MULHERES GRAVIDAS
OPTION B+ PTV / EMTCT

Dr ND NHLAPO
Prevention of Mother to Child Transmission

The new term is EMTCT!!
Learning objectives

• Understand scope of problem in Sub saharan Africa
• Understand when transmission occurs
• Understand risk factors for transmission
• Know which risk factors we can act on for maximal impact.
• Understand importance of maternal health for infant outcomes
• Understand goals of PMTCT for mother and baby
• Know which interventions we can implement to achieve those goals
History of the MDGs

In 2000, the Millennium Declaration was adopted but did not contain the MDGs in their present form. In 2001, a team of UN experts created the MDGs with indicators, without any inter-governmental process.
Goal 4 – Reduce child mortality

Despite substantial progress, the world is still falling short of the MDG child mortality target.

Child mortality rates have been halved.
Goal 5 – Improve maternal health

Much more still needs to be done to reduce maternal mortality.

Maternal mortality ratio.

Maternal Mortality

[Bar chart showing maternal mortality rates by region for 2000 and 2013]
Infants of HIV-infected women are 3.5 times more likely to die when the mother’s CD4 count <200

Children, even if not HIV-infected are 4 times likely to die when the mother dies

IHMA working group. Lancet 2004
## Scope of the problem

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of HIV infected pregnant women per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>&lt;7000</td>
</tr>
<tr>
<td>Namibia</td>
<td>7600</td>
</tr>
<tr>
<td>Botswana</td>
<td>14 000</td>
</tr>
<tr>
<td>Europe</td>
<td>15 000</td>
</tr>
<tr>
<td>Kenya</td>
<td>100 000</td>
</tr>
<tr>
<td>South Africa</td>
<td>380 000</td>
</tr>
</tbody>
</table>
The Big 5 Causes of Death in 2011-2013

<table>
<thead>
<tr>
<th>Cause of Death</th>
<th>%</th>
<th>Contributors</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV Related(NPRI)</td>
<td>40.5%</td>
<td>TB, PCP, Pneumonia</td>
</tr>
<tr>
<td>Haemorrhage</td>
<td>15.79%</td>
<td>Obstetric</td>
</tr>
<tr>
<td>Hypertension</td>
<td>14.77%</td>
<td></td>
</tr>
<tr>
<td>Pregnancy related sepsis</td>
<td>5.22%</td>
<td>Septic miscarriages &amp; puerperal sepsis</td>
</tr>
<tr>
<td>Medical &amp; surgical Disorders</td>
<td>11.38%</td>
<td></td>
</tr>
</tbody>
</table>

The big 5 are responsible for 86.5% of all maternal deaths
Mozambique Maternal Mortality (Maternal Child Survival Programme)

Maternal deaths = 408 /100 000

Leading causes:
1. Post Partum Haemorrhage
2. Pre- eclampsia
3. Sepsis
4. HIV
Maternal Transmission Rate
EMTCT OPTION B+
Possible Routes of Mother to Child Transmission of HIV

- **In utero**: 5-10%
- **At birth**: 10-15%
- **Breastfeeding**: 10 - 15%
Transmission Risk

Transmission Risk Activity:

1. ANC
2. Intrapartum
3. Post Partum
Risk factors for MTCT (1)

• Acute HIV infection (high plasma viral load)
• **Advanced maternal HIV disease**
  – Low CD4
  – High plasma viral load
  – AIDS diagnosis / WHO IV disease
  – High viral load genital secretions
  – Other OIs
• Concomitant STIs
• Obstetrical Factors:
  – Duration of rupture of Membranes > 4hrs
  – Mode of delivery (vaginal delivery vs C/S)
  – Placental inflammation/infection
  – Placenta previa
  – Invasive Procedures
Risk factors for MTCT (2)

• **Antiretroviral Treatment & Prophylaxis**
  – regimen
  – timing & duration of ART

• **Infant Feeding Method**
  – replacement
  – exclusive breast feeding
  – mixed feeding
  – breast feeding duration
WHAT IS OPTION B+?
Option A and B

- **Option A**
  - Mother (CD4 ≤ 350) ART
  - Mother (CD4 > 350) single ARV drug during pregnancy and delivery
  - Infant: ARV during whole breastfeeding period

- **Option B**
  - Mother (CD4 ≤ 350) ART
  - Mother (CD4 > 350) triple ARV drug (same as ART) during pregnancy, delivery and breastfeeding
  - Infant: ARV’s for 4-6 weeks
Option B+

- ‘Test and Treat’ for all pregnant women
- A simple version of Option B
  - No CD4 count needed
  - No stopping after end of breastfeeding period
- Main advantage
  - More simple to implement than Option B
- Other advantages
  - Health of the mother (health of the infant)
  - Next pregnancy is protected from the onset of the pregnancy
  - Increasing the % of women in reproductive age on ART
  - Prevents HIV transmission to uninfected sexual partners
Advantages of B+ WHO 2013 Guidelines on PMTCT

• Option B+ is lifelong ART for HIV positive pregnant and lactating women irrespective of clinical stage or CD4 count

• Benefits of B+
  • No need for CD4 count before starting B+
  • No interruption of triple ART “avoid a start-stop-start-stop approach”
  • Simpler to implement
  • One regimen for all-non-pregnant populations and pregnant women
  • Easier to harmonize with the treatment program
  • Covers future pregnancies esp with high fertility
Advantages of Option B+

• More paediatric HIV infections are averted-cost saving
• Better health outcomes for the mother-through earlier ART
• Prolonging the life of the mother improves the chances of survival for her HIV exposed infant (irrespective of HIV status)
• Benefits in the case of sero-dicordant couple (TasP)
Recommendations

“Option B+”

All pregnant and breastfeeding women infected with HIV should initiate triple ARVs (ART), which should be maintained at least for the duration of mother-to-child transmission risk. Women meeting treatment eligibility criteria should continue lifelong ART.

*(strong recommendation, moderate-quality evidence)*

For programmatic and operational reasons, particularly in generalized epidemics, all pregnant and breastfeeding women infected with HIV should initiate ART as lifelong treatment.

*(conditional recommendation, low-quality evidence)*

“Option B”

In some countries, for women who are not eligible for ART for their own health, consideration can be given to stopping the ARV regimen after the period of mother-to-child transmission risk has ceased.

*(conditional recommendation, low-quality evidence)*
# PMTCT MOZAMBIQUE

<table>
<thead>
<tr>
<th></th>
<th><strong>OPTION A</strong></th>
<th><strong>OPTION B+</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mother</strong></td>
<td>AZT - 14 week of pregnant NVP Single dose- handed on 14th week of pregnant to take at the beginning of labor. AZT + 3TC- from labor until 7 days after delivery.</td>
<td>ART early After HIV diagnostic + during pregnancy continue for life. Regardless of CD4, clinical stage or gestational age &quot;ART for ETV&quot;</td>
</tr>
</tbody>
</table>
| **Infant/Child** | **Mother on ARV prophylaxis:**  
  - Breastfed child - NVP 2mg / kg weight daily up to 1 week after the end of breastfeeding.  
  - Non-breastfed child - NVP 2mg / kg weight daily from birth and for 6 weeks.                                                                 | Regardless of the type of breastfeeding - NVP 2mg / kg daily birth weight and for 6 weeks.               |
Evolution of PMTCT ARV Recommendations

<table>
<thead>
<tr>
<th>Year</th>
<th>PMTCT</th>
<th>ART</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>SD NVP</td>
<td>No recommendation</td>
</tr>
<tr>
<td>2004</td>
<td>AZT from 28 wks + SD NVP</td>
<td>CD4 &lt;200</td>
</tr>
<tr>
<td>2006</td>
<td>AZT from 14wks + SdNVP + Truvada + Intrapartum AZT</td>
<td>CD4 &lt;200</td>
</tr>
<tr>
<td>2010</td>
<td>Option A (AZT + infant NVP)</td>
<td>CD4 ≤350</td>
</tr>
<tr>
<td></td>
<td>Option B (triple ARVs)</td>
<td>CD4 ≤500</td>
</tr>
<tr>
<td></td>
<td>Option B+ Moving to ART for all</td>
<td></td>
</tr>
</tbody>
</table>

Move towards: more effective ARV drugs, extending coverage throughout MTCT risk period, and ART for the mother’s health
PMTCT DRUG REGIMENS AND PERINATAL TRANSMISSION

Dr M Rabkin ICAP, Dr E Abrams MTCT-Plus
Elimination of MTCT Requires More than Just ARVs

- New Perinatal HIV Infections, 25 Countries in the Year 2015
- Virtual Elimination Goal <40,000 Perinatal Infections/Year and <5% MTCT

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Mahy M et al. Sex Trans Infect 2010;86 Suppl 2:ii48-55

Slide courtesy of Lynne Mofenson
PMTCT Strategies and Timeline

1984
- 1st case of pediatric HIV infection reported

1994
- AZT shown to decrease MTCT in the US

1999
- Short-course AZT found to decrease MTCT
- SdNVP found to decrease MTCT

2004
- AZT + sdNVP endorsed by WHO PMTCT guidelines

2010
- Programmatic considerations lead WHO to endorse options B/B+

2013
- WHO guidelines recommend PMTCT Options A and B
Policy questions for Option B+

• Review scope of practice of nurses to allow ART initiation

• ART within MCH and not just at specific OI/ART clinics to minimize delays and missed opportunities

• ART decentralization for adults and children, and moving to family centred care

• Storage and distribution of ART drugs
STAGES OF MTCT INTERVENTION

Remember that Prevention is the best step to EMTCT
STAGE 1 PRE-CONCEPTION
Case

Mr. and Mrs Kamuzi have been married for 10 yrs and have tested very year of their marriage and have tested negative throughout.

They come in today for their annual HIV test and today their results are discordant:
Mr Kamuzi is still Negative
Mrs Kamuzi Positive

Mr Kamuzi is struggling to understand these results and wants to know from you as a clinician why there’s a discrepancy in their results.....

1. How do you counsel him regarding these results?
2. 2 Months later the couple returns for pre-conception counseling. What advise to you give them.
Conception Advice for the HIV Positive Couples – Serodiscordant

- **Female HIV Positive**
- **Male HIV Negative**
  - Male partner is at risk of HIV infection from female partner
  - HAART or TasP in the female patient (NDOH 2015 Guidelines)
  - PreP for the male partner (Guideline not yet concluded)
  - Unprotected sex at time of ovulation
  - Or Artificial Insemination at home, ejaculate in condom drawn by syringe and infuse into the female in supine position
  - After infusion she lies in supine position for 10-15mins to maximise the chance of sperm swimming up and inseminating the ovum
Conception Advice for the HIV Positive Couples

- Female HIV Negative
- Male HIV Positive
  - The female is at risk of HIV infection from the male
  - Clinically assess the male partner initiated on HAART or TasP
  - PreP for the female partner
  - VL must be well suppressed in the male before conception is contemplated
  - Unprotected sex at time of ovulation
  - Or consider sperm washing with artificial insemination to eliminate the HIV transmission risk
Ante-natal Care (ANC)/PRE - NATAL
No Turn Aways

• ALL women who attend a facility for pregnancy confirmation or ANC first visit/booking MUST BE SEEN ON THAT DAY

  – No turning away

  – No booking to come back on another date

Mozambique Number of 1st ANC visits increasing
First antenatal visit - BANC

• Estimate gestational age
  – LMP
  – SPH (after 24 wks if LMP not known)
  – Palpation
  – Ultrasound (before 24 wks if LMP not known)

• Essential screening investigations
  – Syphilis serology
  – Rh group and ABO
  – Hb
  – Urine dipstick
  – Glucose
First Antenatal visit

• **Nutrition**
  – Assessment and care

  **SUPPLEMENTS**
  – Ferrous sulphate 200mg daily bd
  – Multivitamin 1 dly
  – Calcium 1000 mg daily
  – Folate 5mg daily

**Prophylaxis Malaria**

- Cotrimoxazole

**TPI – Isoniaizid**

• **Tetanus toxoid**
  – TT1 at 1st visit
  – TT2 4 weeks later
  – TT3 6 months later

• **Communicate and document**
  – BANC Checklist
  – Write in the Antenatal card
  – Fill in the Antenatal register
  – Use patient’s records
Interventions during ANC

**Goals**
- Improve quality of Maternal health

- TB screening, & IPT if eligible
- Treatment & prophylaxis for other Opportunistic Infections
HCT

• On first visit
• Include partners and children
• Multidisciplinary Team (MDT): Include all staff members
• Integrated care
Offer HCT: Two possible HIV tests

- Patients presenting at ANC
- HCT
- HIV Negative
- HIV Positive
HIV Testing

- ALL women to be counselled and tested for HIV at their first visit
- HIV negative women will be re-tested regularly
- HIV positive women must be counselled and initiated on ART ON THE SAME DAY
If HIV negative:

**Wellness advice**

- Educate how to stay negative
- Male partner to be offered HCT and must be involved
- All ANC clients who test HIV negative during pregnancy to repeat test every 3 months.
Re-testing HIV negative Women (1)

WHEN? (BEFORE)

• ALL HIV-negative women must be re-tested:
  • 3 monthly during pregnancy
  • At labour/delivery
    – No matter when last tested
  • At 6 week EPI visit
    – Requires integration of MOTHER-BABY PAIR management into EPI clinics
  • 3 monthly during breastfeeding
Re-testing HIV negative Women (1)

WHEN? *(NDOH 2015 HCT)*

<table>
<thead>
<tr>
<th>When</th>
<th>Who</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnant women</td>
<td>At every visit throughout pregnancy and at labour/delivery</td>
</tr>
</tbody>
</table>
| Breastfeeding women (to detect HIV sero-conversion) | At every visit throughout pregnancy and at labour/delivery  
|                               | » At every EPI visit                                                 |
|                               | » Every 3 months throughout breastfeeding                            |
| HIV exposed babies            | At birth, every EPI visit, 18 months.                                |
| Adolescents                   | 6-12 months if sexually active or  
|                               | » more frequently if they have a new sexual partner or if having unprotected sexual intercourse. |
| If exposed to HIV (adults and adolescents) | After 4-6 weeks for window period                                    |
| Key populations               | Every 3 months                                                       |
Re-testing HIV negative Women (2) 

WHY?

• HIV negative women may seroconvert at any point during pregnancy/breastfeeding
• During seroconversion viral load is incredibly high
• High viral load = higher risk of MTCT
• EMTCT relies on:
  1. Identifying maternal seroconversions
  2. Initiating newly infected mothers on ART
  3. Providing infants with appropriate prophylaxis
WHY RE-TEST?
# Seroconversion incidence in pregnancy

<table>
<thead>
<tr>
<th>Country</th>
<th>Reference</th>
<th>Incidence per 100 Pt-Yrs Pregnancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Botswana</td>
<td>Lu L et al. 2009 CROI Abs.94LB</td>
<td>1.3 (0.5-3.1)</td>
</tr>
<tr>
<td>Zimbabwe, Uganda</td>
<td>Morrison CS et al. AIDS 2007;21:1027</td>
<td>1.6</td>
</tr>
<tr>
<td>South Africa</td>
<td>Rehle T et al. S Afr Med J 2007;97:194</td>
<td>5.2 (0-12.9)</td>
</tr>
<tr>
<td>South Africa</td>
<td>Moodley D et al. AIDS 2009;23:1255</td>
<td>10.7 (8.2-13.1)</td>
</tr>
</tbody>
</table>

Adapted from Lynne M. Mofenson
43% of New Infant Infections in Botswana May be Due to Maternal Seroconversion in Pregnancy/PP

Lu L et al. 16th CROI, Montreal, Canada Feb 2009 Abs 94LB

<table>
<thead>
<tr>
<th></th>
<th>HIV diagnosed before or during ANC</th>
<th>New maternal infection late pregnancy</th>
<th>New maternal infection 1 yr postpartum</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong># HIV+ women</strong></td>
<td>13,952</td>
<td>378 (incidence 1.3%)</td>
<td>450 (incidence 1.8%)</td>
</tr>
<tr>
<td><strong>Estimated MTCT rate</strong></td>
<td>4.7%</td>
<td>73%</td>
<td>36%</td>
</tr>
<tr>
<td><strong># infected infants</strong></td>
<td>620</td>
<td>276</td>
<td>186</td>
</tr>
</tbody>
</table>

Of the estimated 1,082 infant HIV infections in Botswana in 2007, 462 (43%) were due to incident cases of maternal HIV in pregnancy/PP.
Re-testing HIV negative Women (3)

WHAT ELSE TO REMEMBER?

• ALL HIV negative women must be repeatedly counselled about HIV PREVENTION
• Consistent condom use
  – Particularly important during pregnancy when risk of HIV acquisition is increased
• Testing of male partner
  – If positive – establish if eligible for ART (CD4<500)
• This is PRONG 1: PRIMARY PREVENTION OF HIV
  – So often forgotten!

• TB screening at every visit
If HIV Positive Test

- If positive and confirmed positive with 2\textsuperscript{nd} rapid test kit
  - Post-test counselling
  - Baseline bloods (CD4, Creatinine)
  - Initiate ART with the FDC on the same day regardless of CD4 cell count or gestational age.
  - Do not wait for blood results to initiate!
  - Give client an appointment to return within 7 days for CD4 and Creatinine results
HIV positive women (2)

Counselling

• Post-test counselling

• A lot to take in:
  – New diagnosis
  – Risk of MTCT
  – Need for lifelong ART and high level adherence
  – Importance of retention in care

• Counselling is a process: topics should be re-visited at subsequent ANC & PNC visits
Mrs NM is a 33yr old lady who presents at the ANC clinic for her booking visit. She is 24 weeks pregnant by dates, and has recently arrived in Mozambique from Zimbabwe. Her vitals are normal, and clinical examination is unremarkable with a

- HOF 22cm.

Mrs NM is found to be
- HIV positive

How would you manage her at this visit?
- **CD4 count is 280.** Her
- **Creatinine is 57 µmol/**(eGFR >6) *(Is this reliable?) her
- **Hb is 12,3g/dl, and her**
- **ALT is 35 /l.**
HIV Positive First antenatal Visit

- **Full history**
  - Current and previous pregnancies
  - Medical, familial conditions, allergies, medications
  - Use of alcohol and substances
  - UTI and STI symptoms
  - Cough and TB contact

- **General examination**
  - Weight
  - *Mid Upper arm Circumference*
    - < 23 cm Under nutrition
    - > 33 cm Obesity
  - Blood Pressure

- **Systemic examination**
  - Skin, Mucous membranes
  - Respiratory and CVS
  - Breasts, thyroid
HIV positive women (3)

Baseline Work-up

• Clinical examination (WHO staging)
• Screen for active psychiatric illness
• Bloods: Creatinine and CD4
• Follow-up in 1 week for these blood results

All women, regardless of HIV status:
• TB and STI screen
• BANC: Hb, RPR/rapid TPHA, Rh, Urine dipstix, micronutrients
• Register on Momconnect

INITIATE FDC (TDF/FTC(3TC)/EFV ON SAME DAY
Subsequent Antenatal Care

- Monitor nutrition
  - Weight
  - MUAC
- Look for Ois
- Stage at each visit

- Refer/consult if
  - Clinical deterioration
  - Other reason
If Mrs M has urine dipstick that shows 2+ Proteins would you manage her any differently?
Contraindications to FDC (1)

Suspected/Known Renal Dysfunction

- TDF associated with renal toxicity
- DO NOT initiate FDC same day if:
  - Diabetes or hypertension
  - Previous kidney condition requiring hospitalization (excluding UTI)
  - ≥ 2+ proteinuria on urine dipstix
- Send creatinine
- Initiate AZT 300mg bd SAME DAY
  - As long as Hb ≥ 7g/dl
Contraindications to FDC (2)
Suspected/Known Renal Dysfunction

• Review in 1 week
  – Creatinine normal: INITIATE FDC
  – Creatinine ≥ 85 μmol/L = HIGH RISK PREGNANCY
    • Continue AZT 300mg bd
    • Urgently REFER (or telephonically consult):
      – Initiation of alternative lifelong triple drug regimen, including
dose adjustment (usually ABC, 3TC, EFV)
      – Investigation & management of renal disease

• Remember to work up those with ≥2+
proteinuria according to local protocols
If Mrs M had come with Normal Dipstick and a PCr of 57umol and you initiated her on FDC. 3 months later her PCr comes back as follows:

**INITIAL RESULT**

<table>
<thead>
<tr>
<th>CHEMISTRY TESTS</th>
<th>Flags</th>
<th>RefInterval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creatinine</td>
<td></td>
<td>49 – 90 ml/min/1.73m²</td>
</tr>
<tr>
<td>MDRD eGFR</td>
<td></td>
<td>&gt; 60</td>
</tr>
</tbody>
</table>

**FOLLOW UP RESULT**

<table>
<thead>
<tr>
<th>CHEMISTRY TESTS</th>
<th>Flags</th>
<th>RefInterval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creatinine</td>
<td>H</td>
<td>64 – 104 ml/min/1.73m²</td>
</tr>
<tr>
<td>MDRD eGFR</td>
<td></td>
<td>50</td>
</tr>
</tbody>
</table>

**HOW WOULD YOU MANAGE MRS M?**
Contraindications to FDC (3)
Suspected/Known Renal Dysfunction

• IF woman initiated on FDC at first visit and Creatinine $\geq 85 \, \mu\text{mol/L}$ at review
• STOP FDC
• START AZT 300mg bd (if Hb $\geq 7\, \text{g/dl}$)
• Urgently refer/discuss telephonically or manage by single drug alteration.
What if there is renal Impairment?

Creatinine >85umol/l

Use a renal friendly regimen

Life long ART: ABC+3TC+EFV

AZT+3TC+EFV (If ABC contraindicated)
HIV positive women (4)

ART Initiation

• Initiate FDC (TDF/FTC/EFV) SAME DAY unless:
  1. Concern about abnormal renal function
  2. ACTIVE psychiatric illness
  3. Newly diagnosed TB or high suspicion of active TB

• All women with contraindication to FDC initiation must receive AZT 300mg bd at their first visit

• No women leaves her first ANC visit without any ARV cover for PMTCT

• Arrange follow-up visit in ONE WEEK (blood results)
# First-Line Regimens (Preferred ARV Regimens)

<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 or 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>
<td></td>
</tr>
</tbody>
</table>

**Summary of Changes in Recommendations:**

- **What to Start in Adults**
  - For HIV+ ARV-NAIVE ADULTS, the 2013 ART Guidelines recommend TDF + 3TC (or FTC) + EFV, which is considered to have strong, moderate-quality evidence.
If Mrs M during her consultation kept calling you “Grandmother” and kept correcting you that she is in fact Michelle Obama, how would you manage her if there were no other abnormalities?
Contraindications to FDC (4)

Active Psychiatric Illness

- If a woman has ACTIVE/UNTREATED psychiatric disorder:
  - DO NOT initiate FDC
  - Provide AZT 300mg bd (if Hb ≥ 7g/dl)

- **HIGH RISK PREGNANCY**
- Urgently refer/discuss telephonically
  - Initiation of alternative lifelong triple drug regimen (NVP or LPV/r, dependant on CD4 count, plus TDF and 3TC)
  - Optimise management of psychiatric disorder

- **ACTIVE psychiatric illness DOES NOT INCLUDE**
  - Depression
  - Anxiety
  - Known psychiatric patient well controlled/asymptomatic on treatment
If on history Mrs M Screens TB positive how would you manage her today if she had no Psychiatric diagnosis and her Renal function was normal?
TB (1)
Screening

• Screen EVERY woman, regardless of HIV status, at EVERY visit for TB
• Most HIV infected pregnant women die from respiratory complications due to TB, PCP and community acquired pneumonia

• *Search for and treat lung infections aggressively*
Screen for TB

• Active TB disease is common in women living with HIV.
• All pregnant women should be actively screened for TB symptoms.
• If an HIV positive patient has symptoms suggestive of TB, a sputum specimen must be collected for AFB, GeneXpert testing, and the TB Xpert diagnostic algorithm followed.
• Although it is important to investigate patients for TB before starting ART, in most pregnant patients, initiation of ART prophylaxis or lifelong treatment should not be delayed for TB investigations.
• The healthcare provider should suspect TB in a woman living with HIV if any of the following 4 symptoms are present:
  – Current cough of any duration.
  – Fever
  – Night sweats
  – Weight loss or poor weight gain

• Any woman living with HIV who has none of these symptoms can be considered for eligibility for isoniazid preventive therapy by performing a tuberculin skin test.
TB (2)

TB Screen Negative = IPT

• Negative TB screen (NO cough, fever, night sweats, weight loss/failure to gain weight)

• START IPT and pyridoxine

<table>
<thead>
<tr>
<th>POPULATION</th>
<th>Duration of IPT</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnant/breastfeeding HIV positive women</td>
<td>Tuberculin Sensitivity Test (TST) positive: 36 months</td>
<td>All should be on lifelong ART</td>
</tr>
<tr>
<td></td>
<td>TST negative: 12 months</td>
<td>IPT can be started anytime during pregnancy/breastfeeding, but ART should be started first and IPT added after a minimum of 1 month</td>
</tr>
<tr>
<td></td>
<td>TST not available: 12 months</td>
<td>Woman who fall pregnant on IPT should continue IPT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If TST negative, re-assess TST status 1 year after completing IPT</td>
</tr>
</tbody>
</table>

• Contraindications to IPT as per adult guidelines
TB (3)

• If, at first visit, TB screen suggests active TB disease
  – DO NOT START FDC
  – Provide AZT 300mg bd (if Hb ≥ 7g/dl)
  – Follow TB investigation protocol (GeneXpert etc)
TB (4)

TB/HIV Co-Infection Confirmed

• Continue AZT for 2 weeks
• Initiate TB treatment and notify
• Review patient in 2 weeks
  — STOP AZT
  — START FDC
• Counsel and monitor patient for Immune Reconstitution Inflammatory Syndrome (IRIS)
  — Woman should be followed-up more closely
  — Encourage woman to return to facility if condition deteriorates
• Record that infant must have BIRTH HIV PCR
TB (5)
TB Excluded

- Switch from AZT to FDC
- In one month, screen for TB again
- If TB screen negative consider initiating INH Prophylactic Therapy (IPT) and pyridoxine
RECAP:

HIV-positive not on ART (known and newly diagnosed)
History and clinical assessment including for TB screening and WHO staging
Blood specimens sent for creatinine and CD4 cell count

If no active psychiatric illness or history of renal disease
Start FDC on the same day
Return in 1 week to review results

If history of renal disease or active psychiatric illness:
the woman has a high risk pregnancy and needs urgent referral
If Hb ≥ 7 g/dL, start AZT 300mg bd

1 week later:
Review results of CD4 cell count, serum creatinine

If serum creatinine ≤ 85μmol/L:
Continue FDC lifelong

If serum creatinine > 85μmol/L: the woman has a high risk pregnancy and needs urgent referral
If Hb ≥ 7 g/dL, start AZT 300mg bd and stop the FDC
(Will require individual agents for ART and investigation for renal compromise)

Check CD4 count

If CD4 < 100:
Send cryptococcal latex antigen test
Case Study

- Would you give Cotrimoxazole Preventive Therapy (CPT) in this clinical scenario?
  - Is she eligible for CPT?
  - When will you stop the CPT?
If her CD4 was 35 would you be concerned about anything on her first ANC visit?
Fluconazole Preventive Therapy (FPT)?

UPDATE OF GUIDELINES
Cryptococcal antigen screening when CD4+ T-lymphocyte count <100 cells/μl

NEGATIVE
Initiate ART
No fluconazole

POSITIVE

Contact patient for urgent follow-up
Screen for symptoms of meningitis
Check for special situations

Symptomatic
Start fluconazole 1200 mg daily and refer immediately for lumbar puncture

Lumbar puncture (+)
Amphotericin B plus fluconazole
800 mg daily for 2 weeks in hospital

Lumbar puncture (-)
Fluconazole 800 mg daily for 2 weeks as outpatient

Fluconazole 400 mg daily for 2 months then 200 mg daily
Continue fluconazole for minimum of 1 year in total and discontinue when patient has had two CD4 counts >200 taken at least 6 months apart

Asymptomatic

A lumbar puncture may be considered if available.

Special situations include:
- Prior cryptococcal meningitis
- Pregnancy or breastfeeding mothers
- Clinical liver disease

Start ART after 4-6 weeks of antifungal therapy
Start ART after 2 weeks of antifungal therapy

Pregnant Adolescents

- ≤19 years
- >40kg – initiate FDC
- <40kg – initiate TDF 300mg daily, 3TC 300mg daily and EFV 400mg daily

- Provide intensive adherence support
- Youth friendly services essential
- Refer to support group/ensure CHW follow-up
Definitions

• Child - < 10 yrs
• Adolescent 10 -19ys (inclusive)
• Adult > 19yrs

• For the purposes of ART treatment – Adolescents <15 yrs or <40kgs follow the pediatric regimens

NB FDA has been approved use of TDF in >12yr old , > 35kg
Monitoring During Pregnancy and Breastfeeding

• VIRAL LOAD
• VIRAL LOAD
• VIRAL LOAD
Tina 25 year old, @ 20/40 started HAART 2 years ago, presents for the first ANC visit. Her last annual VL done 6 months ago is <50cp/ml.

Would you do a viral load today?
Viral Load Monitoring (1)

Woman Already on ART ≥3 months and Conceives

- **Viral Load** to be repeated **ON THE DAY OF PREGNANCY CONFIRMATION**
  - Regardless of when last done
  - Need to know this woman is virally suppressed
- Review result within **TWO WEEKS**
- If virally suppressed:
  - Continue on current regimen
  - If on first line single ART agents with no contraindications (check creatinine) – Switch to FDC (TDF/FTC/EFV)
- Provide adherence counselling including educating about the link between viral load and the risk of MTCT and safety of ART in pregnancy.
RECAP

Woman on ART with confirmed pregnancy

Perform viral load at the same visit (irrespective of when last done)
Emphasise importance of adherence

Review viral load result within 2 weeks

Viral load <1000 copies/ml
Continue current ART regimen
(if appropriate, switch from 3 individual ARVs to FDC to allow integrated follow up at local ANC clinic)

Viral load undetectable or ≥1 log drop in viral load

Viral load >1000 copies/ml
Provide comprehensive adherence counselling

Repeat viral load one month after initial test

Review repeat viral load result

Viral load unchanged OR <1 log drop OR increased
Switch to second line regimen as per adult ART guidelines

Infant requires prophylaxis with AZT plus NVP and birth PCR testing
For Mrs M whom you initiated yourself, if you had access to doing V/L how soon would you repeat it after initiation of FDC?
Viral Load Monitoring (2)
Woman Newly Initiated on ART

• First viral load will be done **THREE MONTHS** after ART INITIATION
• Review results within **TWO WEEKS**
• We need to know this woman is suppressing on ART
What action would you take if ...

1. V/L < 50 copies?

1. V/L = 800 for the first time?

1. V/L = 12,000 for the first time?
Viral Load Monitoring (3)
If Viral Load is < 1000 copies /ml

• Repeat Viral Load SIX MONTHLY:
  – 6 months on ART
  – 12 months on ART
  – 18 months on ART
  – 24 months on ART

• All viral load results should be reviewed within TWO WEEKS
• If concerns about poor adherence repeat viral load, regardless of when last done
• Women will return to annual viral load monitoring once she has stopped breastfeeding and is enrolled in standard adult ART care
Viral Load Monitoring (4)

Women with Viral Load >1000 copies/ml

- Intensive adherence counselling
- Repeat Viral Load after ONE MONTH PLUS
  - Hep B sAg
  - Hb/Creatinine (depending on predicted 2\textsuperscript{nd} line regimen)

- Viral load undetectable OR ≥1 log drop
  - Continue with current ART regimen
  - Monitor adherence closely
  - Repeat viral load in 6 months, or sooner if concerns about adherence
Viral Load unchanged, increased or ≤ 1 log drop

- Switch to 2nd line
  - Regimen as per adult guidelines
- CHECK HEPATITIS B sAg result BEFORE switch
  - Hep B neg = 3 drug 2\textsuperscript{nd} line regimen
  - Hep B pos = 4 drug 2\textsuperscript{nd} line regimen INCLUDING TDF
    - Infant to receive Hep B immunoglobulin and Hep B immunisation at birth

Refer/discuss telephonically if woman already on 2\textsuperscript{nd}/3\textsuperscript{rd} line regimen or you are unsure what to do
Explaining the log drop (1)

Viral Load 1

VIRAL LOAD
HIV: Viral Load ............... 433,375 RNA cps/ml
Log Value ...................... 5.64
Assay name ...................... Roche CAP/CTM V2

Viral Load 2

VIRAL LOAD
HIV: Viral Load ............... 95,500 RNA cps/ml
Log Value ...................... 3.98
Assay name ...................... Roche CAP/CTM V2
Explaining the log drop (2)

Viral Load 1

HIV INVESTIGATION
HIV: Viral Load .................. 967481 RNA cps/ml
Log Value ...................... 5.99
Assay name .................... Roche CAP/CTM V2

Viral Load 2

HIV INVESTIGATION
HIV: Viral Load .................. 27015 RNA cps/ml
Log Value ...................... 4.43
Assay name .................... Roche CAP/CTM V2

93
Explaining the log drop (3)

Viral Load 1

HIV INVESTIGATION
HIV: Viral Load ............... 127182 RNA cps/ml
Log Value ..................... 5.10
Assay name .................. Roche CAP/CTM V2

Viral Load 2

HIV INVESTIGATION
HIV: Viral Load ............... 88726 RNA cps/ml
Log Value ..................... 4.95
Assay name .................. Roche CAP/CTM V2
Explaining the log drop (4)

Viral Load 1

HIV INVESTIGATION
HIV: Viral Load .................... 5373 RNA cps/ml
Log Value ....................... 3.73
Assay name ...................... Roche CAP/CTM V2

Viral Load 2

HIV INVESTIGATION
HIV: Viral Load .................... 1618 RNA cps/ml
Log Value ....................... 3.21
Assay name ...................... Roche CAP/CTM V2
**RECAP**

**HIV+ woman already on ART and pregnant**
- VL at first ANC visit
- Review VL within 2 weeks
- **VL <1000**
  - Repeat VL every 6 months throughout pregnancy and breastfeeding
  - Manage as possible treatment failure; repeat VL in ONE MONTH
- **VL >1000**

**Pregnant HIV+ woman not yet on ART/newly diagnosed HIV+**
- Initiate FDC same day
- VL at three months on ART
- **VL <1000**
  - Repeat VL at 6 months on ART
  - **VL <1000**
  - Repeat VL every 6 months throughout pregnancy and breastfeeding
  - Manage as possible treatment failure; repeat VL in ONE MONTH
- **VL >1000**
Other Monitoring

• Unchanged
• Creatinine: 3, 6, 12 months and annually
• CD4: baseline, 12 months, not again
  – WHY when all start ART regardless of CD4?
    • If CD4 < 200 start Co-trimoxazole
      – Or if WHO stage 2, 3 or 4 disease
    • If CD4 < 100 send Cryptococcal latex antigen and follow available protocol and refer if screen positive
Psychosocial Support and Adherence Counselling

• Essential component of PMTCT program
• Counselling needs to be provided at every visit
• Identify women at higher risk for poor adherence - provide enhanced support
  – e.g. adolescents, depressed, substance abuse, lack of social support, gender-based violence, taking ART for PMTCT rather than her own health, food insecurity
  ……
• Educate women about availability of child care grant
Case 4

• Lebo has not had any antenatal care.
• She is 38 weeks pregnant and is starting to have contractions.
• She asks her mother to take her to the nearest health facility.

You are the Dr on Call in Labour Ward, all the nurses are on strike how would you manage the patient?
1. How would you manage Lebo on admission and Intrapartum?
2. How would manage Lebo Immediately Post Partum?
3. How would you manage Lebo’s Baby in the 1st 12 weeks of life?
Labour and Delivery

- HIV negative
  - Repeat HIV test
    - Regardless of when last done

- HIV status unknown
  - Counsel and provide HIV test

- HIV positive on ART
  - Continue ART with usual timing
• If HIV Unknown Status in labour or last negative test <32 weeks or >3 months ago;

• Offer HIV counselling and testing whilst in labour for the benefit of mum and baby
Newly Diagnosed HIV Positive:
Unbooked women & previously HIV negative

• In-labour management:
  – Stat sd NVP
  – Stat sdTruvada (FTC/TDF)
  – 3 hourly AZT

• FDC dispensed before discharge to start the following day
  • Counselling and adherence support
  • Take CD4 and Creatinine
  • Review results at 3-6 day post-natal visit

Baby:
• Birth PCR
• 12 weeks NVP
• 6 weeks AZT
• Repeat PCR at 18 weeks
“Covering the tail”

Mono therapy predisposes for development of drug resistance

Triple therapy protects against development of drug resistance
Manage labour appropriately

Primary HIV Prevention

Pregnancy

Labour & Delivery

[Image of a baby being held, representing the third stage of labour and delivery.]
Vaginal Route: During Labor and Delivery

Practice safe delivery techniques and practices as far as possible

- Reduce invasive monitoring procedures
- Delay rupturing of membranes (ROM)
- Minimal digital examinations (PV) after
- Cleanse the vagina with hibitane
- Reduce use of forceps or vacuum
- Reduce use of episiotomy
- Elective caesarean section – depends

Minimise exposure of new born to maternal blood and body fluids.
Puerperium

• Continue prophylactic antibiotics for 48 hours, higher risk of puerperal sepsis

Puerperal sepsis

• Mild (temp < 37.5, HR < 100)
  – Amoxicil 500 mg tds and Metronidazole 400mg tds
  – If HIV positive and not improving treat as severe

• Severe (temp > 37.5, HR > 100)
  – Ampicillin 1 g IV, Genta 240 mg IV, Metronidazole 1g Sup bd
  – If not improving in 48 hours, look for Ol’s, change treatment, refer
Postpartum Routine before discharge

• Vitals and general
• Passing urine and dipstix
• Uterus contracted and non tender
• Vaginal bleeding and perineum
• Signs of infection
• Breast condition
• Nutrition
• Anaemia and Hb
• Contraception
• Follow up at 3 days and 6 weeks
Contraception

Current knowledge

• Continue to use hormonal contraceptives in HIV infected women (Avoid Oestrogen based Methods – Combined)

• Continue using Progesterone Injectables

• Continue to insert IUDs in HIV infected women but not for women at individual high risk for STIs

• Implants contra-indicated

• Promote dual method use and promote male and female condoms for dual protection
Case

- 34 year old Refilwe
- HIV Negative in pregnancy: had 4 rapid tests all were HIV Negative
- At 6 weeks the baby was unwell running a low grade fever and coughing
- The baby recovered well with a course of antibiotics and Panado
- The HIV DNA PCR done at 6 weeks on the baby was negative
- She comes through for her EPI visit at 14 week post partum
- She is breastfeeding and the baby is growing well,

- You offer HIV testing and the HIV test is positive
- She is alarmed why the HIV test is positive

Question:
  How do you manage this case scenario?
Any postnatal visit >72 hours after delivery and mother newly diagnosed HIV-positive:
History and clinical assessment including TB screening and WHO staging, bloods sent for creatinine and CD4 cell count
See Figure 1 for further management of mother

Infant HIV PCR

If the infant is currently being breastfed or stopped breastfeeding less than a week previously
Provide AZT and NVP until PCR result available, ideally 7 days later. If infant >6 weeks old, start co-trimoxazole syrup

Infant PCR negative
- Continue NVP for a total of 12 weeks
- Stop AZT

Infant PCR positive
- Confirm with a second PCR
- Stop NVP and AZT
- Initiate ART while waiting for the confirmatory PCR result

Infant >10 weeks old
- Do PCR 4 weeks after NVP stops
- Repeat PCR 6 weeks after breastfeeding cessation
- 18 months rapid test
- Test at any time if symptomatic with age-appropriate test

Infant <10 weeks old
- Do PCR at 10 weeks
- Repeat PCR 6 weeks from last breastfeeding exposure, if ever breastfed
- 18 months rapid test
- Test at any time if symptomatic, with age-appropriate test

Infant never breastfed or breastfeeding stopped more than a week previously
Do not provide infant with ART post exposure prophylaxis as >72 hours since delivery

Infant PCR negative
- Confirm with a second PCR
- Start cotrimoxazole
- Initiate ART while waiting for the confirmatory PCR result

Infant PCR positive
- Confirm with a second PCR
- Start cotrimoxazole
- Initiate ART while waiting for the confirmatory PCR result
POSTPARTUM CARE
HIV issues

If Neg – repeat test
If on ARV treatment
   – Prescribe enough for 1 month
WHO stage
Repeat CD4 count
Infant feeding support
Breast care

• MVT 1 bd
• Ferrous sulphate 1 bd
• Vitamin A 200 000iu
• Amoxil 5 days
• Metronidazole 5 days
Postpartum care: 6 weeks

- Nutrition
- WHO Stage
- CD4 count result
- Feeding choice, method, breast problems
- Contraception – Dual
- Test partners
- PAP smear if not done in last year

- ACTIVE TRANSITION TO WELLNESS CARE OR ARV CLINIC
After Delivery, Before Discharge

• Dispense minimum 8 weeks ART to mother
• Ensure mother understands about:
  – ART adherence
  – Infant prophylaxis dosage and adherence
  – Exclusive breastfeeding
  – Where and when to follow-up for herself plus her infant
• Discuss/offer contraception
• Clearly document management plan for mother-baby pair in RTHB
Routine EPI/IMCI Visits: The MOTHER

- Reinforce maternal adherence/offer HIV test
- Routine monitoring and follow up results
  - Viral load, creatinine, CD4
- TB screen
- Support infant feeding
- Ensure woman has been offered/started on contraception (as per guidelines)
  - PRONG 2 of PMTCT often overlooked – prevent unplanned pregnancies
- Check pap smear has been done, from 6 weeks post-delivery
- Nutritional assessment
Continuity of Care

- Women move between numerous facilities during their PMTCT journey
- Always educate them about the next step
- Provide clear written documentation for them to take to the next facility including details about:
  - If HIV positive: treatment initiation date, ART regimen, latest monitoring results, adherence history, management plan for mother and baby
  - If HIV negative: date of last HIV test

Always keep patient contact details up to date
LINKAGE TO CARE

AVOIDING THE WEAKEST LINK:

- Patient Education
- Patient Empowerment
- Patient Encouragement
- Comprehensive ART information recorded on Health Record or Transfer Letter
- Phone the other facility if in doubt about patient history

ANC Clinic

MOU/Delivery facility
PMTCT: The Road Ahead

Which road are mothers and babies travelling in your facilities?
OBRIGADA