

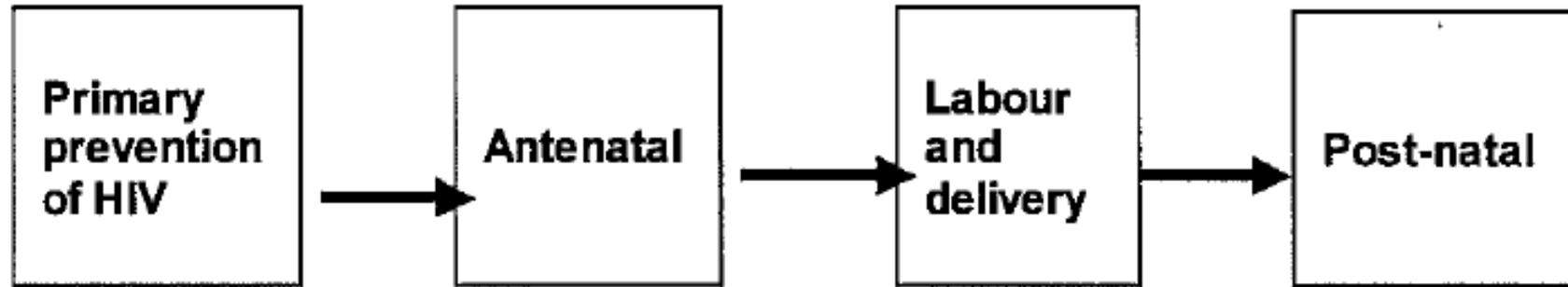
Antenatal Care

April 2008



THE FOUR STAGES OF PMTCT INTERVENTION OUTLINED IN THE GUIDELINE ARE AS FOLLOWS:

Figure 1: Four stages of PMTCT





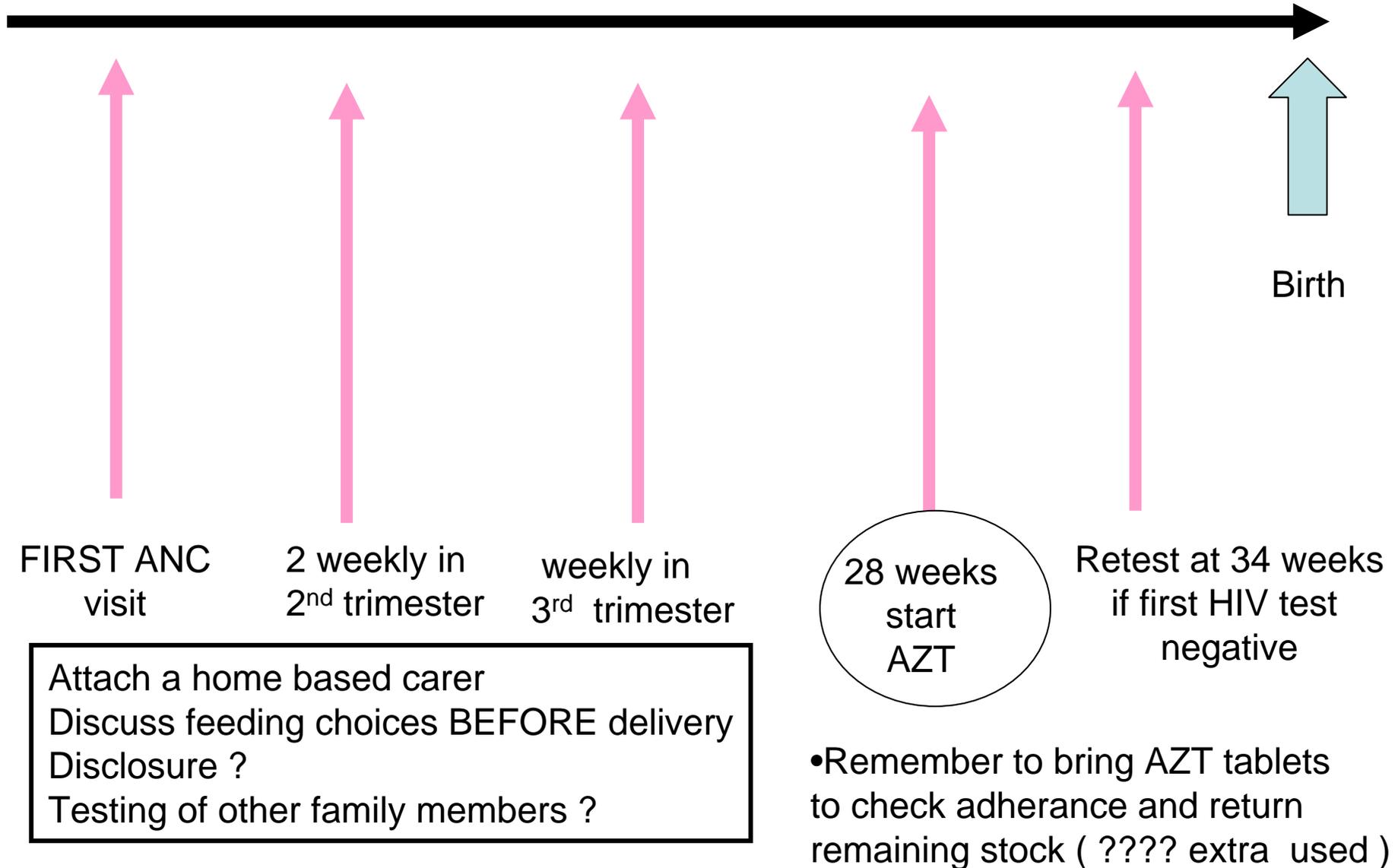
SOUTH AFRICANS AND AMERICANS
BY PARTNERSHIP TO FIGHT HIV/AIDS



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CARE OF WOMAN DURING PREGNANCY

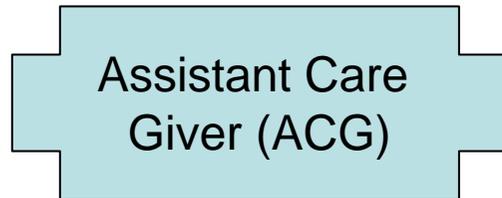
Time



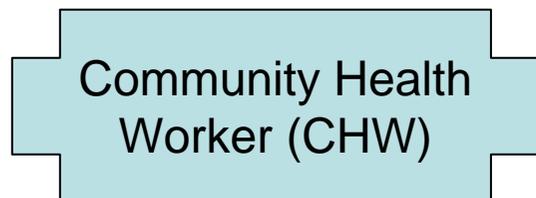
Counselling

- the use of lay counsellors as an innovative solution to the shortage of health care workers in high-burden countries has been shown to alleviate the workload of health-care providers
→ to achieve good HIV testing rates and increase coverage of PMTCT programmes
- *Community Adherence and Access (CAA) Services* → Patient Advocates (P.A.s)
- *Child Services (CS) and Grant Access Strategies (GAS)* - work with South African Social Security Agency (SASSA) and Dept of Home Affairs. It is hoped that new social
- auxillary workers will fill a much
- needed gap.

CAA – SA Models of Care



KZN – health promoter in the field

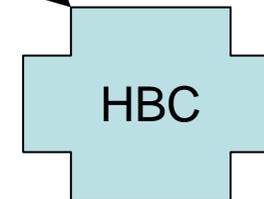


EC - % of time in a facility for VCT and counselling and % of time in the community

Community workers ratio of 1:100



WC – vertical, not sustainable



Community Health workers – KZN

April 2008

TB tracers or DOT Supporters

1

voluntary

2

Home based carers
HBC

3

Community development Workers
-from the municipalities
-only in some areas

attached to local NGO
-do Hospice work
-only assist family with bathing and feeding

4

Community Health worker (**CHW**) who is a Health promoter; do home visits and Education on STIs, TB, HIV. Were managed by an NGO Valley Trust → now By Progressive Primary Health Care of KZN

5

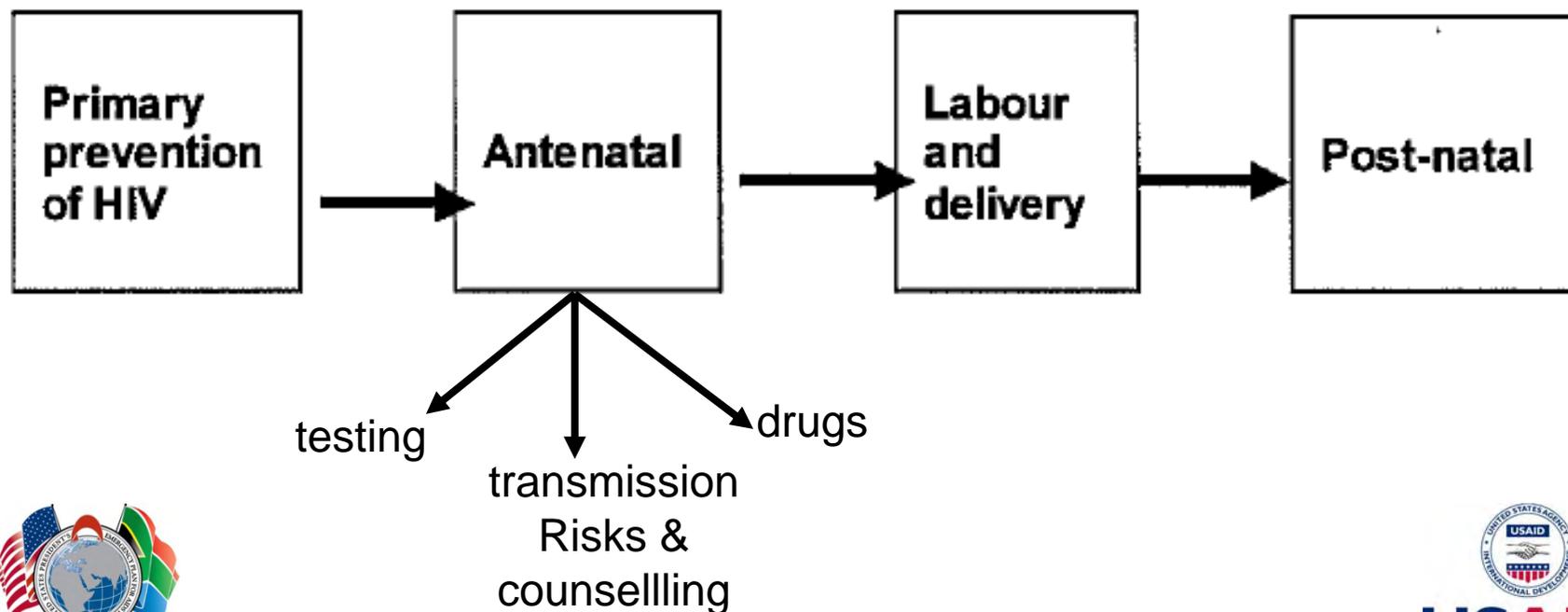
Youth ambassadors (NEW in 2008)
Tackle youth issues such as drugs, STIs and pregnancy

1 + 2 are used to train and become assistant care givers (ACG). They will eventually be absorbed into home community based care.

3 falls under a new name of Home Community Based care (HCBC) which is a sub-directorate of PHC(DoH).

THE FOUR STAGES OF PMTCT INTERVENTION OUTLINED IN THE GUIDELINE ARE AS FOLLOWS:

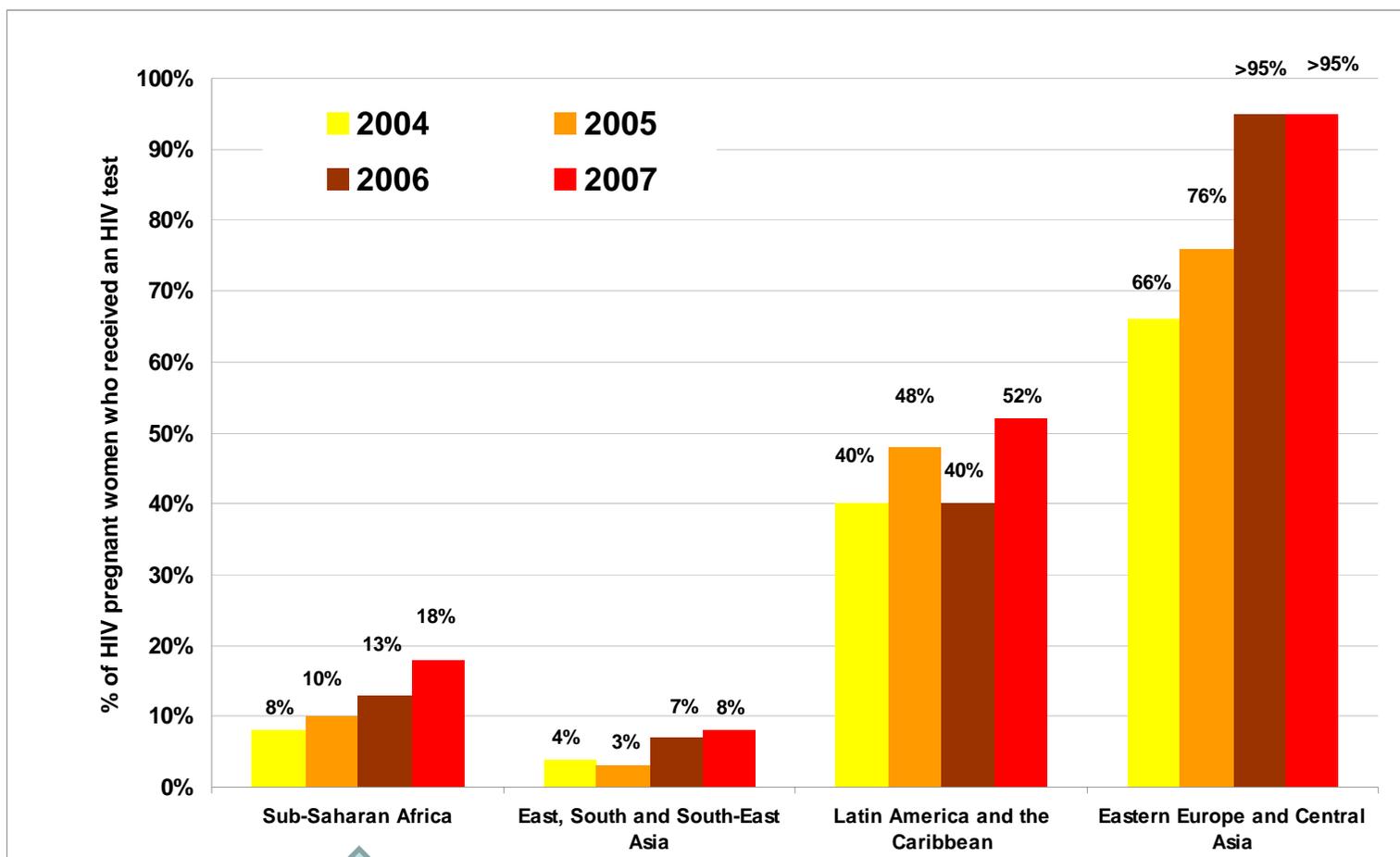
Figure 1: Four stages of PMTCT



National Guidelines February
2008 PMTCT



Percentage of pregnant women in low- and middle-income countries receiving an HIV test (2004-2007)

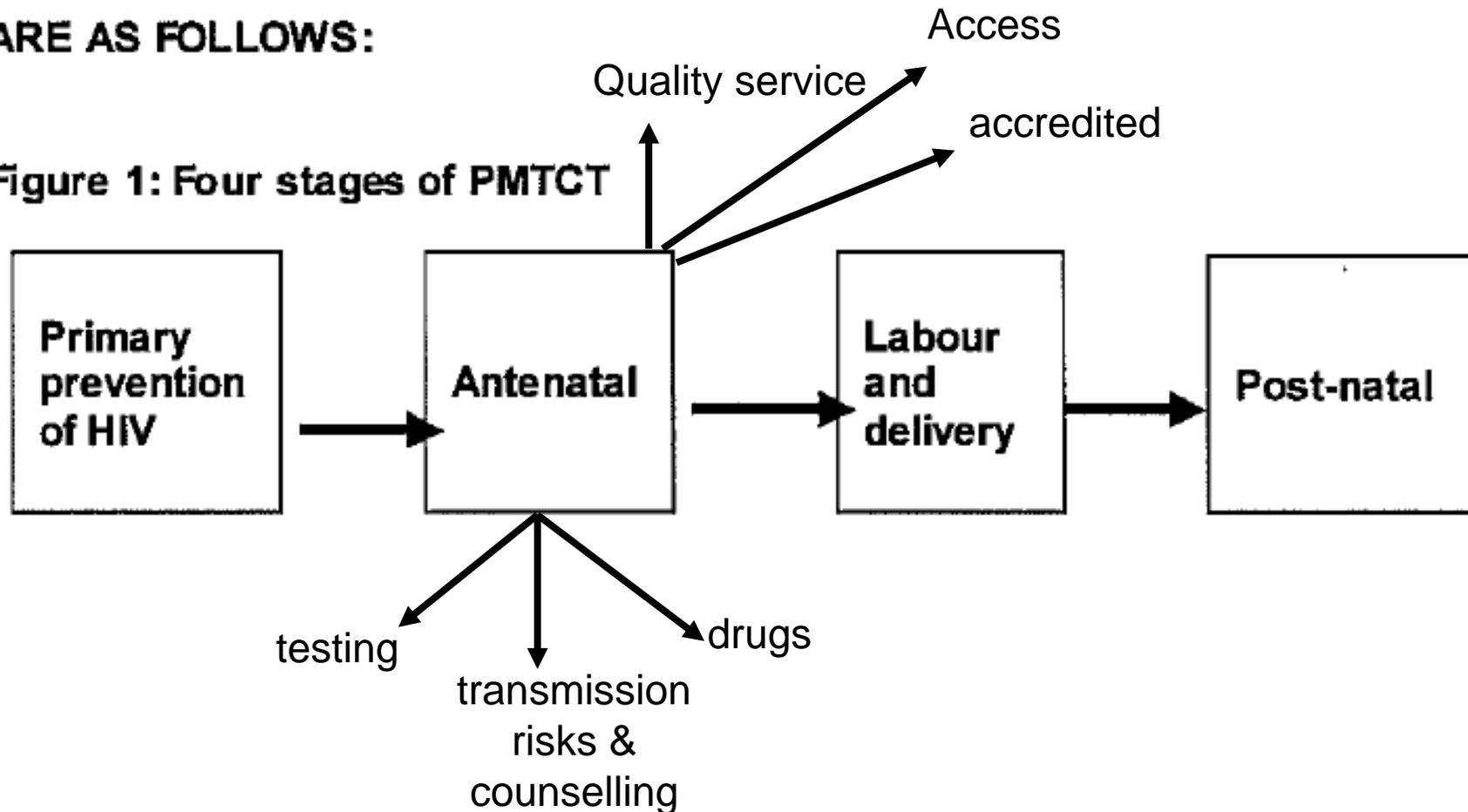


Source: Universal Access Report, 2007

Prevention of HIV infection in pregnant women, mothers and their children 2008

THE FOUR STAGES OF PMTCT INTERVENTION OUTLINED IN THE GUIDELINE ARE AS FOLLOWS:

Figure 1: Four stages of PMTCT



Clinic basic services – audit gaps

- PAP facilities
- Scale, haemoglobinometer (HB meter)
- Blood pressure
- Urine (dipstix)
- Gloves
- Space
- Privacy / counselling area
- Maternity services geographically *close to Child services*#

cf. ARV clinic and TB services

IMCI = Integrated Management of Child illnesses



HIV testing

- explain to ALL pregnant mothers that blood tests will be routinely done to :
 - check if mother has any problems that can affect her unborn baby
 - check mother's blood to see if there are any conditions that will negatively affect her own health
 - at this point she has the right to opt out of an HIV test

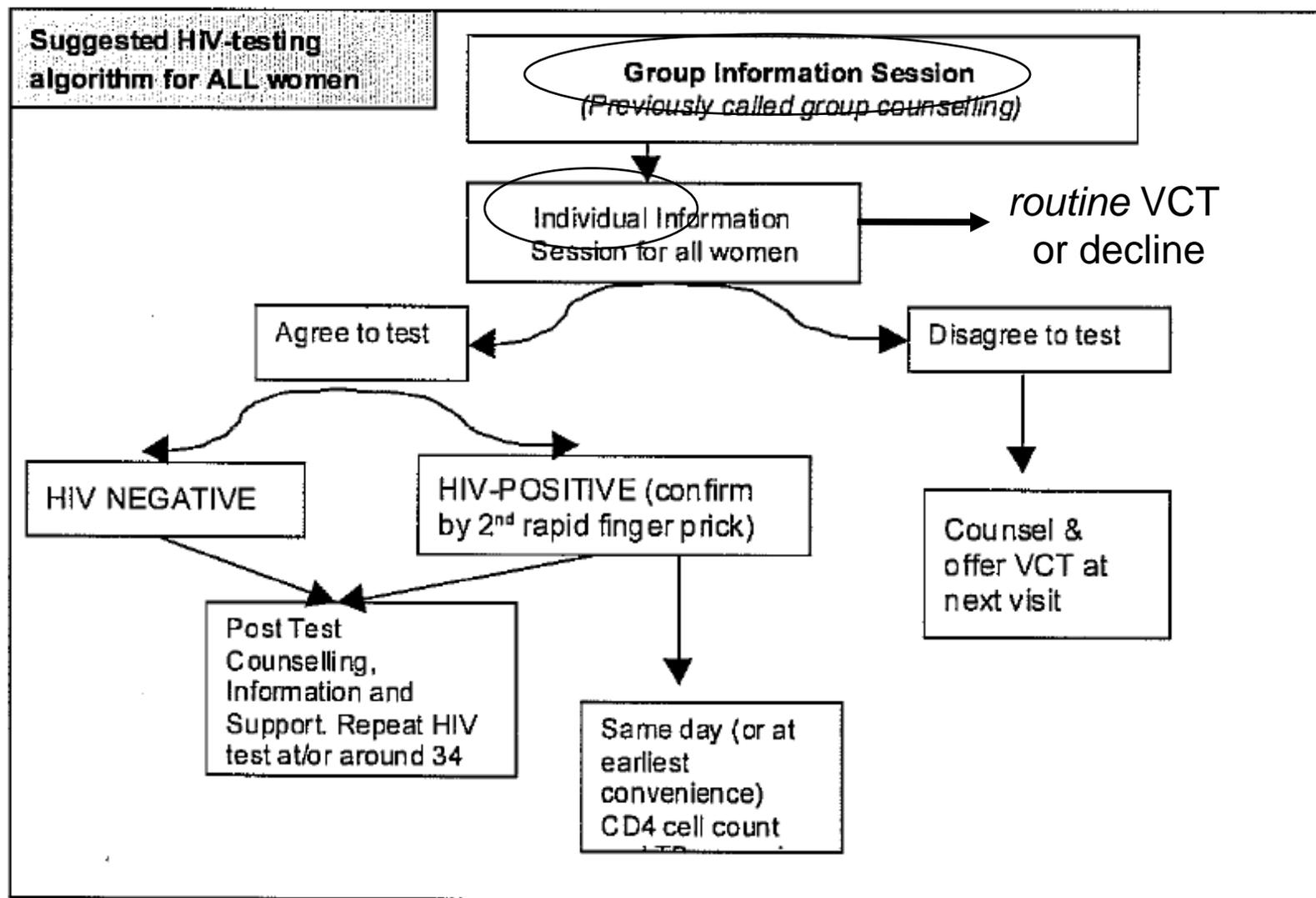


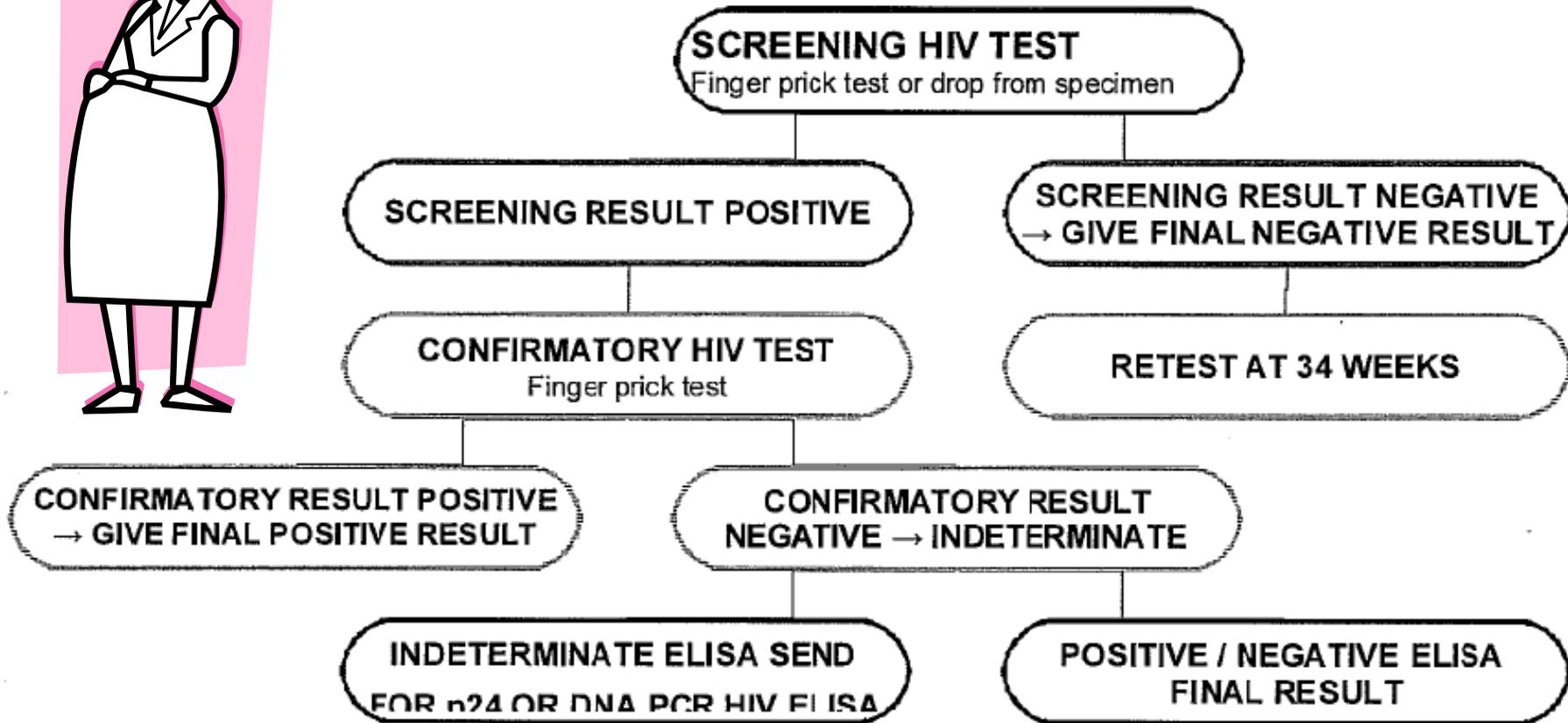
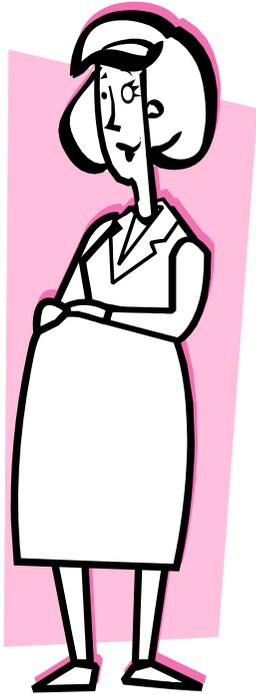
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The flow chart below summarises the processes involved in routine voluntary counselling and testing





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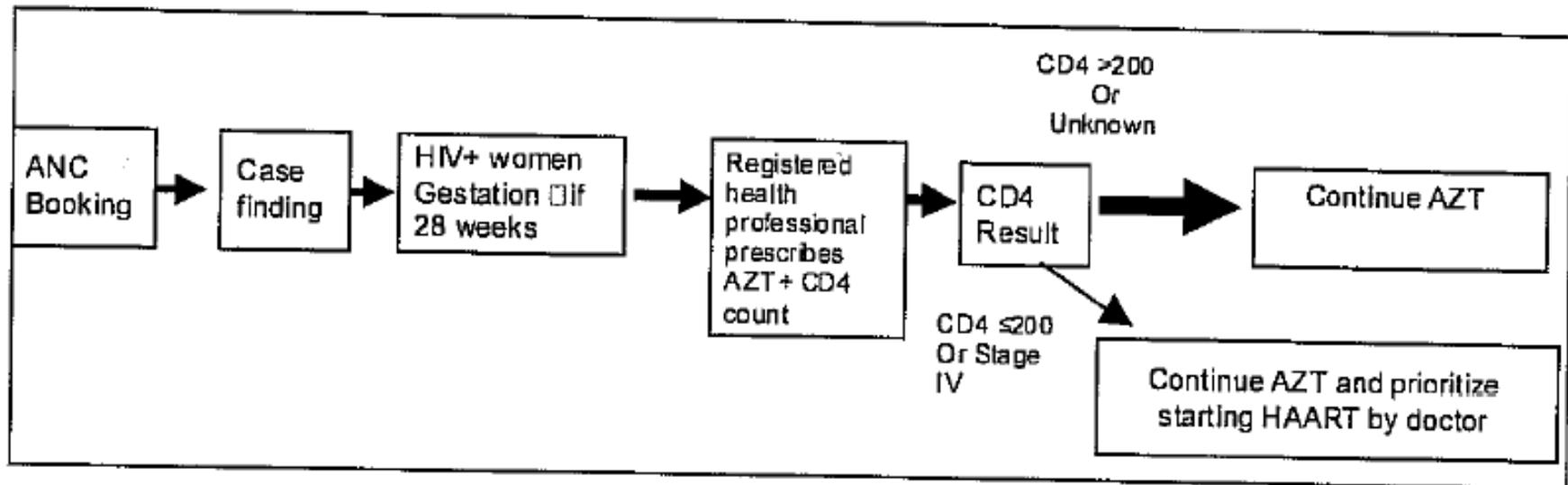


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ARV prophylactic regimes

- *Antepartum* – ARV prophylaxis regime for preventing HIV infection in infants among women seen during pregnancy
- *Intrapartum* – women living with HIV who are in labour and who have not received ARV prophylaxis
- *Postpartum* – infants born to women living with HIV who have not received ARV drugs during pregnancy or labour

AVOID *Bactrim* prophylaxis in first trimester – it exacerbates folate deficiency and increases the risk of neural tube defects, use AFTER the first trimester and Add folate supplements.



Repeat HIV test at \pm 34 weeks if initial test was HIV negative

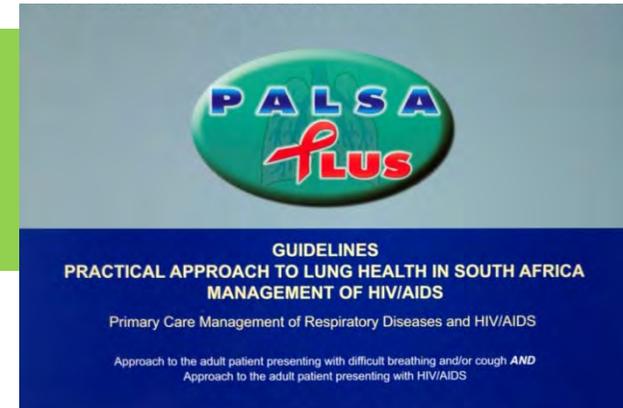
Use of ARVs

- *ARV treatment* = given to mother to improve her own health; refers to the long term use of HAART (3 drugs) primarily to treat and improve the quality of life and prolong life of an individual living with HIV
- *ARV prophylaxis* = refers to the short term use of ARVs solely for the purpose of reducing the risk of HIV transmission from mother to child (mother NOT eligible for life-long ARVs yet) and stopped after child born = *PMTCT regime* (DoH)

ARVs for PMTCT

- HAART used to treat established infection and reduce transmission
- HAART ideally started in 2nd trimester
- (avoid EFV and ddI / d4T combination)
- short term use of monotherapy is effective for PMTCT
- combination therapy is more effective and may delay the emergence of resistance
- non-drug measures to ↓ transmission include C/S and avoidance of BF

PALSA PLUS



- Practical Approach to Lung Health and HIV/AIDS in South Africa
 - 2008 edition includes PMTCT p. 26 & 27
 - total of 48 pages including:
 - STIs
 - screening for cervical cancer
 - TB, asthma
 - HIV/AIDS, ARVs and side effects
- follows
algorithms
and a step by
step approach
for nursing
staff

Indications for ARVs during pregnancy are as follows:

- a. To treat women with advanced HIV that meet criteria to start treatment with Highly Active Antiretroviral Therapy (HAART) in order to delay progression of disease. Whilst being used for maternal health, it is expected that this regimen will also reduce the risk of mother-to-child transmission of HIV. This regimen will be referred to as **HAART**. HAART describes the use of a triple combination of antiretroviral therapy to treat advanced HIV disease.



- b. To reduce the viral load in a pregnant woman so as to decrease the risk of HIV transmission to her child. This regimen will be referred to as the ***PMTCT regimen***. Here PMTCT regimen refers to the combination of ARVs used at various stages of the antenatal, intrapartum and/or postnatal period that aim to reduce transmission as well as any resistance to these drugs.



Women with a CD4 cell ≤ 200 cells/mm³ and/or women who are at WHO stage IV disease should be prioritized to initiate HAART at any stage of pregnancy. For pregnant women not requiring HAART, a PMTCT regimen is the main strategy to reduce MTCT. The use of dual therapy in the PMTCT Treatment Strategy is outlined below and summarised in Table 1. Women presenting at 28 weeks or later, should be started on AZT prescribed by a registered health professional (in line with the relevant legislation and regulations) at that visit, unless clinically anaemic (pale) or laboratory findings indicate that they are severely anaemic (i.e. Hb < 7g/dl). HIV positive women with anaemia should be managed by a doctor prior to initiation of any antiretrovirals, including AZT. Toxicity monitoring for pregnant women on AZT is essential (*refer to table 4 on toxicity monitoring below*)

Big question

When all the information is available the following question need to be asked:

Does the pregnant woman need antiretroviral drugs because her immune system is compromised, or does she only need antiretrovirals during pregnancy for MTCT prevention, because her immune system is still “coping”?

Guidelines for HIV care

- used with obstetric care policies
- as situations arise, the immediate safety of the mother and baby take precedence over the HIV guidelines
 - massive haemorrhage
 - raised blood pressure
 - pre-term labour



Table 1 - Antiretroviral Protocols for Pregnant Women and Infants

| CLINICAL DECISION | REGIMEN FOR WOMAN | REGIMEN FOR INFANT |
|--|---|--|
| PMTCT regimen for ALL groups of women from 28 weeks of pregnancy unless already on HAART | | |
| <p>CD4 cell count >200, continue with this PMTCT regimen</p> <p>CD4 cell count ≤200 continue AZT up to point HAART initiated.</p> | <ul style="list-style-type: none"> ▪ AZT started from 28 weeks onwards AND ▪ sd NVP + AZT at onset of labour on a 3 hourly basis ▪ If in false labour continue with AZT | <p>Sd-NVP + AZT for 7 days*</p> <p>AZT for 28 days if</p> <ul style="list-style-type: none"> • Mother received < 4 weeks AZT during pregnancy • Mother received < 4 weeks HAART or • Mother only received sdNVP |
| HAART regimens (1a and 1b). If on AZT as above need to switch to regimens below | | |
| <p>CD4 cell count ≤200 or WHO stage IV HAART group</p> | <ul style="list-style-type: none"> ▪ d4T + 3TC + NVP (Regimen 1b) ▪ Preferred regimen for pregnant women ▪ Begin at any gestation ▪ d4T + 3TC + EFV (Regimen 1a), ▪ For pregnant women on regimen 1a, switch EFV to NVP in the first trimester ▪ If presenting after first trimester, continue regimen 1a ▪ Continue through labour, delivery and postnatal periods ▪ After the first trimester, if women develop NVP-associated toxicity, then NVP should be substituted with EFV | <p>Sd-NVP + AZT for 7 days*</p> <p>AZT for 28 days if</p> <ul style="list-style-type: none"> • Maternal HAART < 4 weeks |

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| | | |
|---|--|---------------------------------|
| Unbooked woman presents in labour | Also includes women of known status who have had no ARVs during pregnancy. Do not require testing. | |
| <p>Consent and test for HIV only in stage 1 labour.</p> <p>If in advanced stage of labour, defer maternal testing until after delivery.</p> | <p>If HIV positive</p> <ul style="list-style-type: none"> • sd NVP + AZT at onset of labour and on AZT at 3 hourly basis <p>If she is in false labour continue with AZT.</p> | Sd-NVP + AZT for 28 days |

Note:
 Start all pregnant HIV positive women on AZT while awaiting CD4 count results. If she requires HAART, then switch to triple therapy according to Provincial guidelines.

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Table 2 - HAART Adult Dosing Guide

| Drug | Dosage | Notes |
|------------------|--|---|
| d4T (Stavudine) | 30mg 12hrly po | All adult patients must receive 30mg regardless of weight |
| 3TC (Lamivudine) | 150mg 12 hourly po | |
| NVP (Nevirapine) | 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. | Should not be prescribed with TB treatment or if CD4>200 |
| EFV (Efavirenz) | 600mg nocte | Avoid in pregnancy (first trimester) and psychiatric conditions |
| AZT (Zidovudine) | 300mg 12 hourly po | Avoid if severe anaemia (Hb <7g/dl) |

Doses and frequency will remain the same when used intrapartum.

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Table 4: Contraindications for AZT / Toxicity monitoring when using AZT

- Women who are on AZT and who appear pale should have blood taken to measure haemoglobin. The results should be discussed with a doctor trained in HIV & AIDS management.
- If a woman is clinically pale, follow the guidelines below:
 - If the Hb is **<7g/dl**, do NOT START AZT – Investigate causes of severe anaemia
 - If the Hb is **between 7g/dl and 10g/dl**, continue AZT and give Ferrous Sulphate 1 tds. Repeat Hb in 2 – 4 weeks. If there is no response, or the Hb is dropping, continue AZT BUT urgently refer the woman to a doctor for investigation of the anaemia.
 - If the Hb is **10g/dl**, continue AZT AND give Ferrous Sulphate 1 bd. Re-check Hb after 4 weeks on AZT.
- All women commencing AZT (not clinically pale or Hb>**7g/dl**) should have baseline haemoglobin taken.
- During subsequent visits the baseline haemoglobin results of women on AZT should be reviewed by a doctor, and used to determine the next set of actions, if any, to be taken. These actions are listed in the bullets above.

Anaemia in pregnancy

- a *haemoglobinometer* is a hand-held portable machine to quickly check the haemoglobin (Hb) of the pregnant mother
- a drop of blood is obtained from the patient → if this is low, a *formal* laboratory FBC and differential count should be done to confirm and investigate the cause
- reticulocyte count is useful *if* available

Anaemia

- women non-anaemic if Hb > 12 g/dl
- mild anaemia → 10 – 12 g / dl
- moderate anaemia → 8 – 10 g/dl
- severe anaemia → less than 8 g /dl
- Causes:
 - TB (anaemia of chronic disorders)
 - HIV
 - Pregnancy, nutritional deficiency (iron)
 - Bactrim
 - ARVs

National guidelines promote 7g/dl

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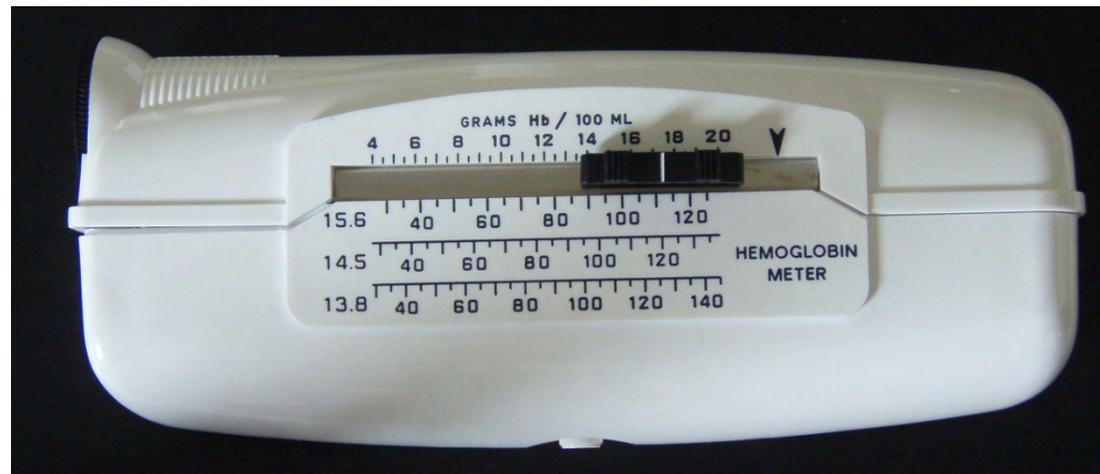
Anaemia

- if Hb 7 - 10 g/dl, perform an FBC and diff, ask patient to return in *one week* for the result (there is a risk of Hb dropping further if patient not monitored)
 - if due to *iron deficiency*, start FeSO4 2 tablets tds, recheck in *one week*
 - management depends on gestational age as Hb will ↑ by 1g per week
 - if < 34 weeks, can observe Hb
 - if > 34 weeks, need to transfuse

Anaemia

If Haemoglobin 8 - 10 g/dl

- if due to *anaemia of chronic disorders* (normochromic, normocytic), exclude cause for anaemia eg TB etc



Note: National NDOH uses 7g/dl



Anaemia

if Hb is less $< 8\text{g/dl}$, she will need a transfusion (minimum 2 units of blood) but *cause* for anaemia should be determined

- if mother HIV+ and pregnant and needs *HAART*, start triple therapy with little effect on Hb (d4T/3TC/NVP)
- if therapy is for *PMTCT programme*, she will need AZT which can affect Hb

TB in HIV positive pregnant women

The outcome of pregnancy is not altered in pregnant women on anti-tuberculosis drugs.

Maternal TB and HIV co-infection increases the risk of the baby acquiring congenital TB infection.

TB treatment in HIV positive pregnant women

The use of anti-TB drugs and antiretrovirals in pregnancy is complicated by the drug-drug interactions between these two groups of drugs as well as their potential teratogenicity.

TB treatment takes priority over ARV therapy, and should never be compromised. If a patient is diagnosed with TB, they must be started immediately on treatment. Rather delay or replace ARV therapy if there are drug interactions, and not the TB treatment



TB treatment in HIV positive pregnant women

- Efavirenz is contraindicated in pregnancy, especially during the first trimester, because of its potential for birth defects of the CNS. However, if there is no other alternative drug available, Efavirenz should only be used after the first trimester.
- Streptomycin is contraindicated in pregnancy because it can cause permanent deafness to the baby.

TB treatment in HIV positive pregnant women

- Nevirapine and Rifampicin should not be used together, because rifampicin is a potent inducer of liver enzymes and lowers the nevirapine blood levels. Dose adjustments for coadministration have not yet been established.
- Concern about the hepatotoxicity of both the Nevirapine and anti-TB drugs when used together. Nevirapine, therefore, is not used in patients receiving a rifampicin-based anti-TB regimen.



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Maternal factors that may increase the risk of HIV transmission

- Pregnancy
 - high maternal viral load (new or advanced HIV / AIDS)
 - viral, bacterial or parasitic placental infection eg malaria
 - sexually transmitted infections (STIs)
 - maternal malnutrition



Maternal factors that may increase the risk of HIV transmission

- Labour and delivery
 - high maternal viral load (new or advanced HIV / AIDS)
 - rupture of membranes (ROM) more than 4 hours before labour begins, avoid prolonged labour
 - invasive delivery procedures that increase contact with mother's infected blood or body fluids eg episiotomy, foetal scalp monitoring
 - first infant in multiple birth
 - chorioamnionitis from untreated STI or other infection

Maternal factors that may increase the risk of HIV transmission

- Breast-feeding
 - high maternal viral load (new or advanced HIV / AIDS)
 - duration of breast feeding
 - early mixed feeding eg food or fluids in addition to breast milk
 - breast abscesses, nipple fissures, mastitis
 - poor maternal nutrition status
 - oral disease in the baby eg thrush or sores



Body mass (weight) in pregnancy

- association between possible development of Lactic Acidosis and overmass

TABLE 4.1. GENERALLY ACCEPTABLE INCREMENTS OF WEIGHT DURING PREGNANCY⁵¹

| Body mass index (BMI), pre-pregnancy (kg/m ²) | Total weight gain (kg) |
|---|------------------------|
| Underweight (<20) | 12.5 - 18 kg |
| Normal (20 - 25) | 11.5 - 16 kg |
| Overweight (25 - 30) | 7 - 15 kg |
| Obese (>30) | ≤7 kg |

NEVER use
d4T & ddl
together



Tuberculosis and pregnancy

- untreated TB represents a far greater hazard to pregnant women and the foetus than does treatment of the disease
- most drugs except *streptomycin* are safe for use in pregnant women

ototoxic to foetus, crosses placenta - DO NOT USE



Comprehensive approach to Prevention of HIV infection in infants

1. *Prevention of primary HIV infection - ABC, factors contributing to woman's vulnerability to HIV include poverty, lack on information, abuse, violence and coercion by men who have several partners*
 - condoms can help prevent transmission when used correctly and consistently
 - dual contraception

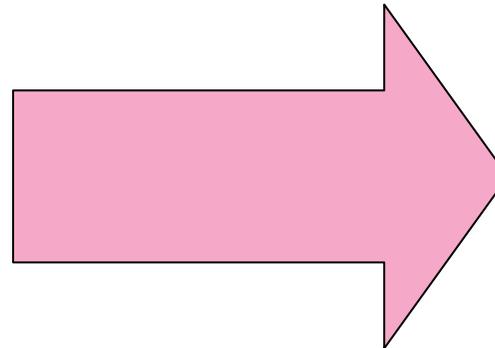
Comprehensive approach to Prevention of HIV infection in infants

2. *Prevention of unintended pregnancies among women infected with HIV*

- access to family planning



FIRST presentation
At Antenatal Clinic



Safe delivery of infant



Comprehensive approach to Prevention of HIV infection in infants

3. *Prevention of HIV transmission from women infected with HIV to their infants*
 - *HIV testing & counselling* → identify women infected with HIV
 - *ARVs for treatment & prophylaxis* → reduce maternal viral load
 - *safer delivery practices* → safe and feasible (? C/S)
 - *safer infant feeding practices* → reduced infant exposure to the virus through safer feeding options

Comprehensive approach to Prevention of HIV infection in infants

4. *Provision of treatment, care and support to women infected with HIV, their infants and their families*

- **women**
- **infant and child**
- **partner involvement and family**



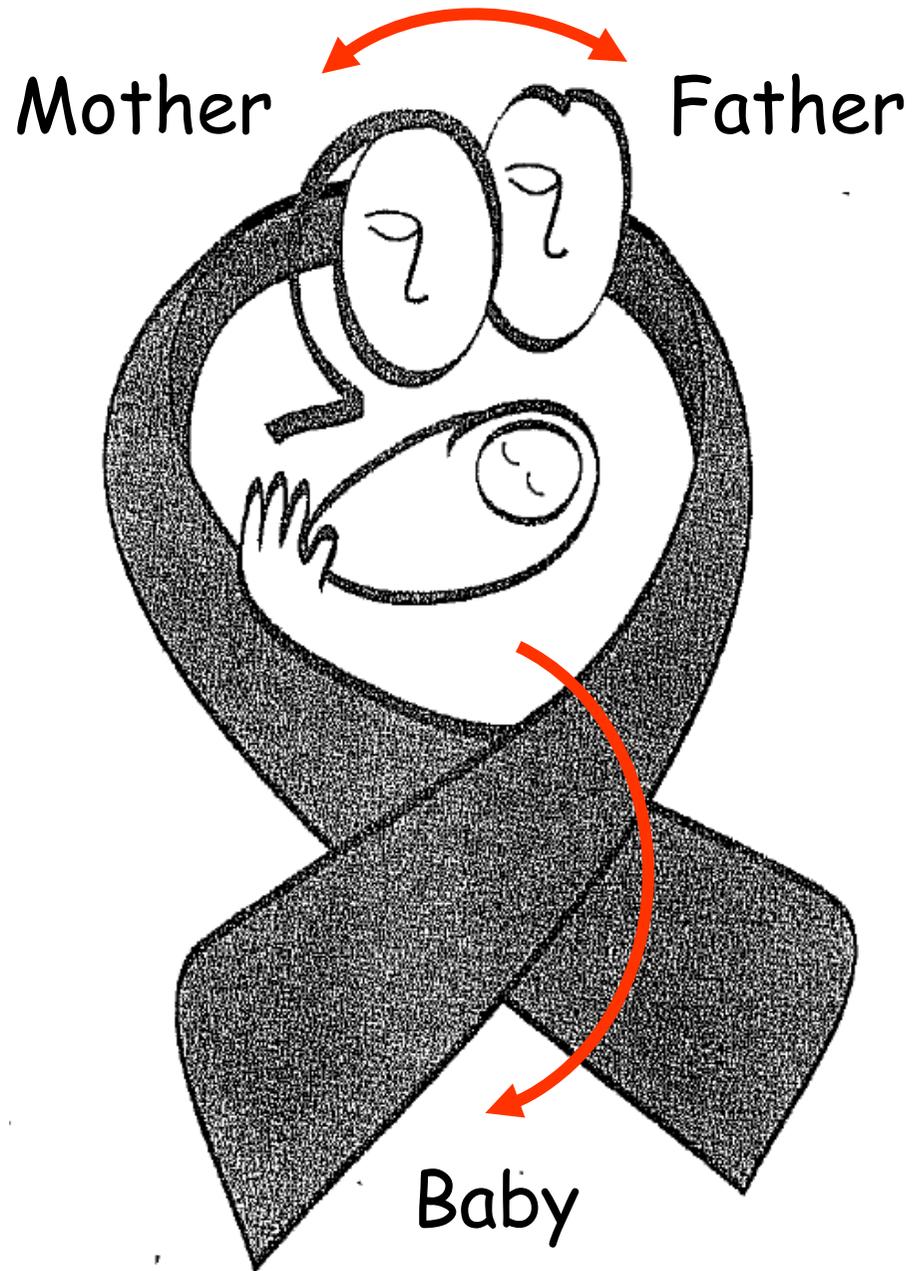
HIV related treatment, care and support services for women

- prevention and treatment of opportunistic infections
- ARV treatment
- treatment of symptoms
- palliative care
- nutritional support
- reproductive health care, including family planning and counselling
- psychosocial and community support



Care and support of the infant and child who are HIV-exposed

- children whose mothers are infected with HIV are at higher risk for illness and malnutrition than other children
 - they may be infected with HIV and become ill
 - FF is never as good as BF → gastroenteritis, respiratory infections and other complications
 - if mother is ill, she may have difficulty caring for her infant
 - families may become economically vulnerable



“Positive Prevention”

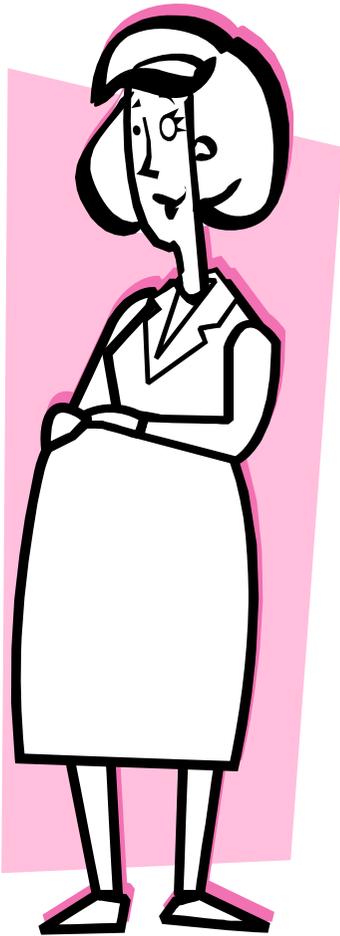
- broader definition
- spread from any HIV positive person to HIV un-infected individual

Counselling couples

- counselling ♂ partners encourages them to practice safer sex and use condoms and limits the number of partners
- emphasise need for partner to protect the health of his wife & their family
- testing together ↓ chances of blame
- identifying sero-discordant partners helps safer sex practices (women often believe her status reflects her partner's status)

Partner involvement in PMTCT

- PMTCT should be as comprehensive as possible and acknowledge that both mothers and fathers have an impact on transmission of HIV to the infant
 - both partners need to be aware of the importance of safer sex throughout pregnancy and breast feeding
 - both partners should be tested and counselled for HIV
 - Both partners should be aware of PMTCT interventions



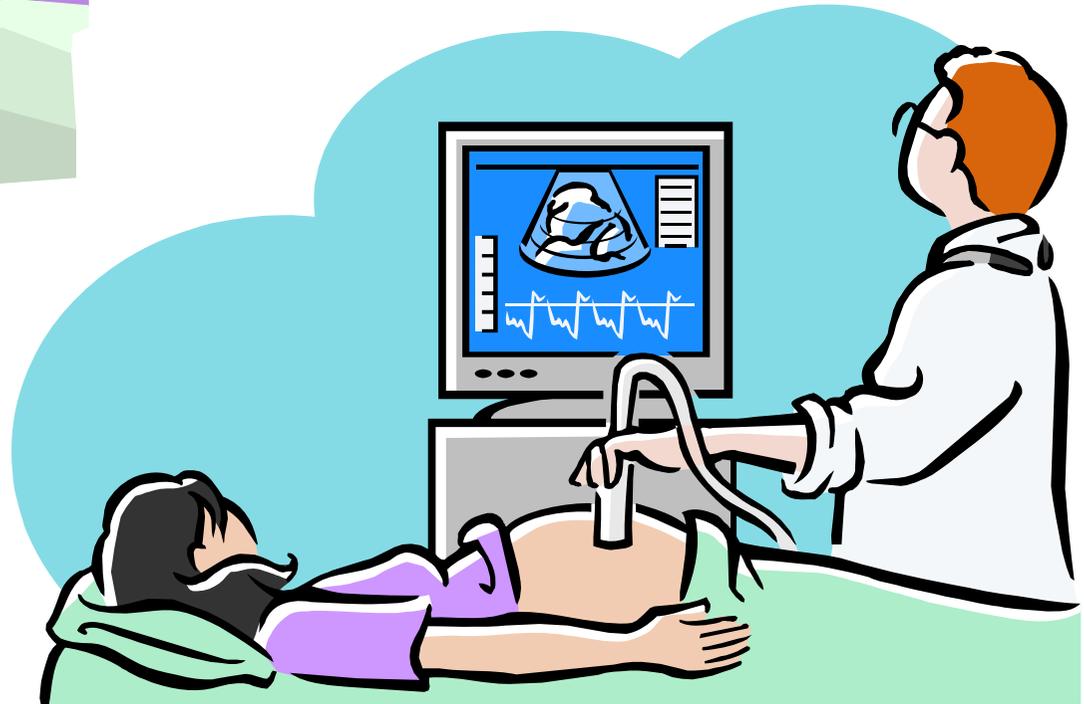
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Maternal follow-up visits

- Visit schedule
 - Once a month until 28 weeks of pregnancy
 - Thereafter every fortnight until 34-36 weeks
 - Subsequently weekly until delivery.
- At each follow-up visit assess for
 - opportunistic infections
 - foetal growth monitoring
 - screen for STIs
 - check urine for asymptomatic bacteruria.
- Institute appropriate management if complications arise.



Foetal monitoring

- An ultrasound is indicated in uncomplicated pregnancies with a baseline scan at 20 weeks of pregnancy.
- Should the pregnancy be terminated an earlier scan may be needed to determine gestation.
- Preterm delivery and low birth weight are common in HIV positive pregnant women.



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