Frimley Health NHS Foundation Trust

HIV in Pregnancy

Key Points

- Antenatal HIV should be delivered by a MDT.
- Women with an undetectable viral load should be supported to have a vaginal delivery.
- If pre-labour SROM aim for delivery within 24 hours.
- Neonates should have PEP within 4 hours of delivery.
- In the UK, women living with HIV should be encouraged to formula feed.

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Abbreviations

AFASS	Affordable, feasible, acceptable, sustainable and safe
ARM	Artificial rupture of membranes
ART	Antiretroviral therapy
CNS	Clinical nurse specialist
CS	Caesarean section
FBS	Fetal blood samples
FSE	Fetal scalp electrode
GUM	Genitourinary medicine
MDT	Multidisciplinary team
PPROM	Pre-term pre-labour rupture of membranes
RNA	Ribonucleic acid
SVD	Spontaneous vaginal delivery

Contents

Introduction

The management of HIV in pregnancy aims to reduce the risk for transmission of HIV from mother to child that can occur during pregnancy, labour or breast feeding. With intervention it is possible to reduce the risk of transmission from 25% to less than 1% for women who are aware of their status in early pregnancy and take up preventative intervention.[1] Interventions include antiretroviral therapy (ART) for mother and baby, managed delivery and formula feeding. The management of HIV positive women in pregnancy is also aimed at optimising their health during pregnancy. This includes performing a sexual health screen, monitoring of the HIV-1 and/or HIV-2 RNA, CD4 count, FBC, U&E, LFT, glucose and the use of antiretroviral therapy.

Clinicians for expert advice

CLINICIANS for expert advice - Wexham Site: Mobiles via switchboard
Miss Kaajal Barot, Consultant Obstetrician, WPH, via switchboard
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Dr Sanjay Jaiswal, Consultant Paediatrician
Dr Satish Krishnan, Consultant Paediatrician

VIROLOGY both sites
Between 7am and 7 pm email virology.asph@nhs.net
Virology lab Tel: 01932 723729
Out of hours asp-tr.bsps.clinicalvirology@nhs.net

Antenatal Screening

- All pregnant women should be offered an HIV test at booking including those already known to be HIV positive. The antenatal screening team should be included in discussions if required. If the woman declines HIV screening at her booking appointment, this should be documented in her notes and the screening team informed by e-mail. The woman should be offered a face to face appointment with the screening midwives prior to 20 weeks where testing should be re-discussed and available at any point in the pregnancy. If a woman is considered high risk, she should be offered a repeat HIV test at 28 weeks if the booking test is negative.
- At Frimley Park Hospital they should be referred to the HIV team at the relevant Sexual Health Clinic for their postcode area.
- High risk women include those who partake in high risk sexual behaviours and intravenous drug users. Women and their partners who have recently come from countries with high HIV rates may also be high risk. This list is not exhaustive and if unclear, should be discussed with the Sexual Health Clinic team.
- If women book after 24 weeks, the samples should be marked urgent. Screening specimens received after 24 weeks gestation will need to be fast-tracked through the

analytical process and a result reported within 48 hours. Consequently, please email the virology lab at ASPH (asp-tr.virology.asph@nhs.net) to inform them of incoming samples.

- All positive results should be telephoned **AND** e-mailed to the antenatal screening team by the virology team.
- The report must indicate whether the infection is with HIV-1, HIV-2 or is a dual infection.
- Women with a confirmed screen positive result should be offered an appointment to discuss their result in less than or equal to 5 working days of the maternity service receiving notification by the laboratory. This will include making an appointment for the woman with a health advisor from the appropriate local sexual health clinic.
- Confirmatory testing, including CD4 count will be conducted at the relevant sexual health clinic, which will be shared with the Obstetric team to determine the care of the woman and the onward management of the pregnancy.

Confidentiality

- All HIV positive women should be treated with confidentiality and in a non-judgemental way.
- HIV positive women should be encouraged to share information about their HIV status with all members of the multi-disciplinary team including their GP and community midwife.
- Each HIV positive woman should be encouraged to disclose her status to her partner. If she declines, the Sexual health Clinic team should be informed. Detailed guidance has been published on this issue by the GMC.[3]
- HIV positive pregnant women may choose not to disclose their status to family members, who may still attend antenatal appointments and be present during or after birth. Staff should be careful not to inadvertently disclose the woman's status.
- Please confirm with HIV positive pregnant woman if correspondence (clinic letters) stating their HIV status can be sent to their home address.

Antenatal management

- All HIV positive pregnant women will be managed by a multi-disciplinary team involving specialist obstetrician, screening midwife, sexual health physician, paediatrician, community midwife, pharmacist
- The management will be optimised using the HIV care plan (see attached care plan) which will be filed in EPIC.
- All pregnant women with HIV should take some form of antiretroviral therapy (ART). Pregnant women may have conceived taking ART, or be started on it during the pregnancy for their health and should continue ART lifelong.
- Nausea and vomiting in pregnancy should be aggressively managed to ensure that women can continue taking ART.
- Women should be reassured that the benefits of ART outweigh the risks and most of the ART medications are considered safe in pregnancy.
- Women on ART are at higher risk of pre-eclampsia and may develop abnormal liver function in pregnancy.

- Screening for hepatitis C should be added to the usual booking bloods but is also done routinely by Sexual Health Clinic for all HIV patients.
- All HIV positive women should be offered routine screening for fetal aneuploidies and if high chance result received be counselled in line with NHS screening pathway, understanding if a person is HIV positive, CVS or amniocentesis might increase the risk of passing HIV on to their baby. Referral to discuss with fetal medicine consultant to be considered.
- If woman is on ART a GTT needs to be done at 28 weeks.
- A 36/40 viral load will be taken at the 36/40 ANC appt and processed with Hospital No. so that results will be available to all on EPIC. In women who commence ART in pregnancy, a HIV viral load should be checked 2-4/52 after commencing at least once every trimester, at 36 weeks and at delivery. LFTs should be done with each routine blood test. This will be done by the Sexual Health Clinic team with the exception of the 36 week and delivery bloods.
- Write to the HIV physician to request copies of the blood results are shared and to ask if the HIV is susceptible to nevirapine, lamivudine (3TC) and zidovudine (AZT). A letter will be generated by the HIV clinic, after each patient visit, which will include test results and current plan of care. At FPH the letter will be sent to the obstetrician responsible for the patient and copied to the screening midwives.
- Write to the consultant paediatrician (FPH: Sanjay Jaiswal) to plan the baby's postnatal care. At WPH the screening team will notify the Paediatrician.
- The mode of delivery should be finalised by 36 weeks. It should take into account the wishes of the woman, the viral load, the use and duration of antiretroviral therapy and any obstetric risk factors.
- ECV can be offered to women with plasma viral load <50 HIV RNA copies/ml.

Intrapartum management

All HIV positive women should have a care plan as to their mode of delivery. It is well documented that pre-labour caesarean section significantly reduces the risk of transmission from mother to child when the viral load is detectable >50 copies/mL and this had become the standard of care in UK. However, with the introduction of ART women who have an undetectable plasma HIV-1 and/or HIV-2 RNA vaginal delivery is recommended unless there are obstetric reasons to the contrary. [4,5,6,7] If vaginal delivery is planned a shorter interval between rupture of membranes and delivery will reduce the risk of transmission from mother to baby.
Offer caesarean section to women:

- Not receiving ART
- Receiving ART but with a viral load >400 copies/mL
- Those taking Zidovudine monotherapy.

Discuss caesarean section with women

- Co-infected with Hepatitis C
- Receiving ART with a viral load 50-400 copies/mL

Explain there is no reduction in the rate of mother to child transmission with caesarean section for women

- Not receiving ART with viral load <50 copies/mL
- Receiving ART with viral load <400 copies/mL

On the day of delivery (SVD or CS), please take one EDTA purple bottle for Maternal HIV viral load. (This result will be available after delivery). On Epic order [HIV viral load].
If a vaginal delivery is planned:

- Inform on call obstetric team
- Use universal precautions (see below) including eye protection for managing all patients
- HIV is not an indication for continuous electronic fetal monitoring
- Try to leave membranes intact for as long as possible.
- If SRM in labour, have a low threshold to augment.
- If ARM is needed for augmentation, start oxytocin straight after the ARM (unless contracting frequently already).
- Continue the woman's normal antiretroviral drugs during labour
- Check the woman's care plan to see if an intrapartum zidovudine infusion is necessary (see below).
- Avoid ARM (artificial rupture of membranes) unless in the 2nd stage and delivery is imminent
- Avoid the use of fetal scalp electrode (FSE)
- Cord clamping can be delayed
- In the case of need for instrumental delivery, forceps are advisable as they are associated with less fetal scalp trauma. If choosing to use ventouse, a silastic or silk cup is preferable over a Kiwi or metal cup, but the preference is to use forceps.
- Individuals who choose to give birth in water should be supported to do so where the viral load is <50 copies/mL
- **Universal precautions** – All staff assisting in the delivery as well as all theatre staff must wear eye protection, masks and aprons until the baby is delivered and any bleeding is under control. Staff scrubbed in should use double gloves and blunt needles (9997) for closing the uterus and rectus sheath.

Intrapartum IV zidovudine should be used:

- For women with viral load > 1000 HIV RNA copies/ml plasma who present in labour or with SROM or admitted for planned caesarean section.
- Untreated women presenting in labour or with SROM where viral load is not known.
- Can be considered in women on ART with HIV viral load 50-1000 RNA copies/ml
- IV zidovudine should be given for the duration of labour until the cord is clamped.

If there is pre-labour rupture of membranes:

- Confirm with speculum and take HVS
- If planned for vaginal delivery augment immediately with oxytocin as prolonged rupture of membranes increases the risk of transmission
- If very unfavourable and there is a low probability of delivery within ten hours consider CS

- If planned for CS expedite as soon as possible

If planned for pre-labour CS and requiring IV zidovudine:

- Admit the woman the night before the delivery and site an IV cannula
- Commence zidovudine at 06.00 hours to run for 4 hours prior to CS if the mother's HIV viral load is >50 copies/mL (see below)
- Do not discontinue any other antiretroviral drugs
- Blunt needles (9997) should be used to close the uterus and rectus sheath.
- ST 3-7 experienced in caesarean section or consultant to do the caesarean section
- If a woman with a planned pre-labour CS attends in advanced labour, consider vaginal delivery if it is likely to occur within 4 hours. Give Zidovudine as per protocol.

Zidovudine infusion

- If intrapartum zidovudine is planned it should be commenced at the onset of labour or 4 hours prior to CS and stopped when the cord is clamped.
- The usual dose is 2mg/kg (based on pre-pregnancy weight) for 60 minutes using an infusion pump, followed by a continuous intravenous infusion of 1mg/kg/hour
- Add the contents of 1vial (20mL) 200mg of zidovudine to 30mL 5% dextrose to give a concentration of 4mg in 1mL
- Infuse at a rate of 0.5mL (2mg)/kg/hr for 60 minutes and then 0.25mL (1mg)/kg/hr via a syringe driver until the umbilical cord is clamped
- For example, for a 75 kg woman infuse at 75 x 0.5mL/hour = 37.5mL/hour for the 1st hour then 75 x 0.25mL/hour =18.75mL/hour thereafter until umbilical cord is clamped.

Complications in pregnancy

Pre-term delivery

- Preterm labour has been associated with women on ART
- Preterm delivery is a risk factor for HIV mother to child transmission
- Give IV zidovudine from onset of labour until umbilical cord is clamped
- HVS must be taken
- If less than 34 weeks give antenatal steroids as usual
- Tocolysis may be used if indicated

Pre-term pre-labour rupture of membranes (PPROM)

- After 34 weeks delivery of the baby should be expedited regardless of maternal viral load and therapy
- Before 34 weeks the risks of prematurity will need to be balanced against the risk of HIV infection in the baby by a multi-disciplinary team involving the obstetrician, paediatrician, GU physician and the woman.

Care of the newborn of HIV positive mother

- Inform the screening team at Wexham Park, when the baby has delivered onX153301 (leave a message or e-mail if out of hours).
- Inform the screening team at FPH when baby has delivered on Ext 136989 or email: fph-tr.antenatalscreening@nhs.net

Postnatal Prophylaxis (PNP) Recommendations for Infants at Risk of HIV

PNP should be started as soon as possible after birth, and **no later than 4 hours** after delivery.

For infants at low risk of acquiring HIV, we recommend 2 weeks of zidovudine monotherapy, provided **all** the following criteria are met in the mother or birthing parent:

- Antiretroviral therapy (ART) was initiated at least 10 weeks prior to delivery;
- There is evidence of good engagement with maternity, antenatal, and HIV care services;
- At least one viral load measurement was taken within the 6 weeks prior to delivery;
- All viral load measurements in the 10 weeks prior to delivery, including the measurement on the day of delivery, show levels <50 copies/mL.

If there is uncertainty about recent adherence or the viral load is unknown, zidovudine monotherapy is not recommended.

In infants at high risk of acquiring HIV, we recommend use of combination PNP if the above criteria for low-risk infants are not met, especially if the mother/birthing parent is known or likely to have a viral load >50 copies/mL on the day of delivery, if there is uncertainty about recent adherence or if the viral load is unknown.

For standard combination PNP, we recommend a regimen of nevirapine for 2 weeks, together with zidovudine and lamivudine for 4 weeks

Intravenous ART may be considered for neonates unable to tolerate oral medication or who are at significant risk of necrotising enterocolitis due to prematurity

HIV RNA PCR results for both the woman/birthing parent and infant should be available within 24 hours of sample receipt by the laboratory

In cases where the infant is at high risk of acquiring HIV (i.e., combination PNP is indicated), and there is a documented history of genotypic resistance in the mother or birthing parent, expert consultation is recommended. If immediate advice is unavailable, begin standard three-drug PNP (zidovudine, lamivudine, and nevirapine) until further guidance is obtained

If combination PNP is initiated due to uncertainty or high-risk status, but the maternal viral load at delivery is later confirmed to be <50 copies/mL, simplifying the infant's regimen to zidovudine alone to complete a total of 2 weeks should be considered. This decision should involve a paediatrician with expertise in prevention of vertical HIV transmission.

At WPH all three PNP drugs can be found as stock on the neonatal unit. At FPH zidovudine liquid can be found on Maternity A. The opened bottle/s **MUST** be labelled with dosing

information by pharmacy prior to discharge. All efforts must be made to plan discharge and dispensing from pharmacy during working hours.

Delay BCG vaccination if indicated until PCR results are known

Postnatal Management

· Take maternal blood at the same time as baby's blood for PCR, or take prior to delivery.

· Offer cabergoline 1mg PO stat dose within 12 hours for lactation suppression

· Sexual Health Clinic will document via a letter which will be uploaded to EPIC if maternal ART should be discontinued postnatally. The patient will also be aware of this. The majority of patients will continue ART postnatally.

· Discuss family planning. Include the advantages of barrier methods. The contraceptive pill may be appropriate depending on the ART regimen the woman is on, but others will not be appropriate as drug levels are reduced due to interactions with some antiretrovirals (e.g. protease inhibitors, efavirenz and nevirapine are contraindicated).

· Routine postnatal check is with the GP.

· Ensure Sexual Health Clinic team are aware of the birth and follow up has been arranged.

· Report the outcome to National Study of HIV in Pregnancy and Childhood via the antenatal screening midwife.

Postnatal Prophylaxis (PNP) Duration and HIV Post-Exposure Prophylaxis (PEP) During Breastfeeding:

- For low-risk infants, we recommend that PNP should not routinely extend beyond 2 weeks, even if the infant is breastfeeding
- If the mother becomes viraemic during the breastfeeding period, the infant should be considered HIV-exposed and managed in accordance with the CHIVA guidelines for PEP (CHIVA Clinical Guidelines)

Immunisation:

- We recommend that immunisations be administered in line with the national schedule outlined in the UK Green Book
- The rotavirus vaccine is not contraindicated, except in cases where HIV has been confirmed and the infant is severely immunosuppressed
- For infants at low risk of HIV transmission, including those who are breastfed, we recommend that BCG vaccination be given at the same time and for the same indications as for infants not exposed to HIV
- For infants at high risk of HIV transmission, we recommend that BCG vaccination be deferred until HIV PCR testing is completed at 12 weeks of age and the infant is confirmed HIV-negative.

Diagnosing or Excluding HIV Infection in Infants

For Infants at High Risk:

- We recommend that molecular diagnostic testing for HIV be performed at the following time points :
    - As soon as possible after birth, ideally within the first 24 hours and before hospital discharge, using HIV RNA and DNA PCR
    - At 2 weeks of age with HIV RNA and DNA PCR (additional testing for high-risk infants only)
    - At 6 weeks of age using HIV RNA PCR (or DNA PCR if RNA is unavailable)
    - At 12 weeks of age using HIV RNA PCR (or DNA PCR if RNA is unavailable)
- We recommend HIV antibody testing at 24 months to assess for seroreversion.

For Infants at Low Risk and Not Breastfed:

- We recommend that molecular diagnostics be performed at the following intervals:
    - Within the first 24 hours after birth, prior to hospital discharge, using HIV RNA PCR (or DNA PCR; one test only)
    - At 4–6 weeks of age, at least 2 weeks after the end of PNP, using HIV RNA PCR (or DNA PCR; one test only)
    - At 10–12 weeks of age, using HIV RNA PCR (or DNA PCR; one test only)
- HIV antibody testing is recommended at 24 months to confirm loss of placentally transferred antibodies.

For Infants at Low Risk and Breastfed:

- We recommend that molecular diagnostics be performed as follows:
    - Within the first 24 hours after birth, prior to hospital discharge, using HIV RNA PCR (or DNA PCR)
    - Monthly testing using HIV RNA PCR for the duration of breastfeeding
    - However, after shared decision-making and provided maternal viral load is being monitored monthly, testing frequency may be reduced to every 2 months
    - At 4 and 8 weeks after the cessation of breastfeeding, using HIV RNA PCR (or DNA PCR).
- HIV antibody testing should be performed at 24 months, or at a minimum of 8 weeks after cessation of breastfeeding, whichever is later, to detect seroreversion.

Integrated Screening Outcomes Surveillance Service (ISOSS) to be updated by the antenatal screening midwives of babies births. (By collecting data on a national level, ISOSS can assess vertical transmission rates on a larger scale. Audits can be completed, trends can be analysed and common complicating issues in care can be identified)

Infant feeding

- We recommend a model of shared decision-making, facilitating open and supportive discussions about infant feeding, and tailoring advice to women/feeding parents (and their families where appropriate and with their consent).
- Where possible, we recommend that infant feeding should be discussed proactively by the HIV MDT by the end of the second trimester at the latest, and revisited in the third trimester, with the decision documented in the antenatal notes and birth plan
- We recommend that the HIV MDT shares HIV-specific sources of information and support, including peer support, with individuals making infant feeding decisions
- It is well established that HIV can be transmitted from mother to child by breastfeeding and complete avoidance removes the risk altogether[8,9,10].
- However, there is a lack of data on the risk of HIV transmission through breast/chestfeeding in high income settings when the mother/feeding parent has been on long-term suppressive ART. In addition, there have been no comparisons of long-term non-HIV-related mother/parent and child outcomes among those who breast/chestfeed and those who exclusively formula feed.
- The efficacy of ART in reducing HIV transmission from breastfeeding in the UK has not been studied.
- Between 2012 and 2021, 203 (2.4%) women living with HIV in the UK were reported to have been supported to breastfeed, with no reported cases of postnatal HIV transmission at the time of study publication

- **If a woman on ART with undetectable HIV viral load chooses to breastfeed despite medical advice the following advice/procedures should be implemented:**

- We recommend lifelong ART for the woman/feeding parent (rather than extended infant PNP) to minimise HIV transmission through breastmilk/human milk and in line with the BHIVA adult HIV treatment guidelines

- We recommend that both women/feeding parents and their infants are reviewed monthly for HIV RNA viral load testing (or HIV DNA for infants) during, and for 2 months, after stopping breast/chestfeeding

- Wherever possible, we recommend that blood monitoring for women/feeding parents and infants should be co-located and undertaken at the same appointment to minimise the risk of missed appointments

- We recommend exclusive breast/chestfeeding (i.e. not combining breastmilk/human milk with formula, or other milk or liquids, or with solids or both), especially in infants aged less than 6 months.
    - Exclusive breastfeeding should be advised. (Data from African studies in women on combination ART shows that mixed feeding carries a higher risk of transmission than exclusive breastfeeding.)
    - Women who choose to breastfeed, are advised to do so exclusively (so no mixed feeding) for a maximum of 6 months. If they get cracked nipples or any bleeding from the nipple area, they should not breastfeed and instead 'pump and dump' until it

heals. If this were to be an ongoing problem, then a MDT should be held between a lactation specialist, the paed team and the HIV (GUM) team.

- Maternal combination ART should be continued throughout the breastfeeding period.
- Support and monitoring of the mother's adherence to ART with monthly maternal HIV-1 and/or HIV-2 RNA testing
- The breastfed baby should be tested at least monthly by PCR for HIV-1 and/or HIV-2 RNA or HIV proviral DNA. For infants at high risk of infection an additional early HIV test maybe undertaken at 2–3 weeks of age. The testing must be performed using primers known to amplify the maternal virus so a maternal specimen should be sent if not already tested at the site laboratory.
- **If the neonate is on ART, then HIV molecular tests should be performed at 2 weeks and 2 months after stopping PEP, i.e. usually at 6 weeks and 12 weeks of age.**
- **The neonate should be tested twice after weaning, ideally between 2 and 8 weeks.**
- If the mother's adherence is sub-optimal, she has a detectable viral load, intercurrent illness that affects her ability to take or absorb ART or if she develops mastitis, she should be advised to stop breastfeeding.
- Prolonged (> 4weeks) ART for the baby is not recommended.
- **Loss of maternal HIV antibodies should be confirmed at 18–24 months of age.**

Communication
If there are communication issues (e.g., English as a second language, learning difficulties, blindness/partial sightedness, deafness) staff will take appropriate measures to ensure the patient (and her partner, if appropriate) understand the actions and rationale behind them.

Equality Impact Assessment
This guideline has been subject to an Equality Impact assessment.

Auditable Standards

- British HIV Association (BHIVA) annual National Clinical Audit: Management of pregnancies in women with HIV
- BHIVA Standards of Care for People Living with HIV 2013 (Standard 8, Reproductive Care)

Monitoring compliance
These guidelines will be monitored by individual case review via the maternity risk management group where risk issues are reported

As stated in the Department of Health circular (HSC 1999/183), antenatal HIV testing 'should be subject to local performance management and audit'.
Core information collected

- Number of women booked for antenatal care
- Number offered an HIV test

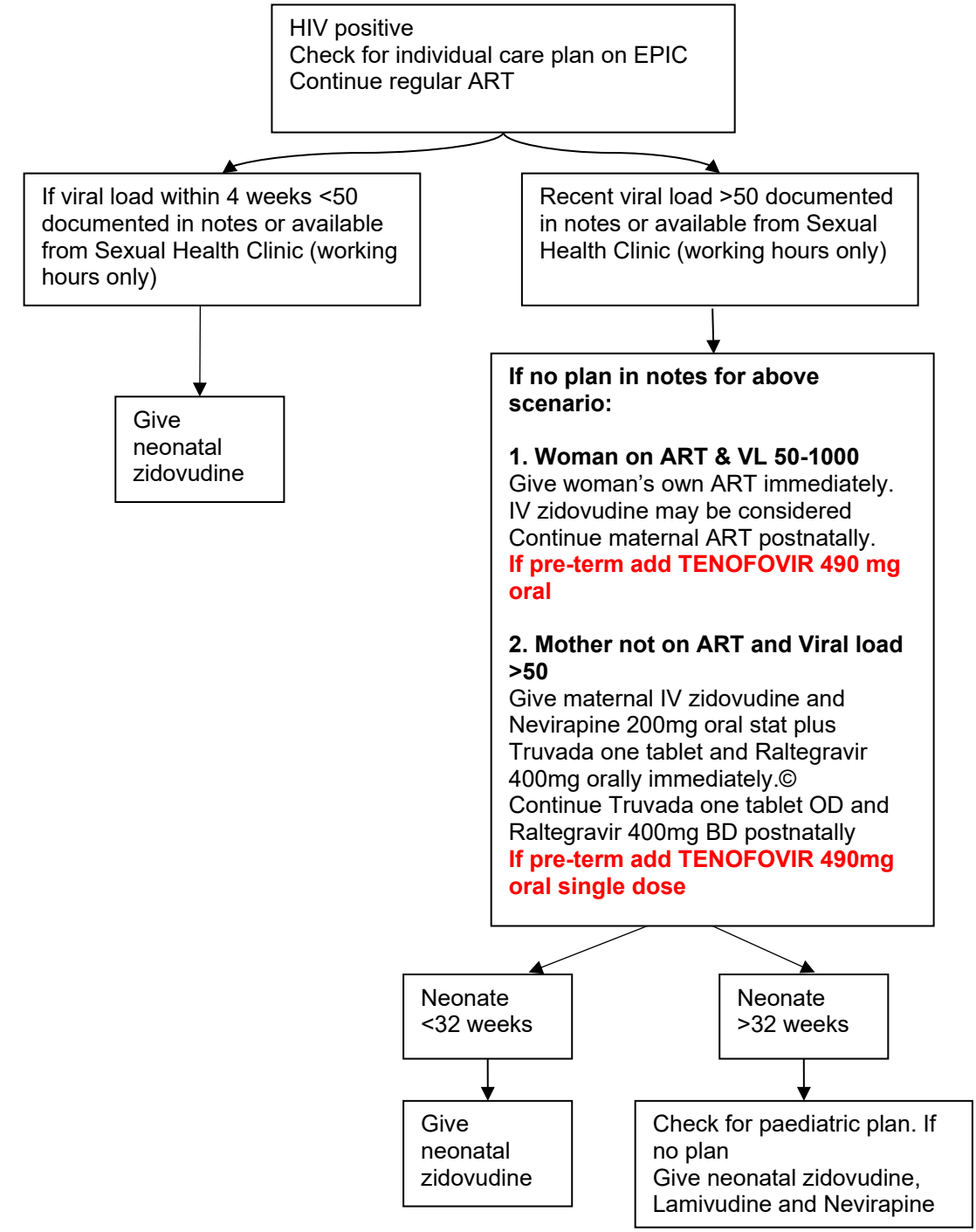
- Who decided to accept/decline a test
- Number found to be infected
- Number who accepted interventions, and which interventions, to reduce vertical transmission

Local statistics are reported to the National Study of HIV in Pregnancy and Childhood

References

1. Foster, C. J. and Lyall, E. G. H. (2006) 'HIV in pregnancy: evolution of clinical practice in the UK', International Journal of STD and AIDS, 17(10), pp. 660-667. Available at: https://doi.org/10.1258/095646206780070983 (Accessed: 20 February 2025).
2. Hawkins, D. et al. (2005) 'Guidelines for the management of HIV infection in pregnant women and the prevention of mother-to-child transmission of HIV', HIV Medicine, 6(supplement 2), pp. 107-148. Available at: https://doi.org/10.1111/j.1468-1293.2005.00302.x (Accessed: 20 February 2025).
3. Kelly, B., Morrison, J. and Hurley, P. (2008) 'Recent developments in HIV and women's health', The Obstetrician and Gynaecologist, 10(1), pp. 42-48. Available at: https://doi.org/10.1576/toag.10.1.042.27377 (Accessed: 20 February 2025).
4. https://www.bhiva.org/file/5bfd30be95deb/BHIVA-guidelines-for-the-management-of-HIV-in-pregnancy.pdf
5. British HIV Association (2014) British HIV Association guidelines for the management of HIV infection in pregnant women 2012. Available at: https://bhiva.org/wp-content/uploads/2024/10/BHIVA-Pregnancy-guidelines-update-2014.pdf (Accessed: 20 February 2025).
6. Coutsoudis A, Dabis F, Fawzi W *et al* Late postnatal transmission of HIV-1 in breast-fed children: an individual patient data meta-analysis. *J Infect Dis* 2004;**189**: 2154-2166
7. Dunn, D. T. et al. (1992) 'Risk of human immunodeficiency virus type 1 transmission through breastfeeding', The Lancet, 340(8819), pp. 585-588. Available at: https://doi.org/10.1016/0140-6736(92)92115-v (Accessed: 20 February 2025).
8. Nduati, R. et al. (2001) 'Effect of breastfeeding on mortality among HIV-1 infected women: a randomised trial', The Lancet, 357(9269), pp. 1651-1655. Available at: https://doi.org/10.1016/s0140-6736(00)04820-0 (Accessed: 20 February 2025).
9. Homsy, J. et al. (2010) 'Breastfeeding, mother-to-child HIV transmission, and mortality among infants born to HIV-Infected women on highly active antiretroviral therapy in rural Uganda', Journal of Acquired immune deficiency syndromes, 53(1), pp. 28-35. Available at: https://doi.org/10.1097/qai.0b013e3181bdf65a (Accessed: 20 February 2025).
10. Kilewo, C. et al. (2009) 'Prevention of mother-to-child transmission of HIV-1 through breastfeeding by treating mothers with triple antiretroviral therapy in Dar es Salaam, Tanzania: the Mitra Plus study', Journal of Acquired Immune Deficiency Syndromes, 52(3), pp. 406-416. Available at: https://doi.org/10.1097/qai.0b013e3181b323ff (Accessed: 20 February 2025).
11. Waters, L. et al. (2017) *BHIVA/BASHH/FSRH guidelines for the sexual & reproductive health of people living with HIV*. Available at: https://bhiva.org/wp-content/uploads/2024/10/SRH-guidelines-for-consultation-2017.pdf (Accessed: 20 February 2025).

Appendix 1: Flow Chart for Management of HIV positive women at birth



© Truvada and Raltegravir are available via pharmacy, labour ward or in PEP packs in A&E or theatres - (Frimley Park). Do NOT use medication abbreviations on prescriptions **Combivir can be given as an alternative to Truvada (Combivir dosage 1 tablet BD)**

Appendix 2: HIV care plan (see guideline) On Epic do not print

Patient label

Specialists	Name	Contact number
Midwives	Kathy Franks	0300 613 6989
FPH Obstetrician	Maud van de Venne	0300 613 4013
HIV / Sexual Health consultant Obstetrician, Solent NHS Trust (based at ACFH and Hampshire Hospitals NHS Trust)	Dr Leela Sanmani	01252 335075
FPH Paediatrician	Sanjay Jaiswal	0300 163 2590
WPH Consultant HIV Physician	Dr Nisha Pal	01753 635300 Mob: through switchboard
WPH Obstetrician	Miss Kaajal Barot	Tel: Mobile through switchboard
WPH Consultant Paediatrician	Dr Angela Yannoulias	Tel: Mobile through switchboard

Timing of diagnosis; Prior to pregnancy ☐
During pregnancy ☐☐ wks

GP ☐ aware ☐ not aware (discuss importance of informing GP)
CMW ☐ aware ☐ not aware (discuss importance of informing CMW)
Birth Partner ☐ aware ☐ not aware
Family ☐ aware ☐ not aware (if any family members unaware)

Consent for copy of clinic letter to be sent to patient's home address Yes☐ No☐

Antenatal care

Vertical transmission ☐ discussed
Antiretroviral therapy (ART) ☐ discussed
Mode of delivery
criteria for vaginal birth ☐ discussed
benefit of caesarean section if above criteria not met ☐ discussed
Avoidance of breast feeding
lactation suppression ☐ discussed
Neonatal ART ☐ discussed

Paediatric referral ☐ discussed
GU infection screens taken ☐ booking ☐ 28 weeks
GTT at 28 weeks (if on ART) ☐

Maternal anti retroviral drugs On Epic do not print

Drug	Dosage	Frequency	Continue postnatally Y/N

Maternal blood results

Date	Gestation	CD4 count x10^6/l	Viral load copies/ml

Intrapartum care

Mode of delivery – finalise plan at 36 weeks

Elective caesarean section ☐ Planned date ☐☐/☐☐/☐☐
Vaginal delivery ☐

Drug chart written in advance ☐

Woman's pre-pregnancy weight ☐☐☐ kg

On Admission:

		Action	Signature
1	Check 36/40 viral load or recent result from Sexual Health Clinic update letter: a) Check pt has taken usual dose of ART medication, if not seek advice from Sexual Health Team. b) If VL >50cpm give extra medication as prescribed above / commence 4 hrs Zidovudine if required.	**Date:** **Gestation:** **Viral Load:** **cpm** ☐ ☐	
2	Ensure Paediatrician aware of pt & need to prescribe baby medication – **1st dose to be given within 4 hours** of delivery. **(No BCG)**	☐	

Maternal blood test:

Take 2 EDTA samples (purple top bottles) and send to virology lab

Complete one standard pathology form -

Request "maternal HIV PCR"

Include on Form "HIV positive mother to "baby name". Please state if HIV-1 or HIV-2 or unknown typing.

Neonatal care On Epic do not print

Date of birth ☐☐/☐☐/☐☐ Time ☐☐:☐☐ Birth weight ☐☐☐☐ gms

Neonatal antiretroviral prophylaxis – must start within 4 hours of birth

Baby's treatment on Delivery Midwife to administer first dose within 4 hours of delivery

For babies 34 weeks and over

- 34-37 weeks = Look at monograph (Appendix 3)
- >37 weeks = Look at monograph (Appendix 3)
- **If Mother undetectable (VL<50cpm) - Zidovudine** Oral Solution (strictly 12 hourly) **for 14 days if women on cART >10 weeks PLUS 2 document maternal VL <50 during pregnancy at least 2 weeks apart PLUS maternal HIV VL <50 at or after 36/40**
- Or 28 days if maternal VL <50 but other above criteria not met

Or

- **If Mother detectable (VL> 50cpm) - Triple therapy** for infant of Zidovudine orally (as above), Lamivudine and Nevirapine. BUT if mother received Nevirapine >3 days duration prior to delivery then autoinduction occurs so higher dose Nevirapine needed
- **NB:** All medication must be labelled by Pharmacy prior to discharge, even if on-call pharmacist needed. All efforts must be made to plan discharge and dispensing from pharmacy during working hours.

For babies <34 weeks

- If the baby is able to tolerate medication orally midwife to give zidovudine oral solution.

Premature <30 weeks – Zidovudine

- If unable to take orally give zidovudine IV until tolerating 50% milk
- Term baby (≥34 weeks) - Intravenous Zidovudine
- Premature baby (<34 weeks) – Intravenous Zidovudine dose is 1.5mg/kg twice daily (increase to QDS at 34 weeks CGA)

Please contact on-call Paediatrician with any queries

Neonatal blood test

Take 2mL EDTA sample within 48 hours after birth so that sample arrives in Virology lab by 15.00 hours Mon-Fri.

Complete one standard pathology form. Include on the form;

test request "Diagnostic retroviral PCR"

clinical details "Neonate of HIV positive mother 'mother's name'

HIV-1 or HIV-2 or unknow typing
Other bloods take FBC, U&E, LFT with usual bottles and forms

Please do not include any other requests (e.g., FBC, U&E) on the same request form as "Diagnostic retroviral PCR" or "Maternal HIV viral load"

POST PARTUM

Follow up with Sexual Health CLINIC ☐
Follow up with paediatric consultant arranged at 4 weeks ☐
Report to National Study of HIV in Pregnancy and Childhood ☐

Appendix 3: Drug dosing for postnatal prophylaxis in infants

This dosing table is for postnatal prophylaxis only.

For postexposure prophylaxis (PEP) during breastfeeding, refer to the Chiva PEP guidelines [1].

For the treatment of infants diagnosed with HIV, see the table of HIV drugs, doses and side effects in the Chiva guidelines [1]. Advice can be sought from the national paediatric virtual clinic (PVC: available here).

Monotherapy

Nucleoside reverse transcriptase inhibitor (NRTI)

Zidovudine (ZDV) (Retrovir®)

Also known as azidothymidine (AZT)

Liquid 10 mg/mL

Oral: see dose banding table opposite

Gestation +/– weight	Dose
<30 weeks' **gestation at birth**	2 mg/kg twice a day
30+0 to 33+6 weeks' **gestation at birth**	2 mg/kg twice a day for 2 weeks then 2 mg/kg three times a day
≥34+0 weeks' gestation at birth and **<2.0 kg**	4 mg/kg twice a day – round dose *up* to the nearest 0.5 mg to assist administration
≥34+0 weeks' gestation at birth and **≥2.01 kg**	See dose banding table

Duration of oral dosing:

- **Low risk monotherapy** – 2 weeks
- **Combination therapy** – 4 weeks

For combination therapy, see guidance below

Intravenous dosing:

- **Born at <34 weeks' gestation** – 1.5 mg/kg twice a day; change to four times a day once reaches 34 weeks' gestation postnatally
- **Born at ≥34 weeks' gestation** – 1.5 mg/kg four times a day

If switching from intravenous to oral dosing, use gestational age at birth to decide appropriate dose from the oral dose table

Anaemia, neutropenia

Weight range (kg)	Oral dose (equivalent to 4 mg/kg) TWICE a day	Volume to be given orally TWICE a day
2.01–2.12	8.5 mg	0.85 mL
2.13–2.25	9 mg	0.9 mL
2.26–2.37	9.5 mg	0.95 mL
2.38–2.50	10 mg	1.0 mL
2.51–2.75	11 mg	1.1 mL
2.76–3.00	12 mg	1.2 mL
3.01–3.25	13 mg	1.3 mL
3.26–3.50	14 mg	1.4 mL
3.51–3.75	15 mg	1.5 mL
3.76–4.00	16 mg	1.6 mL
4.01–4.25	17 mg	1.7 mL
4.26–4.50	18 mg	1.8 mL
4.51–4.75	19 mg	1.9 mL
4.76–5.00	20 mg	2.0 mL

<table>
<tr><th colspan="3">Combination therapy options for high-risk patients – for 4 weeks' duration unless specified</th></tr>
<tr><th>DRUG</th><th>DOSE</th><th>COMMENTS/SIDE EFFECTS</th></tr>
<tr><td colspan="3">Nucleoside reverse transcriptase inhibitors (NRTIs)</td></tr>
<tr><td>Lamivudine (3TC) (Epivir®)

Liquid 10 mg/mL</td><td><u>Oral</u>: round dose <u>up</u> to the nearest 0.5 mg to assist administration

<u>≥32 weeks' gestation at birth</u>: 2 mg/kg twice a day</td><td>Anaemia, neutropenia

(much less common than with zidovudine)</td></tr>
<tr><td>Abacavir (ABC) (Ziagen®)

Liquid 20 mg/mL</td><td><u>Oral</u>: round dose <u>up</u> to the nearest 1 mg to assist administration

<u>≥37 weeks' gestation at birth</u>: 2 mg/kg twice a day</td><td>Hypersensitivity reactions have not been noted in neonates

NB Only to be used with expert input from the PVC</td></tr>
<tr><td>Tenofovir disoproxil (DX)

All doses based on tenofovir DX salt</td><td><u>Oral</u>: round doses <u>up</u> to the nearest 2 mg to assist administration

(*One 245 mg tenofovir DX tablet dispersed in 24.5 mL water = <u>10 mg/mL</u> solution)

<u>≥32 weeks gestation at birth</u>: 4.9 mg/kg (0.49 mL/kg*) once a day [2], see dose banding table:
<table>
<tr><th>Weight range (kg)</th><th>Oral dose to be given ONCE a day (equivalent to 4.9 mg/kg)</th><th>Volume* to be given orally ONCE a day</th></tr>
<tr><td>1.94–2.04</td><td>10 mg</td><td>1.0 mL</td></tr>
<tr><td>2.0–2.44</td><td>12 mg</td><td>1.2 mL</td></tr>
<tr><td>2.45–2.85</td><td>14 mg</td><td>1.4 mL</td></tr>
<tr><td>2.86–3.26</td><td>16 mg</td><td>1.6 mL</td></tr>
<tr><td>3.27–3.67</td><td>18 mg</td><td>1.8 mL</td></tr>
<tr><td>3.68–4.08</td><td>20 mg</td><td>2.0 mL</td></tr>
<tr><td>4.09–4.48</td><td>22 mg</td><td>2.2 mL</td></tr>
<tr><td>4.49–4.89</td><td>24 mg</td><td>2.4 mL</td></tr>
</table></td><td>Renal dysfunction: consider monitoring renal function weekly

NB Only to be used with expert input from the PVC</td></tr>
<tr><td colspan="3">Non-nucleoside reverse transcriptase inhibitor (NNRTI)</td></tr>
<tr><td>Nevirapine (NVP) (Viramune®)

Liquid 10 mg/mL</td><td><u>Oral</u>: round doses <u>up</u> to the nearest 0.5 mg to assist administration

<u>≥34 to <37 weeks' gestation at birth</u>: 4 mg/kg twice a day for the first week of life, increasing to 6 mg/kg twice a day for week 2 then stop

<u>≥37 weeks' gestation at birth</u>: 6 mg/kg twice a day for 2 weeks then stop</td><td>Rash and liver dysfunction – rare in neonates

Stop nevirapine after 2 weeks, in view of long half-life; continue other PEP agents for full 4 weeks</td></tr>
</table>

<table>
<tr><th>DRUG</th><th>DOSE</th><th>COMMENTS/SIDE EFFECTS</th></tr>
<tr><td colspan="3">Integrase inhibitor (INSTI)</td></tr>
<tr><td>Raltegravir (RAL)
(Isentress®)
100 mg sachets for oral suspension
(10 mg/mL after reconstitution)</td><td><u>Oral</u>: see dose banding table
Note: if the mother/birthing parent has taken raltegravir 2–24 hours before delivery, the infant's first dose should be given between 24 and 48 hours after birth
<u>≥37 weeks' gestation at birth</u>: 1.5 mg/kg once a day from birth to day 7, then 3 mg/kg twice a day until 4 weeks of age
<table>
<tr><th>Weight range</th><th>Dose</th></tr>
<tr><td colspan="2">Birth to 1 week – <u>ONCE a day</u> dosing</td></tr>
<tr><td>2 to <3 kg</td><td>4 mg</td></tr>
<tr><td>3 to <4 kg</td><td>5 mg</td></tr>
<tr><td>4 to <5 kg</td><td>7 mg</td></tr>
<tr><td colspan="2">1 to 4 weeks – <u>TWICE a day</u> dosing</td></tr>
<tr><td>2 to <3 kg</td><td>8 mg</td></tr>
<tr><td>3 to <4 kg</td><td>10 mg</td></tr>
<tr><td>4 to <5 kg</td><td>15 mg</td></tr>
</table></td><td>Rash and liver dysfunction: monitor liver function tests at 5–7 days of age
NB Only to be used with expert input from the PVC
Avoid in premature infants</td></tr>
<tr><td colspan="3">Protease inhibitor (PI)</td></tr>
<tr><td>Lopinavir/ritonavir
(Kaletra®)
Liquid
5 mL = (lopinavir 400 mg + ritonavir 100 mg)</td><td><u>Oral</u>: see dose banding table
<u>≥37 weeks' gestation at birth</u>: 300 mg/m² (lopinavir) twice a day
<table>
<tr><th>Weight range (kg)</th><th>Surface area range</th><th>Volume to be given orally TWICE a day</th></tr>
<tr><td>1.00–1.50</td><td>0.10–0.13 m²</td><td>0.5 mL</td></tr>
<tr><td>1.51–2.00</td><td>0.14–0.16 m²</td><td>0.6 mL</td></tr>
<tr><td>2.01–2.50</td><td>0.17–0.19 m²</td><td>0.75 mL</td></tr>
<tr><td>2.51–3.00</td><td>0.20–0.21 m²</td><td>0.8 mL</td></tr>
<tr><td>3.01–3.50</td><td>0.22–0.24 m²</td><td>0.9 mL</td></tr>
<tr><td>3.51–4.00</td><td>0.25–0.26 m²</td><td>1.0 mL</td></tr>
<tr><td>4.01–4.50</td><td>0.27–0.28 m²</td><td>1.1 mL</td></tr>
<tr><td>4.51–5.00</td><td>0.29–0.30 m²</td><td>1.2 mL</td></tr>
</table></td><td>Severe adrenal dysfunction, electrolyte imbalance and cardiogenic shock in neonates, especially premature infants
Avoid in premature infants, only use as per birth plan, when benefit of giving outweighs the potential risks
Monitor for signs of toxicity, check U+E, pH, glucose, lactate, LFT, daily for first 5 days
NB Only to be used with expert input from the PVC</td></tr>
<tr><td colspan="3">Fusion inhibitor (FI)</td></tr>
<tr><td>Enfuvirtide (T-20)
(Fuzeon®)</td><td><u>Intravenous</u>: 2 mg/kg twice a day (as infusion over 30 minutes)
Method: to reconstitute the 108 mg vial, slowly add 1.1 mL water for injections from the vial of diluent provided to the vial of enfuvirtide powder, do not shake or invert the vial. The powder will take up to 45 minutes to dissolve. The resulting solution contains 90 mg in 1 mL. Add 1 mL (90 mg) of the solution to 10 mL water for injections, then further dilute to 45 mL with water for injections, do not shake or invert the syringe. The final solution contains 90 mg in 45 mL (2 mg in 1 mL) from which to administer the required dose. Once prepared administer immediately</td><td>Experimental intravenous dosing regimen
Use only as per birth plan, when benefit of giving outweighs the potential risks
NB Only to be used with expert input from the PVC</td></tr>
<tr><td>Maraviroc (MVC)
(Celsentri®)
Liquid 20 mg/mL</td><td><u>Oral</u>: round doses <u>up</u> to the nearest 2 mg to assist administration
<u>≥37 weeks' gestation at birth</u>: 8 mg/kg twice a day</td><td>There are no efficacy data for maraviroc as PNP. A PK and safety study did not take into account issues of tropism of potentially transmitted virus for the CCR5 co-receptor [3]
NB Only to be used with expert input from the PVC</td></tr>
</table>

LFT, liver function test; PK, pharmacokinetic; U+E, urea and electrolytes.

Full version control record

Version:	3.0
Guidelines Lead(s):	Kaajal Barot, (Consultant Obstetrician WPH), Maud Van De Venne (Consultant Obstetrician FPH)
Contributor(s):	Angela Yannoulias (Consultant Neonatologist)
Lead Director / Chief of Service:	B Sagoo, CoS for Obstetrics and Gynaecology
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This guideline has been registered with the trust. However, clinical guidelines are guidelines only. The interpretation and application of clinical guidelines will remain the responsibility of the individual clinician. If in doubt, contact a senior colleague or expert. Caution is advised when using guidelines after the review date.

This guideline is for use in Frimley Health Trust hospitals only. Any use outside this location will not be supported by the Trust and will be at the risk of the individual using it.

Version History

Version	Date	Guideline Lead(s)	Status	Comment
1.0	June 2016	Maud van de Venne (Consultant Obstetrician – FPH) Dayan Vijeratnam (Consultant GUM – FPH), Noreen Desmond (Consultant GUM – WPH), Eman Jwarah (Consultant Obstetrician – WPH), Stephen Winchester (Consultant Virologist), Julia Trott (Advanced Nurse Practitioner, Serology),	Final	First cross site version
2.0	July 2022	Maud van de Venne, Kaajal Barot	Final	Full review, ratified at OCGC on 04.07.2022, final amendments signed off by CoS A. Deans and DoM E.Luhr on 17.08.2022
3.0	August 2025	Maud van de Venne, Kaajal Barot	Final	Scheduled review. Ratified at Obstetric cross site clinical governance meeting on 11/8/25

Related Documents

None