eliminating new HIV infections among children and keeping their mothers alive

The Global Plan towards the elimination of new infections among children by 2015 and keeping their mothers alive recommends a set of priority actions under four key programmatic components:

1. Preventing new HIV infections among women of reproductive age.
2. Helping women living with HIV avoid unintended pregnancies.
3. Ensuring that pregnant women have access to HIV testing and counselling; and that those who test positive have access to antiretroviral medicines to prevent transmission during pregnancy, delivery or breastfeeding.
4. Providing HIV care, treatment and support for women, children living with HIV and their families.

The Global Plan prioritizes scale-up in 22 priority countries that collectively account for almost 90% of pregnant women living with HIV.
2011 UN Political Declaration on HIV/AIDS – Targets and elimination commitments

1. Reduce sexual transmission by 50% by 2015
2. Reduce transmission of HIV among people who inject drugs by 50% by 2015
3. Eliminate new HIV infections among children by 2015 and substantially reduce AIDS-related maternal deaths
4. Reach 15 million people living with HIV with lifesaving antiretroviral treatment by 2015
5. Reduce tuberculosis deaths in people living with HIV by 50% by 2015
6. Close the global AIDS resource gap by 2015 and reach annual global investment of US$ 22-24 billion in low- and middle-income countries
7. Eliminate gender inequalities and gender-based abuse and violence and increase the capacity of women and girls to protect themselves from HIV
8. Eliminate stigma and discrimination against people living with and affected by HIV through promotion of laws and policies that ensure the full realization of all human rights and fundamental freedoms
9. Eliminate HIV-related restrictions on entry, stay and residence
10. Eliminate parallel systems for HIV-related services to strengthen integration of the AIDS response in global health and development efforts
If

• 90% of HIV positive pregnant women received combined ARV (50% started during the pregnancy and 40% started ART before the pregnancy) and

• 100% of those women received prophylaxis during breastfeeding

• HIV incidence was reduced by 50% among reproductive age women,

• and women living with HIV were able to meet their family planning needs

• the reduction in new child infections would still only reach an 83% reduction from 2009 levels in 2015.
Closer home

• There were approximately 34 [31.4–35.9] million people living with HIV in 2011.
• Sub-Saharan Africa is the most affected region, with nearly 1 in every 20 adults living with HIV. (69% of all people living with HIV are living in this region).
• SA’s HIV epidemic remains the biggest in the world, with an estimated 5.6 million HIV-positive people as of 2009. (This exceeds the number of people living with HIV in the entire Asian region).
Figure 2: The HIV prevalence trends among antenatal women, South Africa 1990 to 2011.

The estimates from 2006 are based on a different sample size to the previous years.
Figure 5: HIV prevalence distribution by province, South Africa, 2011
Timing of MTCT – (no intervention)

Proportion of infections

0% 20% 40% 60% 80% 100%

Early Antenatal (<36 wks)

Late Antenatal (36 wks to labor)

Early Postpartum (0-6 months)

Late Postpartum (6-24 months)

Labor and Delivery
Completed Trials: Focused on Prevention AP/IP Transmission

- **AP**
  - Minimum duration?
  - Is it needed?
  - 14 wks
  - 28 wks
  - 36 wks

- **IP**
  - Work alone?
  - 3d to 1 wk
  - 6 wks

- **PP** (baby, mother or both)
  - 3d to 1 wk
  - 6 wks

- **076**
  - NonBF

- **Thai (Harvard)**
  - NonBF

- **Thai (Harvard)**
  - NonBF

- **Thai (Harvard), BMS**
  - NonBF

- **IvC (ANRS), PETRA, Thai (Harvard)**
  - BF/NonBF

- **Thai (CDC), IvC (CDC)**
  - NonBF/BF

- **PETRA, 012, SAINT**
  - BF

- **PETRA**
  - BF

**AP: Minimum duration? Is it needed?**

**IP: Work alone?**

**PP: Minimal duration? Is it needed?**
What did we know then?
Perinatal HIV Clinical Trial Results

1994

1994 U.S. AZT Trial ACTG 076
• 67% reduction in transmission

1998

1998 Thai Bangkok short AP/IP AZT trial
• 50% reduction in transmission

1998 Cote d’Ivoire short AP/IP AZT trials
• 37% reduction in transmission (breastfeeding)

1999

1999 PETRA AZT/3TC trial (6 wk results)
• 50% reduction with longest arm.
• 38% reduction with the IP/PP arm

1999 Uganda 2-dose IP/PP NVP trial (HIVNET 012)
• 47% reduction in transmission (breastfeeding)

2000

2000 Thailand Long vs short AZT regimens
• 4% TR in LL (non BF)

2002

2002 Cote d’Ivoire DITRAME +
• 6.2% TR with AZT & IP/PP NVP

2003

2003 DITRAME + 1201.1
• 4.7% TR with AZT/3TC & IP/PP NVP

2004

2004 Thailand PHPT
• <2% AZT + NVP

2004

2004 Thailand PHPT
• <2% AZT + NVP
Evolvement of National PMTCT programme

- **PMTCT April 2004** – pilot sites of sd NVP and subsequently countrywide sd NVP – 50% reduction intrapartum, overall transmission 14%

- **ARV roll out introduced Feb 2008** - pregn women <200 for HAART, others for sd NVP

- **Scale up 2009** – HAART for those <200 and the rest AZT from 28wks

- **Revised in 2010** – cut off for pregn women = CD 4 of 350 and AZT started at 14wks (5% MTCT)

- **Amendment in April 2012** - substitution of NVP with EFV

- **April 2013** – FDC for all infected (lifelong or until end of b/feeding)
<table>
<thead>
<tr>
<th>2006</th>
<th>2009/2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART eligible – CD 4 &lt;200 or ≤200 or &lt;350 with WHO stage 4</td>
<td>ART eligible – CD 4 ≤350 or WHO stage 3 or 4</td>
</tr>
<tr>
<td>If not ARV eligible:</td>
<td>Option A: same as 2006, but start @14wks</td>
</tr>
<tr>
<td>- AZT from 28wks + sd-NVP + AZT + 3TC during labour and delivery</td>
<td>Option B: Maternal 3 drug regimen</td>
</tr>
<tr>
<td>+ AZT + 3TC for 7 days postpartum</td>
<td></td>
</tr>
<tr>
<td>Infant = AZT syrup for 1wk or 4 wks if maternal therapy &lt;28wks</td>
<td>Infant – 4 wks of AZT for all – regardless of maternal therapy</td>
</tr>
<tr>
<td>No recommendation for mom or infant ARV’s if mom breastfeeding</td>
<td>Maternal and infant ARV’s if mom breastfeeding</td>
</tr>
</tbody>
</table>
Why 350

- Accounts for 40% of pregn HIV infected women
- Accounts for >75% of MTCT risk
- Accounts for >80% of pp transmission
- Accounts for 85% of maternal deaths within 2yrs of delivery
- Strong benefit for PMTCT during AN, intra and during b/feeding
Table 1. Three options for PMTCT programmes

<table>
<thead>
<tr>
<th>Woman receives:</th>
<th>Treatment (for CD4 count ≤350 cells/mm³)</th>
<th>Prophylaxis (for CD4 count &gt;350 cells/mm³)</th>
<th>Infant receives:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Option A</strong></td>
<td>Triple ARVs starting as soon as diagnosed, continued for life</td>
<td>Antepartum: AZT starting as early as 14 weeks gestation</td>
<td>Daily NVP from birth through 1 week beyond complete cessation of breastfeeding; or, if not breastfeeding or if mother is on treatment, through age 4–6 weeks</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Intrapartum:</strong> at onset of labour, sdNVP and first dose of AZT/3TC</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td><strong>Postpartum:</strong> daily AZT/3TC through 7 days postpartum</td>
<td></td>
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<tr>
<td><strong>Option B</strong></td>
<td><strong>Same initial ARVs for both:</strong></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Triple ARVs starting as soon as diagnosed, continued for life</td>
<td>Triple ARVs starting as early as 14 weeks gestation and continued intrapartum and through childbirth if not breastfeeding or until 1 week after cessation of all breastfeeding</td>
<td></td>
</tr>
<tr>
<td><strong>Option B+</strong></td>
<td><strong>Same for treatment and prophylaxis:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Regardless of CD4 count, triple ARVs starting as soon as diagnosed, ‡ continued for life</td>
<td>Daily NVP or AZT from birth through age 4–6 weeks regardless of infant feeding method</td>
<td></td>
</tr>
</tbody>
</table>

Note: *Triple ARVs* refers to the use of one of the recommended 3-drug fully suppressive treatment options.

*Recommended in WHO 2010 PMTCT guidelines

*True only for EFV-based first-line ART; NVP-based ART not recommended for prophylaxis (CD4 >350)

*Formal recommendations for Option B+ have not been made, but presumably ART would start at diagnosis.
OPTION B+ rationale

• Full integration and Simplification at the Primary Health Care Level
• Increased country readiness and experience
• Lower cost of drugs
• 3-in-1 intervention of PMTCT, treatment, and ‘treatment as prevention.’
New Guidelines

• Introduced 1st April 2013
• Key changes:
  – Prioritising of pregnant and breast feeding women
  – FDC
  – Phasing out of pre ART literacy classes
  – Initiation of HAART as soon as diagnosis made
IMPLEMENTING NEW GUIDELINES
ALL WOMEN IN THE REPRODUCTIVE AGE GROUP

Goals of interventions:
• Improve the quality of sexual and reproductive health services
• Improve access to family planning services
• Improve access to safer sex options
• Prevent transmission of HIV infection
• Improve access to HCT services to know HIV status
During pregnancy

- All women presenting to ANC **must** be seen
- Book early (<14 weeks)
- Group pre test counseling,
- Individual testing, and
- Individual post test counseling
ANTENATAL CARE

Goals of interventions:

• Improve the quality of the mother’s health and prevent mortality
• Identify women who are HIV-positive including those who may sero-convert during pregnancy

• Ensure ALL women enter the PMTCT programme
  – If HIV-infected then require prompt provision of ARVs and further counselling
  – If HIV-uninfected require specific counselling and advice on repeat testing every 3 months after a negative test, and/or at 32 weeks, labour and through breastfeeding every 3 months
  – ALL women to have TB screening

• Prevent mother-to-child transmission of HIV
• Provide ART, as soon as HIV positive status known, in pregnancy for maternal health and to reduce HIV transmission to the baby
LABOUR AND DELIVERY

Goals of interventions:

• Provide HIV counselling and testing services to all women with unknown status
• Identify HIV-positive women
• Provide adequate PMTCT coverage
• **Screen for TB in all women irrespective of HIV-status**
• Continuity of care with prophylactic and treatment antiretroviral regimens
• Initiate neonates born to HIV-positive mothers with antiretroviral prophylaxis immediately at birth
• Establish safe infant feeding practices supporting exclusive breastfeeding and kangaroo mother care for all mothers and infants
POSTNATAL FOLLOW-UP OF MOTHER AND INFANT

Goals of interventions:

MOTHER:
• Provide follow-up post-partum care including a postnatal visit within 3 – 6 days for mother and baby
• Improve the quality of the mother’s health and reduce mortality by including family planning counselling and cervical cancer screening where applicable
• Provide post-exposure prophylaxis of HIV for HIV-exposed infants
• Screen and where indicated exclude TB in mothers and infants
• Reduce postnatal HIV transmission through breastfeeding

INFANT:
• Identify all HIV-exposed infants as early.
  - PCR HIV test for all symptomatic infants* anytime after birth and at 6 weeks (for asymptomatic infants) at routine EPI 6 week visit.
  (* Symptomatic Infants – any infants displaying the following: failing to thrive (includes LBW), haematological abnormality like anaemia or thrombocytopenia, congenital pneumonia, pneumonia, hepatosplenomegaly, extensive oral candidiasis, significant lymphadenopathy, any OIs)
• Identify all HIV-infected infants and start ART promptly (within 7 days)
Infants

• All infants born to HIV positive mothers:
  - start NVP as soon after birth as possible (within 72 hours postdelivery) and continue for 6 weeks.

• Infants of HIV infected women not on ART (treatment or prophylaxis) who are breastfeeding should continue daily NVP (ie beyond 6 weeks) until one week after cessation of breast feeding.
Infant testing

• All HIV-exposed infants not on ART should have a rapid test at 18 months of age to confirm HIV status conferred by the 6-week PCR test and 6 weeks post breast feeding test.

• All HIV-infected individuals should have provision of TB screening, INH prophylaxis, CTX prophylaxis, nutritional and psychosocial support, cervical cancer screening, family planning options, monitoring of CD4 cell count and, clinical staging.

• Mothers of unknown HIV status or who are HIV negative should be tested for HIV test at 6 weeks, 3 months, 9 months and one year postpartum, particularly if they are breast feeding.

• Note at initial PICT in the ANC, mothers would be consenting once for the protocol of initial and repeated HIV testing throughout HIV exposure so as to ensure that this is efficiently done without any requirement for further counselling unless indicated.
Figure 2: **PMTCT Algorithm 1**: for all women who are newly diagnosed as HIV positive anytime during pregnancy AND women who enter ANC with known HIV positive status and not yet on ART.

First antenatal visit: HIV-positive not on ART (known and newly diagnosed)

- History & clinical assessment including for TB & WHO staging,
  - Bloods sent for creatinine, CD4

If no active psychiatric illness or history of renal disease

- **Start FDC (TDF, FTC/3TC, EFV) same day**

1 week later: Review results of CD4, serum creatinine

- If serum creatinine ≤85 µmol/L
  - Check CD4 counts, WHO staging
    - **CD4≤350 or stage 3/4**
      - Continue FDC as prophylaxis through antenatal, labour and delivery, postnatal till one week after complete cessation of breastfeeding
    - **CD4>350 or stage 1/2**
      - Continue FDC as lifelong treatment

If active psychiatric illness or history of renal disease

- **Start AZT 300mg same day** (provided Hb >7g/dL)

for further management of pregnant women on AZT see figure 3

If serum creatinine >85 µmol/L: see Figure 4
Figure 3: PMTCT algorithm 2: Initiation of antiretrovirals during pregnancy in women with active psychiatric illness or history of renal disease

If active psychiatric illness or history of renal disease

Start AZT 300mg same day

History, clinical assessment, WHO staging

Bloods sent for serum creatinine, CD4

1 week later

Review results of CD4, serum creatinine

If serum creatinine ≤85 μmol/L

Check CD4 counts, WHO staging

CD4 ≤350 or stage 3/4

CD4 >350 or stage 1/2

Requires alternate triple-drug regimen for lifelong treatment per adult guidelines – TDF+ FTC+ NVP

Use LPV/RTV in women with CD4 counts > 250 cells/mm³

If serum creatinine > 85 μmol/L:

see Figure 4

Continue AZT prophylaxis throughout pregnancy

Intrapartum: Provide AZT 3 hourly during labour, Stat Dose NVP + TDF/FTC
**PMTCT algorithm 3:** Initiation of antiretrovirals during pregnancy in women with serum creatinine > 85 µmol/L:

1. **If serum creatinine > 85 µmol/L** (referred to ART Clinic)

2. **Check CD4 counts, WHO staging**

   - **CD4≤350 or stage 3/4**
     - Requires alternate triple-drug regimen for lifelong treatment per adult guidelines: AZT+ 3TC+ EFV
     - If haemoglobin <7g/dl AZT is contraindicated. Use ABC or D4T instead of AZT.

   - **CD4>350 or stage 1/2**
     - Continue AZT prophylaxis throughout pregnancy
     - Intrapartum: Provide AZT 3 hourly during labour, STAT dose: NVP + TDF/FTC
PMTCT Algorithm 4: for all women who are newly diagnosed any time during the **postnatal period**.

**Postnatal visit: newly diagnosed HIV positive**: History & clinical assessment including for TB & WHO staging, Bloods sent for creatinine, CD4

See algorithm 1 for further management of mother. If no active psychiatric illness or history of renal disease: **Start FDC (TDF, FTC/3TC, EFV) same day and Check status of infant feeding,**

- If currently breastfeeding the baby
  - Check baby HIV status (PCR test before 18 months, and rapid HIV test after 18 months); Maternal bloods sent for creatinine, CD4, assess for active psychiatric illness.

- 1 week later: Review results of Maternal CD4, serum creatinine
  - If serum creatinine ≤85 µmol/L
    - Check CD4 counts, WHO staging
      - CD4≤350 or stage 3/4
        - Continue FDC as lifelong treatment
      - CD4>350 or stage 1/2
        - Continue FDC as prophylaxis through postnatal till one week after complete cessation of breastfeeding

- If serum creatinine >85 µmol/L: see Figure 4
  - If serum creatinine >85 µmol/L: see Figure 4

- In case of exposure to BF at any time during the postnatal period
  - Check baby HIV status (PCR)
    - Return in 1 week to review results

- Baby PCR Positive: initiate Treatment
  - If currently breastfeeding the baby
    - Check baby HIV status (PCR test before 18 months, and rapid HIV test after 18 months); Maternal bloods sent for creatinine, CD4, assess for active psychiatric illness.
    - Start FDC (TDF, FTC/3TC, EFV) same day
    - Infant to be given NVP syrup for 7 days and return for PCR test results within 7 days

- Baby PCR Negative: Continue NVP for 6 weeks

- Baby PCR Positive: initiate Treatment
  - If PCR has been done anytime before 6 weeks, and negative, please repeat PCR at 6 weeks

- Baby PCR Negative: if PCR has been done anytime before 6 weeks, and negative, please repeat PCR at 6 weeks
HIV -ve

- Women who test HIV-negative anytime during antenatal, labour or postnatal periods are still considered part of the PMTCT programme and should receive post-test counselling and counselling on risk reduction interventions including involvement of partners or spouses, focusing mainly on how to maintain their HIV-negative status. They should continue to receive routine antenatal care, and should be encouraged to use condoms. They should be offered a repeat HIV test 12 weeks after the initial HIV test is negative and/or at 32 weeks or later gestation periods or in the labour ward, at the 6 week post natal visit, at 3, 6 and 12 months during breast feeding to detect those who may have sero-converted during pregnancy. They should have a symptom screen for TB at each visit.
Refusal / unbooked

- **Women who choose not to be tested** should receive individual ‘post-refusal’ counselling and be offered HIV testing at every subsequent visit in a non-coercive manner during the antenatal period. They should also be offered an HIV test at the onset of labour; if this is not possible, they should be offered testing shortly after childbirth. They should have a symptom screen for TB at each visit.

- **Women who initially test negative and subsequently test positive during pregnancy** should be initiated on FDC on same day of diagnosis. Further management as per figure 2 on page 8.

- **Unbooked women reporting in labour** should be counselled and tested for HIV during the first stage of labour, and if positive given a single dose of NVP and TDF and FTC and 3 hourly AZT until delivery. Postdelivery, start FDC and do routine tests (creatinine and CD4) and manage as per figure 2 on page 8.
<table>
<thead>
<tr>
<th>For women taking</th>
<th>Monitoring if on lifelong therapy</th>
<th>Monitoring if on prophylaxis only</th>
</tr>
</thead>
<tbody>
<tr>
<td>TDF+3TC/FTC+EFV(FDC)</td>
<td>Creatinine at 3, 6 and 12 months post-initiation</td>
<td>Creatinine at 3, 6 and 12 months post-initiation</td>
</tr>
<tr>
<td></td>
<td>Viral Load at 6 and 12 months post-initiation; CD4 at 12 months post-initiation</td>
<td></td>
</tr>
<tr>
<td>AZT only</td>
<td></td>
<td>Haemoglobin 1, 2, 3 and 6 months post-initiation</td>
</tr>
<tr>
<td>Other triple-drug regimens</td>
<td>Per adult ARV guidelines</td>
<td></td>
</tr>
</tbody>
</table>
### Maternal regimens

<table>
<thead>
<tr>
<th>Woman</th>
<th>Regimen</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st antenatal visit</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All women at first antenatal visit (any gestational age)</td>
<td>FDC initiated immediately</td>
<td>If there is a contraindication to the FDC: Start AZT immediately and review within a week. (see figure 2-algorithm)</td>
</tr>
<tr>
<td>Currently on lifelong ART</td>
<td>Continue the ART regimen If the woman is on a compatible regimen (EFV, 3TC TDF) change to FDC</td>
<td>Check a VL when pregnancy diagnosed</td>
</tr>
<tr>
<td><strong>2nd antenatal visit (1 week later)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creatinine ≤85μmol/l Any CD4 cell count</td>
<td>Continue FDC</td>
<td></td>
</tr>
<tr>
<td>Creatinine &gt; 85 μmol/l TDF contraindicated (renal disease)</td>
<td>AZT + 3TC + EFV</td>
<td>If haemoglobin &lt;7g/dl AZT is contraindicated. Use D4T instead of AZT. Refer for investigation for cause of renal disease</td>
</tr>
<tr>
<td>Contraindication to EFV (active psychiatric illness) CD4 ≤ 350cells/mm³</td>
<td>TDF + FTC + NVP</td>
<td>Substitute LPV/RTV for NVP in women with CD4 counts &gt; 250cells/mm³</td>
</tr>
<tr>
<td>Contraindication to EFV (active psychiatric illness) CD4 &gt; 350cells/mm³</td>
<td>AZT in pregnancy</td>
<td></td>
</tr>
<tr>
<td>sdNVP + sd TDF + FTC and AZT 3hrly in labour</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Labour</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unbooked and presents in labour and tests HIV positive</td>
<td>sdNVP + sd TDF + FTC and AZT 3hrly in labour</td>
<td>Assess maternal ART eligibility before discharge</td>
</tr>
<tr>
<td></td>
<td>start FDC after delivery if woman will breast feed</td>
<td></td>
</tr>
</tbody>
</table>
### Infant regimens

<table>
<thead>
<tr>
<th>Infant</th>
<th>Regimen</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother on lifelong ART or antenatal prophylaxis received (including TDF + 3TC/FTC + EFV or AZT)</td>
<td>NVP at birth and then daily for 6 weeks</td>
<td>If mother is breast feeding and not virally suppressed e.g. late booking or AZT mono-therapy continue NVP for infant throughout breast feeding until one week post cessation of breastfeeding,</td>
</tr>
<tr>
<td>Mother did not get any ART before or during delivery and tests HIV positive post delivery</td>
<td>NVP as soon as possible and daily for 6 weeks</td>
<td>Assess ART eligibility as soon as possible</td>
</tr>
</tbody>
</table>
| Unknown maternal status because orphaned or abandoned | Give NVP immediately*  
Test infant with rapid HIV test. If positive continue NVP for 6 weeks.  
If negative discontinue NVP | Follow up 6 week HIV DNA PCR                |
| Mother on AZT regimen  
(due to any contraindication to the FDC regimen) | NVP at birth and then daily for 6 weeks.     | Test infant with 6 week DNA PCR test. If negative and breastfeeding continue NVP till one week after complete cessation of breastfeeding |

1. * If rapid HIV test can be done within 2 hours, then wait for HIV result before commencing NVP
<table>
<thead>
<tr>
<th>Drug</th>
<th>Dosage</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>TDF (Tenofovir)</td>
<td>300mg daily</td>
<td>Tenofovir is contraindicated if serum creatinine &gt;85µmol/L during pregnancy (or creatinine clearance of &lt;50ml/min in non-pregnant adults)</td>
</tr>
<tr>
<td>d4T (Stavudine)</td>
<td>30mg 12hrly po</td>
<td>All adult patients now receive 30mg regardless of weight</td>
</tr>
<tr>
<td>3TC (Lamivudine)</td>
<td>300mg daily</td>
<td></td>
</tr>
<tr>
<td>FTC (Emtracitabine)</td>
<td>200mg daily</td>
<td></td>
</tr>
<tr>
<td>NVP (Nevirapine)</td>
<td>200mg dly po X 2 weeks then 200mg 12 hourly po For PMTCT purposes single dose (sdNVP) is used as a 200mg tablet given once.</td>
<td>Should be used with caution with TB treatment Avoid NVP if CD4 count &gt;250cells/mm³</td>
</tr>
<tr>
<td>EFV (Efavirenz)</td>
<td>600mg nocte</td>
<td>Avoid if active psychiatric illness</td>
</tr>
<tr>
<td>Aluvia® (lopinavir 200mg /ritonavir 50mg)</td>
<td>2 tabs 12 hourly (Lop400mg/Rit100mg)</td>
<td>Preferably taken with food. Boosting required with TB treatment</td>
</tr>
<tr>
<td>AZT (Zidovudine)</td>
<td>300mg 12 hourly po</td>
<td>Avoid if severe anaemia (Hb &lt;8g/dl)</td>
</tr>
</tbody>
</table>
Breastfeeding

- Each pregnant woman should receive at least four antenatal counselling sessions on infant feeding.

- At every antenatal visit, HIV-negative women or women of unknown HIV status should be advised to exclusively breastfeed their babies during the first 6 months of life and encouraged to continue breastfeeding for up to 2 years and beyond.

- Every effort should be made to test all pregnant and breastfeeding women for HIV as outlined in the testing section of this document.

- Pregnant HIV negative women or women of unknown HIV status should be counselled to avoid mixed feeding their infants during their first six months of life as exclusive breastfeeding improves child survival.
• Breastfeeding women living with HIV are advised to use antiretroviral medicines when breastfeeding their newborns.

• In 2012, antiretroviral coverage was substantially lower during the breastfeeding period (49%) than during pregnancy and delivery (62%).

• It is now estimated that half of all new episodes of HIV transmission to children occur during the breastfeeding period when the majority of lactating women are not receiving the prophylaxis necessary to prevent HIV transmission.
HIV and maternal health / deaths
Global Map Depiction of Maternal Mortality Ratios, 2005

Saving Mothers Report – “Big 5”
CAUSES OF DEATH
HIV POS v/s HIV NEG
Institutional mortality ratio for HIV 6x higher!!

• 2008 - 2010 - there were 4,867 maternal deaths in SA.
• 80% were tested for HIV (of which 70% were infected)
• The Institutional MMR was 430.35/1000000 live births for HIV infected women compared to 75.46/100000 live births HIV uninfected women
Comparison of HIV status and causes of maternal death (using estimated IMMR per 100,000 live births)

<table>
<thead>
<tr>
<th>Cause of death*</th>
<th>HIV-negative</th>
<th>HIV-positive</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical and surgical disorders</td>
<td>11.5</td>
<td>24.2</td>
<td>16.7</td>
</tr>
<tr>
<td>NPRIs</td>
<td>6.6</td>
<td>267.3</td>
<td>25.6</td>
</tr>
<tr>
<td>Ectopic pregnancy</td>
<td>0.3</td>
<td>3.0</td>
<td>9.1</td>
</tr>
<tr>
<td>Miscarriage</td>
<td>1.4</td>
<td>9.9</td>
<td>17.6</td>
</tr>
<tr>
<td>Hyperemesis gravidarum</td>
<td>0.2</td>
<td>0.2</td>
<td>0.0</td>
</tr>
<tr>
<td>Pregnancy-related sepsis</td>
<td>4.1</td>
<td>24.2</td>
<td>6.8</td>
</tr>
<tr>
<td>Obstetric haemorrhage</td>
<td>17.2</td>
<td>38.4</td>
<td>30.5</td>
</tr>
<tr>
<td>Hypertension</td>
<td>18.8</td>
<td>27.4</td>
<td>37.0</td>
</tr>
<tr>
<td>Anaesthetic complications</td>
<td>4.1</td>
<td>4.8</td>
<td>4.5</td>
</tr>
<tr>
<td>Embolism</td>
<td>3.2</td>
<td>4.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Acute collapse, cause unknown</td>
<td>3.2</td>
<td>9.2</td>
<td>6.8</td>
</tr>
<tr>
<td>Unknown</td>
<td>3.7</td>
<td>15.7</td>
<td>10.1</td>
</tr>
<tr>
<td>Total</td>
<td>74.4</td>
<td>428.3</td>
<td>167.8</td>
</tr>
</tbody>
</table>

NPRI = non-pregnancy-related infection.
MORBIDITY

• For every death, there is 5-6x more morbidity (Severe acute maternal mortality – underrepresented)

• mainly infective, including fever, endometritis, wound sepsis, etc

• However, iMMR higher in HIV infected even for non-infective causes
<table>
<thead>
<tr>
<th>HIV status</th>
<th>n (%)</th>
<th>Probable cause of death</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV-negative</td>
<td>1166  (24.0)</td>
<td></td>
</tr>
<tr>
<td>HIV-positive not requiring HAART</td>
<td>949  (19.5)</td>
<td>(?? Other causes)</td>
</tr>
<tr>
<td>AIDS not receiving HAART</td>
<td>938   (19.3)</td>
<td>(?late presentation)</td>
</tr>
<tr>
<td>AIDS receiving HAART</td>
<td>882   (18.1)</td>
<td>(?complications of ARV)</td>
</tr>
<tr>
<td>Declined</td>
<td>39    (0.8)</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>992   (20.4)</td>
<td></td>
</tr>
</tbody>
</table>

HAART = highly active antiretroviral therapy.
iMMR and HIV status (? Effect of HAART)

APPEARS TO HAVE DECREASED BY 13%
SA and MDG’s

- 1. To eradicate extreme poverty and hunger
- 2. To achieve universal primary education
- 3. To promote gender equality and empower women
- 4. To reduce child mortality
- 5. To improve maternal health
- 6. To combat HIV/AIDS, malaria and other diseases
- 7. To ensure environmental sustainability
- 8. To develop a global partnership for development

Between 1998 and 2007, the maternal mortality rate leapt from 150 to 625 deaths for each 100,000 live births. That means South Africa, sub-Saharan Africa's economic powerhouse, has no hope of meeting the U.N. MDG that require 38 deaths per 100,000 births by 2015.
End