Summary of British HIV Association (BHIVA) Guidelines:  
Management of HIV Infection in Pregnant Women 2020

- 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 the woman is:
      - taking dolutegravir
      - has diabetes
      - has a neural tube defect (or their partner)
      - had a previous baby with a neural tube defect
      - have a family history of neural tube defects (or their partner)
  - 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 on 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 have a CD4 checked at baseline/booking and delivery
  - Resistance test if new diagnosis or if VL not <50 at 36/52 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 and ATAZANAVIR 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
      - for patients co-infected with Hepatitis B use tenofovir disoproxil/emtricitabine
      - tenofovir alafenamide can be used after first trimester
    - The 3rd agent should be efavirenz or boosted atazanavir (alternatives are rilpivirine, raltegravir bd, darunavir bd, 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
  - 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 contains cobicistat, once daily raltegravir or tenofovir alafenamide. These regimens should be modified to include one or more ARVs that cross the placenta e.g. tenofovir disoproxil, raltegravir twice daily.

- Patients conceiving on darunavir/ritonavir 800/100mg daily and are fully suppressed can continue on once daily dosing
- 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

**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 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 bd or dolutegravir
- 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 bd
  - raltegravir 400mg bd
- 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**
- SVD is recommended for all women with VL <50 at 36/52
- 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
  o Commence as soon as possible after birth, ideally within 4 hours, especially if mother had no ART.
  o Post exposure prophylaxis should be given for 2-4 weeks depending on risk stratification:

<table>
<thead>
<tr>
<th>DRUG</th>
<th>DOSE</th>
<th>COMMENTS/SIDE EFFECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NRTs: nucleoside reverse transcriptase inhibitors</strong></td>
<td></td>
<td>Anemia, neutropenia</td>
</tr>
<tr>
<td>Zidovudine (ZDV) (Retrovir®)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Also known as zidovudine (AZT)</td>
<td></td>
<td></td>
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<tr>
<td><strong>Oral</strong></td>
<td></td>
<td></td>
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<tr>
<td>Gestation (week) v/ weight</td>
<td>Dose</td>
<td></td>
</tr>
<tr>
<td>&lt;34/40 gestation at birth</td>
<td>2 mg/kg bid</td>
<td></td>
</tr>
<tr>
<td>35–36/40 gestation at birth</td>
<td>2 mg/kg bid for 2/3 then 2 mg/kg three times daily</td>
<td></td>
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<tr>
<td>&gt;36/40 gestation at birth and &lt;2 kg</td>
<td>4 mg/kg bid – round up dose up to the nearest 0.5 mg to assist administration</td>
<td></td>
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<tr>
<td>&gt;36/40 gestation at birth and ≥2 kg</td>
<td>See dose banding table</td>
<td></td>
</tr>
<tr>
<td><strong>Liquid – 10 mg/mL</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Duration oral dosing:</strong></td>
<td></td>
<td></td>
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<tr>
<td>VERY LOW RISK monotherapy – 2 weeks</td>
<td></td>
<td></td>
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<tr>
<td>LOW RISK monotherapy – 4 weeks</td>
<td></td>
<td></td>
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<tr>
<td>Combination therapy – 4 weeks</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Intravenous:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;34/40 gestation – 1.5 mg/kg od</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;34/40 gestation – 1.5 mg/kg bid; change to od at 34/40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight range (kg)</td>
<td>Oral dose (equivalent to 4 mg/kg)</td>
<td>Volume to be given orally</td>
</tr>
<tr>
<td>2.0–2.2</td>
<td>8 mg bid</td>
<td>0.95 mL bid</td>
</tr>
<tr>
<td>2.2–2.5</td>
<td>9 mg bid</td>
<td>1.0 mL bid</td>
</tr>
<tr>
<td>3.6–4.0</td>
<td>20 mg bid</td>
<td>2 mL bid</td>
</tr>
<tr>
<td>3.6–4.0</td>
<td>33 mg bid</td>
<td>1.5 mL bid</td>
</tr>
<tr>
<td>5.0–6.0</td>
<td>45 mg bid</td>
<td>1.5 mL bid</td>
</tr>
<tr>
<td>6.0–7.0</td>
<td>65 mg bid</td>
<td>1.5 mL bid</td>
</tr>
<tr>
<td>6.0–7.0</td>
<td>87 mg bid</td>
<td>1.5 mL bid</td>
</tr>
<tr>
<td>8.0–9.0</td>
<td>115 mg bid</td>
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<tr>
<td>9.0–10.0</td>
<td>140 mg bid</td>
<td>2 mL bid</td>
</tr>
<tr>
<td>10.0–11.0</td>
<td>170 mg bid</td>
<td>2 mL bid</td>
</tr>
<tr>
<td>11.0–12.0</td>
<td>200 mg bid</td>
<td>2 mL bid</td>
</tr>
</tbody>
</table>

• For high risk infants:
  ■ 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

• HIV testing infants
  o It is recommended to test infants HIV DNA PCR:
    ■ during the first 48 hours
    ■ 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)
  o 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 should be discussed with mother as there are 2 options:
      • testing at 18 months with discharge from follow up if negative, but a ~ 1 in 12 risk to require further blood tests
      • or delay the test and potential to discharge from follow up to 22-24 months and risk of needing further blood tests goes down to ~1 in 50
- **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**
  - Exclusive formula feeding is recommended.
  - 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](http://www.bhiva.org) and viral load monthly monitoring for mother and baby is required during breastfeeding and for the baby 2 months after stopped breast feeding.
  - Women not breastfeeding their infant by choice, or because of viral load >50 HIV RNA copies/mL, should be offered cabergoline 1mg one off dose within 24 hours post partum to suppress lactation.
Flow chart to aid treatment choice in HIV positive pregnant women who present before labour

Is the mother in labour, preterm ROM or post partum?

Yes
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No

Is the mother 28 weeks or more gestation?

No

Is the mother already on antiretrovirals (ARVs)?

No

Start ARVs by 24 weeks
• VL >100,000 or CD4<200 start in first trimester
• VL 30-100,000 start at beginning of second trimester
• VL<30,000 start as soon as they are able to do so in the second trimester

For ARV options see notes above.
If VL <50 at delivery:
• SVD
• child 2-4/52 zidovudine depending on risk stratification above
• continue mother’s therapy
If VL>50 at delivery:
• PLCS
• + IV zidovudine (if VL >1,000)
• + nevirapine 200mg stat
• + raltegravir 400mg bd
• + if preterm tenofovir 450mg stat
• child 4/52 ARVs with zidovudine/lamivudine/nevirapine
• continue mother’s therapy but review reasons for detectable viral load

Yes

Optimise and intensify therapy

VL < 50

Continue current ARVs (except see notes above for non standard regimens, cobicistat, raltegravir and dolutegravir)

If VL<50 at 36/52 or prior to delivery:
• SVD
• child 2-4/52 zidovudine depending on risk stratification above
• continue mother’s therapy

If VL>50 at 36/52 or prior to delivery:
• PLCS
• + IV zidovudine if VL >1,000
• + nevirapine 200mg stat
• + raltegravir 400mg bd
• + if preterm tenofovir disoproxil 450mg stat
• child 4/52 ARVs with zidovudine/lamivudine/nevirapine
• continue mother’s therapy but review reasons for detectable viral load

Yes
Commence ARVs urgently without waiting for resistance test (If VL unknown or >100,000 use 3 or more drugs and include raltegravir or dolutegravir).

If VL<50 at 36/52 or prior to delivery:
• SVD
• Child 2-4/52 zidovudine depending on risk stratification above
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• PLCS
• + IV zidovudine if VL >1,000
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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.

- **Mother presents with threatened pre-term delivery and/or pre-term ROM**
  - Take baseline bloods for CD4 and VL urgently.
  - Commence ARVs: Nevirapine 200mg stat dose (regardless of CD4) + zidovudine 300mg/lamivudine 150mg bd + raltegravir 400mg bd + consider tenofovir disoproxil 490mg stat
  - ♦ Optimum obstetric management
  - ♦ CS
  - ♦ IV zidovudine if VL >1,000 or unknown
  - ♦ Child 4/52 ARVs with zidovudine/lamivudine/nevirapine
  - ♦ Continue mother’s treatment until reviewed by HIV team

- **Mother presents in labour**
  - HIV status unknown: Point of care HIV test if possible
  - Commence ARVs: Nevirapine 200mg stat dose (regardless of CD4) + zidovudine 300mg/lamivudine 150mg bd + raltegravir 400mg bd + consider tenofovir disoproxil 490mg stat
  - ♦ Active management of labour
  - ♦ IV zidovudine
  - ♦ Emergency CS (2 hours post NVP) if not about to deliver
  - ♦ Child 4/52 ARVs with zidovudine/lamivudine/nevirapine
  - ♦ Continue mother’s therapy if HIV positive until review by HIV team

- **Mother diagnosed after delivery**
  - ♦ Child 4/52 ARVs with zidovudine/lamivudine/nevirapine (may reduce transmission if given within 72 hours of delivery)
  - ♦ No requirement to start Mother's treatment until discussed at HIV MDT. Treatment can be delayed for 2-4 weeks until resistance tests results received.

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Oct 2020