Scottish Perinatal Network Neonatal Guideline: Blood Borne Virus during pregnancy

Management of Infants exposed to HIV in pregnancy

Document Control Sheet

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Revision History

Version:	Date:	Summary of Changes:	Name:	Changes Marked:
1.0	15.05.2024	None – original version	Sarah Sparrow	
2.0	04.11.2025	Update to: Section 2.0 risk	Sarah Sparrow	
3.0	26.02.2026	Minor amendments made based on recommendations from steering group	Sarah Sparrow	
4.0	23.04.2026	Added missing bullet point in Section 5 as requested by author	Anne-Sophie Hoffmoen	

Disclaimer

The recommendations in this guideline represent the view of the National Neonatal Network Guideline Development Group, arrived at after careful consideration of the evidence available. When exercising their clinical judgement, healthcare professionals are expected to take this guidance fully into account, alongside the individual needs, preferences and values of the families using their service. It is not mandatory to follow the guideline recommendations, and it remains the responsibility of the healthcare professional to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

Unless you have accessed guidance from the SPN website, there is no guarantee this is the latest version. It is the responsibility of the user to confirm the version they are using is the latest published version.

1. Introduction

This guideline has been created as an evidence-based, unified document to streamline local neonatal guidance from across Scotland and the BHIVA (British HIV association) guidelines for the management of HIV in pregnancy and the postpartum period 2025[1]. It aims to ensure equality and safety for the management of all infants in Scotland exposed to HIV in pregnancy.

There is good uptake of antenatal screening. With subsequent appropriate antiretroviral treatment of mothers during pregnancy and labour, careful delivery planning, post-exposure prophylaxis (PEP) for babies, the risk of vertical transmission of HIV from mother to baby in the UK is declining.

The management of infants exposed to HIV in pregnancy should be undertaken by an experienced, multidisciplinary group of professionals which may include paediatric infectious disease consultants and specialist nurses, obstetricians and specialist midwives, adult infectious disease or GUM consultants, neonatologists, infant feeding advisors and virologists. Regular review meetings to discuss and document the neonatal plans for these infants is recommended.

This document has been produced with the input of Neonatologists (Dr Sarah Sparrow, Dr David Quine, Dr Andrew MacLaren, Dr Birgit Wefers, Dr Helen Brotherton, Dr Roy McDougall, Dr Karen Walsh) Paediatric Infectious Disease specialists (Dr Laura Jones, Dr Connor Doherty, Dr Katherine Longbottom and the SPAIIN committee), Virology (Dr Kate Templeton), Pharmacy (Fiona Marra) and admin (Roberta Shanks) and we thank them for their hard work on its production and update.

2. Risk Stratification

Infants should be categorised according to the following algorithm adapted from the most up to date BHIVA (British HIV Association) flowchart[1]. Information including duration of maternal cART, engagement with HIV/maternity services during pregnancy and maternal viral loads in pregnancy and on the day of birth are required.

*VL – Viral Load *cART – Combination Antiretroviral therapy

Risk stratification has been altered from three groups to two which now include **LOW RISK** or **HIGH RISK.** These categories determine prophylaxis and schedule for follow up monitoring. Good communication is required between the maternal and neonatal management teams to ensure the most up to date information is available and considered when managing the infant. The risk factor of prematurity has been removed since the last guideline. Evidence for this decision can be found within the BHIVA main guideline

See appendix 1 for the **updated flowchart algorithm for the management of infant post exposure prophylaxis**

LOW RISK

Infants can be classified as **LOW RISK** if they fulfil the following criteria:

- Mother has been on continuous antiretroviral therapy (cART) for longer than 10 weeks

AND

- Well engaged with maternity /HIV services during pregnancy

AND

- All Maternal HIV viral loads have been <50 HIV RNA copies/mL in the 10 weeks prior to birth

AND

- At least one viral load has been sent in the last 6 weeks prior to birth

AND

- Maternal viral load on day of birth is also shown to be <50 HIV RNA copies/mL

Zidovudine Monotherapy prophylaxis is given for 2 weeks for LOW RISK infants as outlined in section 4.

There is no need to extend the duration of prophylaxis for breastfed infants.

HIGH RISK

Infants can be classified as **HIGH RISK** if

- If any of the above criteria for LOW RISK are not met
- Maternal viral load is known or suspected to be >50 copies/mL on day of birth
- If there is uncertainty about maternal adherence with cART
- If the viral load is unknown

HIGH RISK infants should be given combination post exposure prophylaxis (PNP) as outlined in section 4.

- When an infant has been deemed **HIGH RISK** and commenced on combination PNP because of not fulfilling the criteria for **LOW RISK** and subsequently the maternal viral load is found to be <50 copies/mL, it is reasonable to consider simplifying the infant PNP to 2 weeks of zidovudine monotherapy. However, this decision should be made in discussion with a paediatrician with expertise in prevention of vertical HIV transmission.

2.1 Unexpected detectable high viral load at delivery

If an infant has been considered **LOW RISK** but the maternal viral load is unexpectedly found to be > 50 copies/mL on the day of birth, the patient should be urgently discussed with the local paediatric infectious disease consultant or neonatal consultant with expertise in the prevention of vertical HIV transmission. Consideration should be given to escalate urgently to three-drug PNP as per **HIGH RISK** infants. 7

If regional advice is not immediately available, cases can be discussed with extra-regional specialist teams (e.g. St Mary's Hospital, London; Great Ormond Street Hospital for Children, London; Birmingham Heartlands Hospital; St George's Hospital, London) and also referred to the national paediatric virtual clinic which can discuss urgent referrals in addition to their monthly routine meetings (caroline.foster5@nhs.net, a.bamford@nhs.net, hermione.lyall@nhs.net).

3. Management at Birth

- Delayed cord clamping should be offered to all women in line with WHO recommendations[2]
- The baby's face and eyes should be cleaned at delivery and the baby bathed as soon as is practical while taking care to avoid hypothermia
- If not already done, review individualised plan for management and ensure circumstances have not changed
- Ensure maternal blood has been sent for peri - partum viral load check
- **Baseline bloods should be taken as outlined below**
- **Antiretroviral treatment for baby should be commenced within the first 4 hours after delivery**
- **Please see section 3.5 if there is any uncertainty regarding maternal HIV status at time of delivery**

3.1 Diagnosis (Blood Sampling)

Infants acquiring HIV intrapartum may have low peripheral blood HIV levels, therefore a positive HIV DNA/RNA result within 72 hours of birth is taken as presumptive evidence of intrauterine transmission.

Within the first few weeks of life the sensitivity of the viral diagnostic tests increases dramatically and by 3 months of age 100% of non-breastfed infants with HIV are likely to be detected.

- Do not take cord blood (as contamination from maternal blood may occur)
- Do not delay prophylaxis whilst waiting to perform blood samples or receive results
- Take 1.5-3mls of blood for HIV RNA PCR (HIV RNA viral load) in to EDTA tube after birth (within 48 hours) and always before discharge
- If maternal antibody status is unknown, check infant antibody status with 1st sample (1-2mls EDTA sample, HIV screen)
- If infant is unwell at any stage, take bloods for FBC, UE, LFT, amylase, lactate and blood gas (antiretroviral drugs may cause metabolic disturbance or bone marrow suppression)

Please refer to local laboratory guidance for sample size, labelling and sample processing

3.2 Interpreting viral load results

Depending on the local laboratory's detection threshold, a negative viral load will be reported as < (less than) 50 copies/mL or < (less than) 20 copies/mL - these results constitute a negative test.

If the sample was of too little volume a 1:10 dilution will be performed **and reported**, and the result may show as < (less than) 200 copies/mL. This also indicates a negative result.

However, **if an actual viral load number is reported** i.e. 30 copies/mL then regardless of how low this is, it means RNA has been detected and therefore the test should be discussed with the specialist paediatric ID team.

***Please ensure you are familiar with local laboratory cutoffs as these may vary, particularly when a dilution is used. If results are unclear discuss with local laboratory urgently.**

3.3 Mothers without HIV screening results

If HIV screening results are unavailable due to late booking/out of region unexpected delivery/other, an emergency HIV antibody screen and viral load must be obtained and discussed with the duty virologist for urgent processing. This service should be made available 24 hrs a day/7 days a week however may not be possible in some areas of the country.

In the case of maternal sampling refusal escalate to consultant level to ensure appropriate communication and subsequent management of the at-risk infant, which will include HIV antibody screen and viral load from the infant.

In circumstances as above, consideration must be given to treating an infant as **HIGH RISK** until results are available, and if the decision is made to treat with combination PEP ideally this should be commenced within 4 hours of birth.

4. Infant Antiretroviral Post Exposure Prophylaxis:

Post exposure prophylaxis is determined by the risk stratification in section 2.0 and 2.1.

Antiretroviral prophylaxis for baby should be commenced within the first 4 hours after delivery

See Appendix 2 for the most up to date BHIVA drug dosing for infant PNP or click on the link below.

https://bhiva.org/wp-content/uploads/2025/06/BHIVA-Pregnancy-Guidelines-Appendix-4.pdf

4.1 Unwell Infants/Intolerant to oral medication

Have a low threshold for admitting and starting parenteral therapy if there are any concerns that an infant is unwell or not tolerating oral feeds/medication

The aim is to revert to the appropriate oral medication pathway as soon as an infant may tolerate. If extended period of NBM is required discuss ongoing therapy with local infectious disease team and pharmacy.

Dosing is available as per the BHIVA dosing link above.

5.0 Follow up

LOW RISK:

- **HIV RNA PCR at birth (before discharge)**
- **HIV RNA PCR at 6 weeks (or at least 2 weeks post cessation of infant prophylaxis)**
- **HIV RNA PCR at 12 weeks (or at least 8 weeks post cessation of infant prophylaxis)**
- **HIV antibody testing (HIV screen) at 22-24 months of age (1-2mls EDTA)**

HIGH RISK:

- **HIV RNA PCR at birth (before discharge)**
- **HIV RNA PCR at 2 weeks**
- **HIV RNA PCR at 6 weeks**
- **HIV RNA PCR at 12 weeks**
- **HIV antibody testing (HIV screen) at 22-24 months of age (1-2mls EDTA)**

BREASTFED INFANTS:

- **HIV RNA PCR at birth (before discharge)**
- **HIV RNA PCR monthly for duration of breastfeeding – *may in some circumstances be extended to 2 monthly (fully informed/shared decision making where the mother has regular monthly undetectable viral loads)***
- **HIV RNA PCR at 4 weeks post cessation of breastfeeding**
- **HIV RNA PCR at 8 weeks post cessation of breastfeeding**
- **HIV antibody testing (HIV screen) at 22-24 months of age (1-2mls EDTA)**

It is also recommended that infants are offered a general follow up appointment at 9 months of age and a formal neurodevelopmental review at 22-24 months of age.

6.0 Breastfeeding

Breast feeding is an important route of transmission of HIV worldwide; however the data is limited on the risk of transmission of HIV via breastmilk in high income countries. The rule of undetectable = untransmittable (U=U) cannot be applied to breastfeeding and despite good compliance with ART, the risk of transmission is not zero.

Whilst WHO recommendations are that women with HIV should breastfeed for 12-24 months, this does not apply in Scotland where there is access to clean water and funding for formula milk.

However, we recognise that decisions around infant feeding are complex and therefore proactive, supportive discussions with a model of shared decision making, are encouraged by the end of the second trimester.

In line with the most up to date BHIVA guidelines,

- **We recommend that mothers with a viral load <50 copies/mL on ART with good adherence, and who choose to breastfeed, should be supported to do so by the HIV MDT**

- **We recommend that the HIV MDT should inform all women who want to breastfeed about the ongoing low risk of transmission of HIV through breastfeeding even when viral load is <50 copies/mL on ART, the importance of adherence to ART to minimise the risk of transmission and the requirement for extra clinical monitoring for both themselves and their infants**

For HIV positive women who choose to breast feed, compliance with maternal highly active antiretroviral therapy (HAART) should be carefully monitored. The mother's viral load should be tested monthly to ensure that HIV virus remains undetectable; this testing will be undertaken by the obstetric/ID team.

It is recommended that breastfeeding be exclusive (i.e. mixed feeding with other milk formulas and early weaning are not recommended during breastfeeding) and completed by the end of 6 months at which time weaning can commence. Giving solid foods/cereals to infants less than 6 months whilst breastfeeding at least doubles the risk of HIV transmission. This is thought to be due to gut inflammation which may occur with early weaning.

Research from Africa is ongoing with regards to combination feeding (combining breast milk and formula) has not shown an increase in HIV transmission, however in the UK currently we are led by current BHIVA guidance which recommends exclusive (where possible) breastfeeding. Formula milk may be required for short periods to support growth during the initiation and establishment of breastfeeding.

Prolonged infant prophylaxis during the breastfeeding period is not recommended - the baby should receive oral prophylaxis as per standard guidelines in section 4.0.

Follow up includes increased surveillance of infants with monthly HIV RNA PCR as detailed above in section 5.0.

If the mother develops a cracked nipple or mastitis, breast feeding from that side should be suspended, and urgent lactation support sought. Lactation may be maintained by expressed/pumping of milk, but milk from the affected breast should be discarded until 48 hours after resolution of mastitis symptoms. The usual advice to 'feed through' an episode of mastitis is contraindicated.

Breastfeeding mothers should be encouraged to have a plan for transitioning on to formula feeding, which may include expressed breast milk and bottle feeding to ensure an infant will accept this method of feeding.

All mothers should be provided with the written BHIVA information sheet 'General information on infant feeding for parents living with HIV' and 'HIV and feeding your newborn baby' - see appendix 3 and 4 or the links below.

https://bhiva.org/wp-content/uploads/2025/06/infant-feeding-leaflet-1.pdf

https://bhiva.org/wp-content/uploads/2025/06/infant-feeding-leaflet-2.pdf

Other health care workers involved in the care of a family who chose to breastfeed should also be provided with written information so that the appropriate advice is given.

The NSHPC is now collecting enhanced surveillance data on women with HIV who breastfeed and their infants. This will contribute to epidemiological data for the future (www.ucl.ac.uk/nshpc)

7.0 Management of HIV positive Infants*

- Infants with a positive test for HIV should be started on **Cotrimoxazole** prophylaxis from 4 weeks of age
- Refer **urgently** to specialist centre for management of HIV, according to CHIVA standards of clinical care (Chiva | Standards of Care and Clinical guidelines)
- Feedback (local risk reporting tool) to obstetric unit for investigation

8.0 Immunisations

- **Immunisations** should be given as per the national schedule outlined in the Green Book unless there is maternal co-infection with Hepatitis B
- **Rotavirus vaccine** is not contraindicated (unless HIV diagnosis has been confirmed and infant is severely immunosuppressed)
- If infant is **LOW RISK** **BCG vaccination** may be offered at birth if indicated
- If infant is **HIGH RISK** **BCG vaccination** should be delayed until infant has negative HIV PCR at 3 months

If there are any uncertainties at any time during the management of an infant exposed to HIV in pregnancy, contact the on call Neonatal Consultant or local Paediatric Infectious Disease Consultant as appropriate.

References:

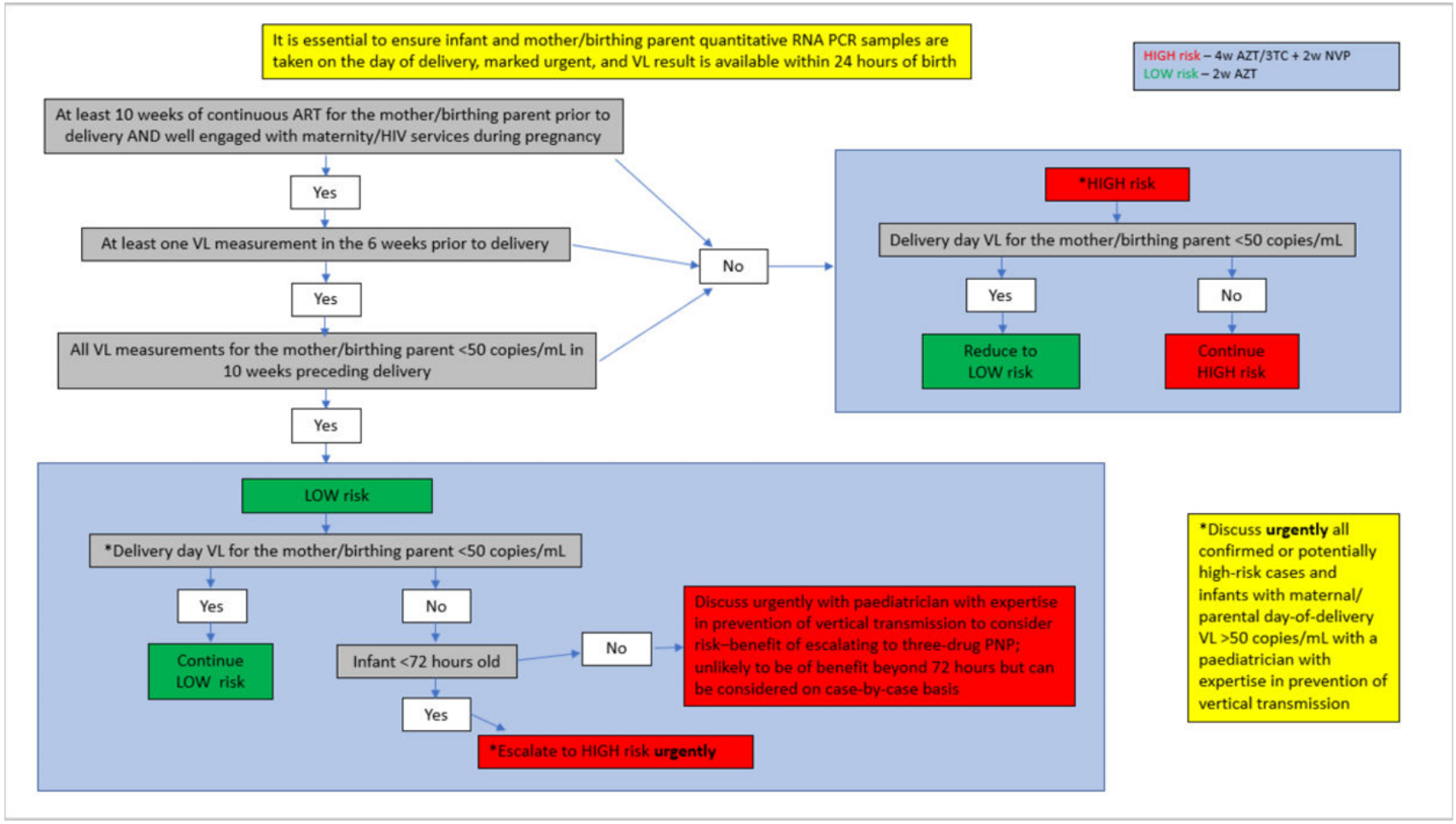
1. Byrne L, Short C-E, Bamford A et al. BHIVA guidelines on the management of HIV in pregnancy and the postpartum period 2025

2. WHO, 2012. WHO Recommendations for the Prevention and Treatment of Postpartum Haemorrhage. WHO: Geneva

Appendices:

1. BHIVA updated algorithm for infant PNP – see next page
2. BHIVA drug dosing for infant PNP
3. BHIVA parent information: General information on infant feeding for parents living with HIV
4. BHIVA parent information: HIV and feeding your newborn baby

Appendix 1. BHIVA updated algorithm for infant PNP 2025



3TC, lamivudine; AZT, zidovudine; NVP, nevirapine; VL, viral load; w, week.