Summary of British HIV Association (BHIVA) Guidelines: Management of HIV Infection in Pregnant Women

- **See BHIVA pregnancy guidelines for full guidance**
- **Folic Acid**
  - All HIV positive women who are trying to conceive or are pregnant should take folic acid until end of 13 weeks gestation. Dose depends on patient factors.
    - Recommend folic acid **5mg daily** if they are :
      - taking dolutegravir
      - has diabetes
      - (or their partner) has a neural tube defect
      - had a previous baby with a neural tube defect
      - (or their partner) have a family history of neural tube defects
    - For all other women – folic acid **400 micrograms daily** (contained in Healthy Start Vitamins for pregnancy)
  - All pregnant women should take Healthy Start Vitamins continuously during pregnancy

- **Viral Load/CD4 Monitoring/Resistance Testing/Sexual Health screening/Prenatal Investigations**
  - Patients commencing antiretrovirals (ARVs) or changing failing therapy measure VL after 2 - 4 weeks then at least once every trimester, at 36/52 gestation and at delivery (helpful in understanding rare cases of transmission)
  - LFTs should be performed with each routine bloods test
  - Women conceiving on ARVs or starting ARVs during pregnancy should have as a minimum CD4 checked at baseline/booking and delivery
  - Resistance test if
    - new diagnosis
    - or if VL not <50 at 36/52 – also review adherence, concomitant medication, consider TDM and resistance test, optimise HAART and consider intensifying regime
  - Sexual health screen is recommended for pregnant women newly diagnosed with HIV and suggested for pregnant women already in HIV care
  - If invasive prenatal testing is planned it is advisable to delay until VL undetectable. If not on treatment and test cannot be delayed start ARVs to include raltegravir and give a single dose of nevirapine 2-4 hours prior to the procedure.

- **Anti-Retroviral Therapy (ARVs)**
  - Only ZIDOVUDINE, ATAZANAVIR and RALTEGRAVIR are licensed for use in pregnancy, use of other ARVs is 'off label'
  - All women not on ARVs should commence
    - As soon as they are able to do so in the second trimester where the baseline viral load ≤30,000 HIV RNA copies/mL
    - At the start of the second trimester, or as soon as possible thereafter, in women with a baseline viral load of 30,000–100,000 HIV RNA copies/mL
    - Within the first trimester if viral load >100,000 HIV RNA copies/mL and/or CD4 cell count is less than 200 cells/mm3
    - All women should have commenced ARVs by week 24 of pregnancy
    - Women presenting after 28 weeks should start ARVs without delay (see section on late presenters below)
  - Women starting ARVs during pregnancy should be initiated on:
    - Either tenofovir disoproxil/emtricitabine or abacavir/lamivudine back bone
    - The 3rd agent should be efavirenz or boosted atazanavir (alternatives are rilpivirine, raltegravir twice daily, darunavir twice daily, dolutegravir (after 6 weeks gestation))
    - Consider an integrase inhibitor as the 3rd agent if baseline VL >100,000 or current regimen failing to suppress the virus (raltegravir 400mg twice daily or dolutegravir 50mg daily)
  - Oral dosing of ARVs should continue throughout delivery
  - Data regarding HAART, individual components of HAART and pre term delivery are conflicting. Some suggest PIs are implicated.

- Effective ARVs commenced prior to conception should be continued throughout the pregnancy except if non standard regimen (e.g. PI monotherapy) or regimen that has been shown to have lower pharmacokinetics in pregnancy e.g. cobicistat or once daily raltegravir
- Patients conceiving on darunavir/ritonavir 800/100mg daily and are fully suppressed can continue on once daily dosing. Consideration should be given to using darunavir/ritonavir 600mg/100mg twice daily if initiated in pregnancy or known resistance.
- Women conceiving on dolutegravir should discuss most up to date evidence on neural tube defects with consultant as soon as possible.
  - Women should be fully informed that the prevalence of neural tube defects is higher following dolutegravir exposure at conception than with other types of ART at conception (equating to 2 per 1000 births vs 1 per 1000 births).
- Consider TDM if tenofovir disoproxil and atazanavir are co-prescribed.
- All women should be advised to continue ARVs post partum. Raltegravir 400mg twice daily can be switched back to 1200mg once daily (using 600mg slow release tablets) when convenient for patient and consider supply of 400mg tablets at home to be used up first to avoid wastage.

- **Hepatitis B Co-infection**
  - Pregnant women presenting with Hepatitis B co-infection should be started on or switched to an HIV regime which includes 2 active Hepatitis B agents e.g. tenofovir disoproxil (tenofovir alafenamide can be used after first trimester) plus emtricitabine or lamivudine

- **Hepatitis C Co-infection**
  - Pregnant women presenting on Hep C treatment should discontinue treatment immediately

- **Late presenters**
  - Pregnant women presenting after 28 weeks should commence ARVs without delay (i.e. do not wait for resistance test)
    - If VL is unknown or >100,000 use a 3 or 4 drug regime containing raltegravir twice daily or dolutegravir 50mg daily
  - Untreated pregnant woman presenting in labour at term should be given:
    - nevirapine stat dose (200mg) regardless of CD4 count and hepatitis status
    - zidovudine 300mg/lamivudine 150mg twice daily
    - raltegravir 400mg twice daily
  - IV zidovudine for the duration of labour and delivery until cord is clamped

- **Pre Term Delivery**
  - Pregnant woman presenting in preterm labour and gestation of infant means unlikely to be able to absorb oral meds consider the addition of double dose tenofovir disoproxil (2 x 245mg tablets) to further load the baby if VL is detectable or unknown.

- **Mode of delivery**
  - Vaginal delivery is recommended for all women with VL <50 at 36/52 (and vaginal birth after caesarean section (VBCS))
  - Consider PLCS for women with VL 50-399 at 36/52 (recommended if SROM)
  - PLCS is recommended for women with VL ≥400 at 36/52
  - Where the indication for PLCS is prevention of transmission, CS should be undertaken at 38-39 weeks gestation

- **IV Zidovudine**
  - Women with a VL >1,000 who present in labour or with SROM or who are admitted for PLCS
  - Untreated women presenting in labour or with SROM where VL unknown
  - The use of intrapartum intravenous zidovudine infusion can be considered in women on ARVs with a plasma HIV viral load between 50 and 1000 HIV RNA copies/mL.

- **Post exposure prophylaxis for infants**
  - **Commence as soon as possible after birth, ideally within 4 hours, especially if mother had no ART.**
  - Post exposure prophylaxis should be given for 2-4 weeks depending on risk stratification:

VERY LOW RISK
Two weeks of zidovudine monotherapy is recommended if all the following criteria are met: • The woman has been on cART for longer than 10 weeks; AND • Two documented maternal HIV viral loads <50 HIV RNA copies/mL during pregnancy at least 4 weeks apart; AND • Maternal HIV viral load <50 HIV RNA copies/mL at or after 36 weeks.
LOW RISK
Extend to 4 weeks of zidovudine monotherapy: • If the criteria in 9.1.1 are not all fulfilled but maternal HIV viral load is <50 HIV RNA copies/mL at or after 36 weeks; • If the infant is born prematurely (<34 weeks) but most recent maternal HIV viral load is <50 HIV RNA copies/mL.
HIGH RISK
Use combination PEP if maternal birth HIV viral load is known to be or likely to be >50 HIV RNA copies/mL on day of birth, if uncertainty about recent maternal adherence or if viral load is not known.
Neonatal PEP should be commenced as soon as possible after birth, and at least within 4 hours

DRUG	DOSE	COMMENTS/SIDE EFFECTS
NRTIs: nucleoside reverse transcriptase inhibitors		
Zidovudine (ZDV) (Retrovir®) Also known as azidothymidine (AZT) Liquid – 10 mg/mL	**Oral:** Gestation (week) +/- weight / Dose <30/40 **gestation at birth** — 2 mg/kg bd 30–34/40 **gestation at birth** — 2 mg/kg bd for 2/52 then 2 mg/kg three times daily ≥34/40 **gestation at birth and** ≤2 kg — 4 mg/kg bd – round dose *up* to the nearest 0.5 mg to assist administration ≥34/40 **gestation at birth and** >2 kg — See dose banding table **Duration oral dosing:** • **VERY LOW RISK monotherapy – 2 weeks** • **LOW RISK monotherapy – 4 weeks** • **Combination therapy – 4 weeks** **Intravenous:** • **≥34/40 gestation** – 1.5 mg/kg od • **<34/40 gestation** – 1.5 mg/kg bd, change to od at 34/40	Anaemia, neutropenia

Weight range (kg)	Oral dose (equivalent to 4 mg/kg)	Volume to be given orally
2.01–2.12	8.5 mg bd	0.85 mL bd
2.13–2.25	9 mg bd	0.9 mL bd
2.26–2.37	9.5 mg bd	0.95 mL bd
2.38–2.50	10 mg bd	1 mL bd
2.51–2.75	11 mg bd	1.1 mL bd
2.76–3.00	12 mg bd	1.2 mL bd
3.01–3.25	13 mg bd	1.3 mL bd
3.26–3.50	14 mg bd	1.4 mL bd
3.51–3.75	15 mg bd	1.5 mL bd
3.76–4.00	16 mg bd	1.6 mL bd
4.01–4.25	17 mg bd	1.7 mL bd
4.26–4.50	18 mg bd	1.8 mL bd
4.51–4.75	19 mg bd	1.9 mL bd
4.76–5.00	20 mg bd	2 mL bd

  - If known maternal zidovudine resistance, zidovudine monotherapy is still recommended for infant PEP for very low risk and low risk categories
  - For high risk infants 3 drug PEP is recommended:
    - Zidovudine liquid for 4 weeks (for dosing see table above)
    - Lamivudine liquid 2mg/kg twice daily (rounded up to nearest 0.5mg) for 4 weeks
    - Nevirapine liquid 2mg/kg daily (rounded up to nearest 0.5mg) for 1 week then 4mg/kg daily for 1 week then stop
    - If known maternal resistance to zidovudine and/or nevirapine, seek expert advice but start 3 drug regimen above until guidance on ARV choice is available

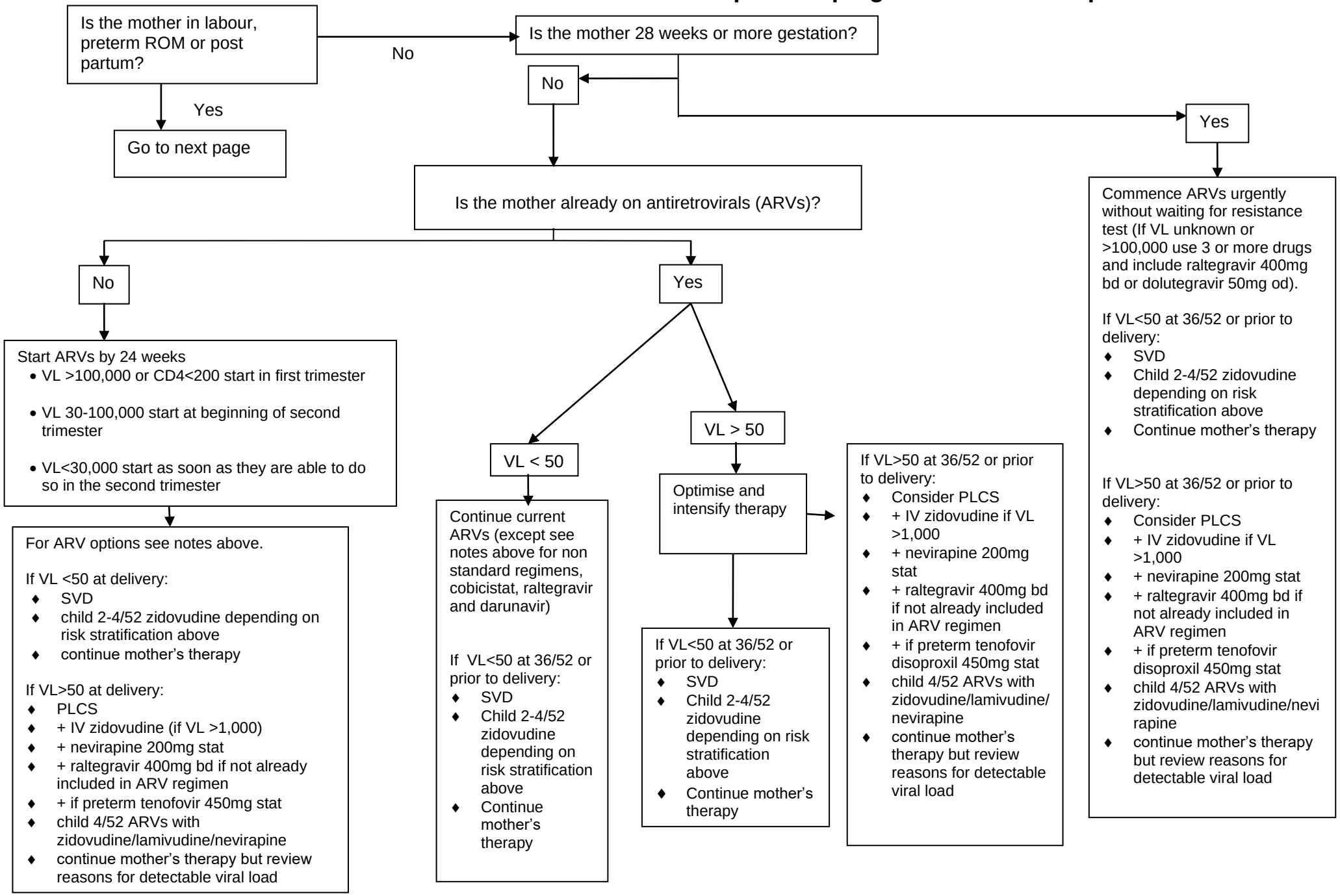
- **PCP Prophylaxis**
  - Co-trimoxazole prophylaxis is recommended from 1 month of age if HIV PCR screening is positive at any stage or if the infant is confirmed to be diagnosed with HIV. This should only be stopped if HIV infection is subsequently excluded.

- **Feeding**
  - Safest method of infant feeding is exclusive formula feeding.
  - Women who are virologically suppressed on ARVs with good adherence and who choose to breastfeed should be supported to do so, but should be informed about the low risk of transmission of HIV through breastfeeding in this situation and the requirement for extra maternal and infant clinical monitoring.
  - Leaflets for patients considering breastfeeding are available on the BHIVA website and viral load monthly monitoring for mother and baby is required during breastfeeding and for the baby 2 months after stopped breast feeding. Mixed feeding may increase risk – expressed or donor breast milk should be used if top-ups are required. Solids should not be introduced until 6 months of age.
  - Women not breastfeeding should be advised to use supportive underwear without underwire, simple analgesic for any discomfort and cold compresses can help. Medication is not usually needed and symptoms usually subside in few days. Cabergoline 1mg one off dose within 24 hours post partum to suppress lactation may be an option but is not routine and should be discussed with MDT.

- **HIV testing infants**
  - For formula fed infants it is recommended to test infants HIV DNA PCR (viral load) 3ml venous blood, EDTA (purple top) to Ninewells Virology - use a single adult EDTA tube
    - Day 1
    - 2 weeks if high risk infant
    - 6 weeks (or at least 2 weeks after completion of infant prophylaxis)
    - 12 weeks (or at least 8 weeks after completion of infant prophylaxis)
    - It is recommended to do antibody testing:
      - If the mother's antibody status is not documented, an HIV antibody test should be performed on the first sample received from the infant.
      - HIV antibody testing for seroreversion testing at 22-24 months
      - Although an HIV antibody test may be negative before this time, engagement in care with follow-up of the infant should continue until at least 18 months of age.
  - For breast fed infants it is recommended to test infants HIV DNA PCR (viral load) 3ml venous blood, EDTA (purple top) to Ninewells Virology - use a single adult EDTA tube
    - Day 1
    - 2 weeks
    - Then monthly until 2 months after breastfeeding stopped (along with maternal viral loads)
    - It is recommended to do antibody testing:
      - If the mother's antibody status is not documented, an HIV antibody test should be performed on the first sample received from the infant.
      - HIV antibody testing for seroreversion testing at 22-24 months
      - Although an HIV antibody test may be negative before this time, engagement in care with follow-up of the infant should continue until at least 18 months of age.

Kirsteen Hill, HIV Pharmacist, 2020
Updated March 2024
Review March 2027

Flow chart to aid treatment choice in HIV positive pregnant women who present before labour



Flow chart to aid treatment choice in HIV positive pregnant women who present during labour, after delivery or with a threatened unplanned delivery

Note: Nevirapine included in these regimes as it crosses the placenta rapidly and lasts in the infant circulation for up to 10 days. Tenofovir disoproxil and Raltegravir also rapidly cross the placenta.