Frimley Health NHS Foundation Trust

Preterm pre-labour rupture of membranes (PPROM)

Key Points

- Maternal risks are associated with chorioamnionitis
- The fetal risks associated with PPROM which can cause neonatal death are prematurity, sepsis and pulmonary hypoplasia.
- The diagnosis of PPROM should be confirmed by a doctor at training level of ST3 or above (or the equivalent).

Version: 3.1
Date Issued: 22/07/2025
Review Date: 01/12/2027
Key words: Preterm pre-labour rupture of membranes, PPROM, preterm labour, amniotic fluid, NNU, SCBU

This is a controlled document. If you are using a printed copy, check it against the guidelines site to ensure you are using the latest edition. Print copies must be destroyed after use.

Abbreviations

ANC	Antenatal clinic
CTG	Cardiotocograph
DAU	Day assessment unit
EFM	Electronic fetal monitoring
EFW	Estimated fetal weight
FBC	Full blood count
GBS	Group B streptococcus
HVS	High vaginal swab
IUT	In utero transfer
MAC	Maternity assessment unit
MSU	Mid-stream specimen of urine
NNU	Neonatal unit
PPROM	Preterm pre-labour rupture of membranes

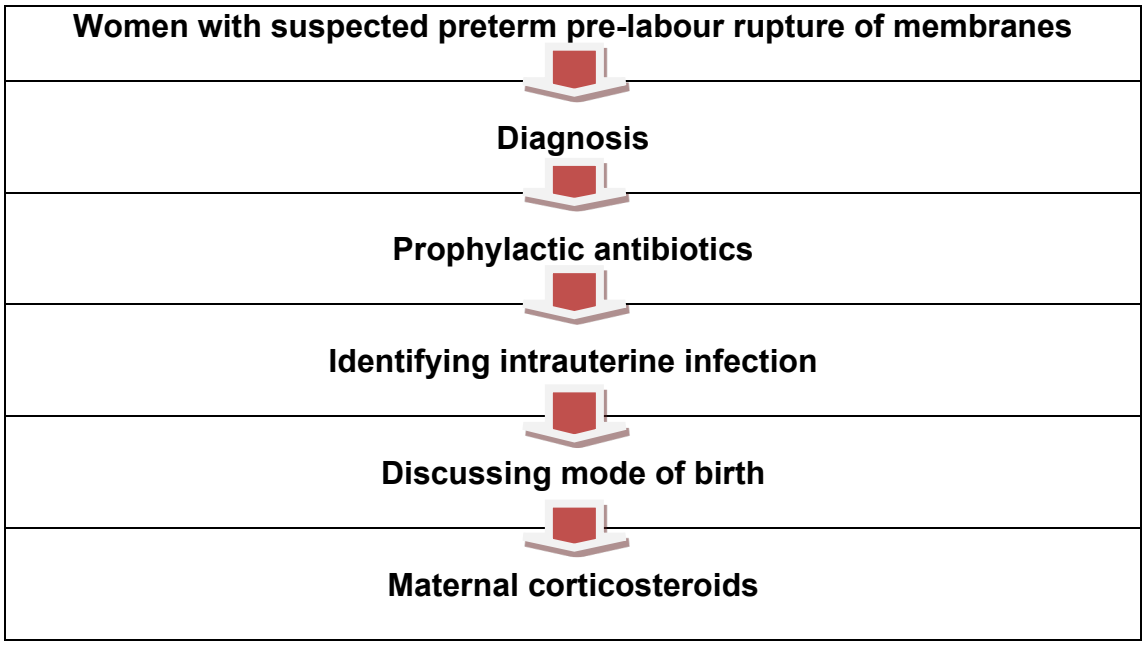
Contents

INTRODUCTION

Preterm pre-labour rupture of membranes (PPROM) complicates only 2% of pregnancies but is associated with 40% of preterm deliveries which can result in serious fetal and maternal complications.

Maternal risks are associated with chorioamnionitis. The fetal risks associated with PPROM which can cause neonatal death are prematurity, sepsis, pulmonary hypoplasia. Infants born with sepsis have a mortality rate four times higher than those without sepsis.

Diagnosing and managing preterm pre-labour rupture of membranes



DIAGNOSIS

The diagnosis of PPROM should be confirmed by a doctor who is at a training level of ST3 or above (or the equivalent).

In a woman reporting symptoms suggestive of PPROM, offer a speculum examination to look for pooling of amniotic fluid and:

- if pooling of amniotic fluid is observed, do not perform any diagnostic test but offer care consistent with the woman having PPROM.
- if pooling of amniotic fluid is not observed, consider performing an insulin-like growth factor binding protein-1 test (**Actim® PROM, see Appendix 1)**.

If the results of the insulin-like growth factor binding protein-1 are positive, do not use the test results alone to decide what care to offer the woman but also consider her clinical condition, her medical and pregnancy history and gestational age, and either:

- offer care consistent with the woman having PPROM **or**
- re-evaluate the woman's diagnostic status at a later time point.

If the results of the **Actim® PROM** test are negative and no amniotic fluid is observed:

- **do not offer** antenatal prophylactic antibiotics.

- explain to the woman that it is unlikely that she has PPROM, but that she should return if she has any further symptoms suggestive of PPROM or preterm labour.

Do not perform diagnostic tests for PPROM if labour becomes established in a woman reporting symptoms suggestive of PPROM.

INVESTIGATIONS

The following investigations should be performed:[1,2]

- MSU
- HVS
- Blood for FBC and CRP[2,3,4]
- Electronic fetal monitoring for at least 20 minutes (if ≥26/40 as per Fetal Monitoring guideline)
- Confirmation of fetal presentation by ultrasound.

Prophylactic antibiotics

Offer women with PPROM oral *erythromycin 250 mg 4 times a day for a maximum of 10 days or until the woman is in established labour (whichever is sooner).

For women with PPROM who cannot tolerate erythromycin or in whom erythromycin is contraindicated, consider oral penicillin for a maximum of 10 days or until the woman is in established labour (whichever is sooner).

Do not offer women with PPROM co-amoxiclav as prophylaxis for intrauterine infection.

*(At the time of publication (NICE November 2015), erythromycin did not have a UK marketing authorisation for use in pregnancy. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented.)

Identifying intrauterine infection

Use a combination of clinical assessment and tests (C-reactive protein, white blood cell count and measurement of maternal and fetal heart rate using cardiotocography) to diagnose intrauterine infection in women with PPROM.

Do not use any one of the following in isolation to confirm or exclude intrauterine infection in women with PPROM:

- a single test of C-reactive protein
- white blood cell count
- measurement of fetal heart rate using cardiotocography.

If the results of the clinical assessment or any of the tests are not consistent with each other, continue to observe the woman and consider repeating the tests and monitoring the trend to dictate management.

MANAGEMENT

- Referral to the obstetric registrar / consultant
- Fetal growth scan to estimate fetal weight.
- Observation for clinical signs of chorioamnionitis e.g., uterine tenderness or offensive vaginal discharge
- Four to eight hourly blood pressure, maternal pulse, temperature, respiratory rate and fetal heart auscultation[9]
- Request IUT if delivery not imminent if PPROM at >/= 22+0 weeks and < 27+0 (singleton) or <28+0 weeks (multiple) or EFW < 800g.
- A daily CTG if appropriate
- The woman should be regularly reviewed for signs of intrauterine infection – an abnormal parameter or a combination of these may indicate infection[9]
- Commence erythromycin 250 mg QDS for 10 days orally, if not in labour

- Antenatal corticosteroids to be offered in line with BAPM guidance to women between 22+0 to 23+6 (survival focused) gestation and between 24 and 34+6 weeks gestation to all women[5].
- Give magnesium sulphate for fetal neuroprotection if less than 32+0 weeks gestation if in established labour or delivery expected within 24 hrs.[17] (see also Preterm Birth guideline)
- Observations: Prior to giving the loading dose of magnesium sulphate baseline observations of temperature, pulse, respiratory rate and oxygen saturations, blood pressure and patella reflexes should be recorded. These should be repeated at the end of the loading dose infusion. Please continue observations as per guidance for Nifedipine if being simultaneously administered.
- There is insufficient evidence to support the use of tocolysis in women with PPROM as there is an increase in maternal chorioamnionitis without significant benefit to the neonate[1]. However, tocolysis may be considered to delay delivery if the woman starts to contract after PPROM at a gestation up to 34+6 weeks of gestation in order to allow administration of antenatal corticosteroids or in-utero transfer provided infection has been excluded [1.] Please ensure there are no contraindications to tocolysis (for example bleeding or infection). If magnesium sulphate is being given or is about to be given, Nifedipine may be given with caution (please check BP, Pulse, RR, O2sats, Patella reflexes).
- If pre-eclamptic, the frequency of observations during the magnesium sulphate infusion should be as per the severity of their condition as per guidance.
- Inform neonatal team/Neonatal Unit (NNU)
- If possible, arrange for the woman to visit NNU for orientation, neonatal counselling may also be appropriate.
- The woman should be admitted to the antenatal ward for at least 48 hours before consideration for home management[1,10,11.]
- Women being monitored at home for PPROM should be advised of the signs and symptoms of chorioamnionitis. They should take their temperature 3 times a day[9]

Arrange a weekly visit to DAU/MAC / ANC to review management. A HVS and maternal FBC need not be included in DAU/MAC visits as the sensitivity of these tests in the detection of intrauterine infection is low[9]

Intrapartum management

Women whose pregnancy is complicated by PPROM after 22+0 weeks' gestation and who have no contraindications to continuing the pregnancy should be offered expectant management until 37+0 weeks; timing of birth should be discussed with each woman on an individual basis with careful consideration of patient preference and ongoing clinical assessment[16].
If a woman has preterm prelabour rupture of membranes after 34+0 weeks (but before 37+0 weeks) and has had a positive group B streptococcus test at any time in their current pregnancy, offer immediate induction of labour or caesarean birth (NICE, 2021).

Also, delivery should be considered at earlier gestations if there are:

- Signs of infection
- Intrauterine death
- Vaginal bleeding
- Significant meconium stained liquor.

The intrapartum management should include:

- Continuous electronic fetal monitoring (CEFM) (if ≥26/40)[12]
- Normal intrapartum observations
- Intrapartum antibiotic prophylaxis (as per antimicrobial guidelines. Cover for GBS should be included)
- If maternal pyrexia is ≥38 °C, see guideline for prevention of maternal infection - sepsis pathway.
- Neonatal team at delivery

After the birth, follow the guideline for the Management of Early Infection Risk in Newborns.

AUDITABLE STANDARDS

Referral to the obstetric registrar
Administration of antibiotics
Continuous EFM in labour
Baby's observations following birth

MONITORING

This guideline will be subject to three yearly audit. The audit midwife is responsible for coordinating the audit. Results presented to the department clinical audit meeting. Action plans will be monitored at the quarterly department clinical governance meeting.

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 policy has been subject to an Equality Impact assessment.

REFERENCES

1. Royal College of Obstetricians & Gynaecologists (2019) Care of women presenting with suspected preterm prelabour rupture of membranes from 24+0 weeks of gestation (Green-top Guideline no. 73). Available at: https://www.rcog.org.uk/guidance/browse-all-guidance/green-top-guidelines/care-of-women-presenting-with-suspected-preterm-prelabour-rupture-of-membranes-from-24plus0-weeks-of-gestation-green-top-guideline-no-73
2. Willekes, C. (2017) 'Prelabor rupture of the membranes' in James, D. et al. (eds.) High-risk pregnancy: management options. 5th edn. Cambridge: Cambridge University Press, pp. 1655-1764.
3. Lewis DF, Major CA, Towers CV, Asrat Y, Harding JA, Garite TJ (1992). Effects of digital vaginal examination on latency period in preterm premature rupture of membranes. *Obstet Gynecol* 80; 630-4.
4. Yoon BH, Jun JK, Park KH et al (1996). Serum C-reactive protein, white blood cell count, and amniotic fluid white blood cell count in women with preterm premature rupture of membranes. *Obstet Gynecol* 88, 1034-1040.
5. Oxford AHSN Health Innovation Oxford & Thames Valley Maternity Network: use of antenatal corticosteroids: singletons and multiple births Version 1 (Updated Nov 2024)
6. Carlan SJ, O'Brien WF, Parsons MT, Lense JJ (1993). Preterm premature rupture of membranes: a randomised study of home versus hospital management. Obstet Gynecol; 81 (1): 61-4.
7. Hoffmann D, Hansen G, Ingardia C, Philipson E (1992). Preterm premature rupture of membranes: Is outpatient management appropriate? Society for Perinatal Obstetrics abstract. no. 467. American Journal of Obstet and Gynaecol; 166:403.
8. National Institute for Clinical Excellence. (2001). *The use of electronic fetal monitoring: the use and interpretation of cardiotocograph in intrapartum fetal surveillance, Inherited Clinical Guideline C*. London
9. Oxford AHSN maternity network steering group 2015. http://www.oxfordahsn.org/wp-content/uploads/2015/05/Prelabour-Preterm-SROM-part-of-Extreme-Preterm-bundle-Oxford-AHSN-Maternity-Network-Guideline-v1.pdf
10. RCOG Magnesium sulphate and Nifedipine (query bank) 2016. https://www.rcog.org.uk/en/guidelines-research-services/guidelines/magnesium-sulphate-and-nifedipine---query-bank/
11. Care of Women Presenting with Suspected Preterm Prelabour Rupture of Membranes from 24+0 Weeks of Gestation. RCOG Green-top Guideline, June 2019. https://obgyn.onlinelibrary.wiley.com/doi/abs/10.1111/1471-0528.15803
12. Neuroprotective dose for severe preterm birth. Impey, L. and Black, R. (2020) Oxford AHSN regional maternity guideline: guideline for magnesium sulphate use: loading dose for sever pre-eclampsia /eclampsia and neuroprotective dose for severe preterm birth. Available at: https://www.patientsafetyoxford.org/wp-content/uploads/2020/04/MgSO4-bolus-guideline-V3-update.pdf .
13. National institute for health and care excellence (2021) Inducing labour NG207 https://www.nice.org.uk/guidance/ng207 Accessed 09.12.2024

APPENDIX 1 – ACTIM PROM TEST INDICATION

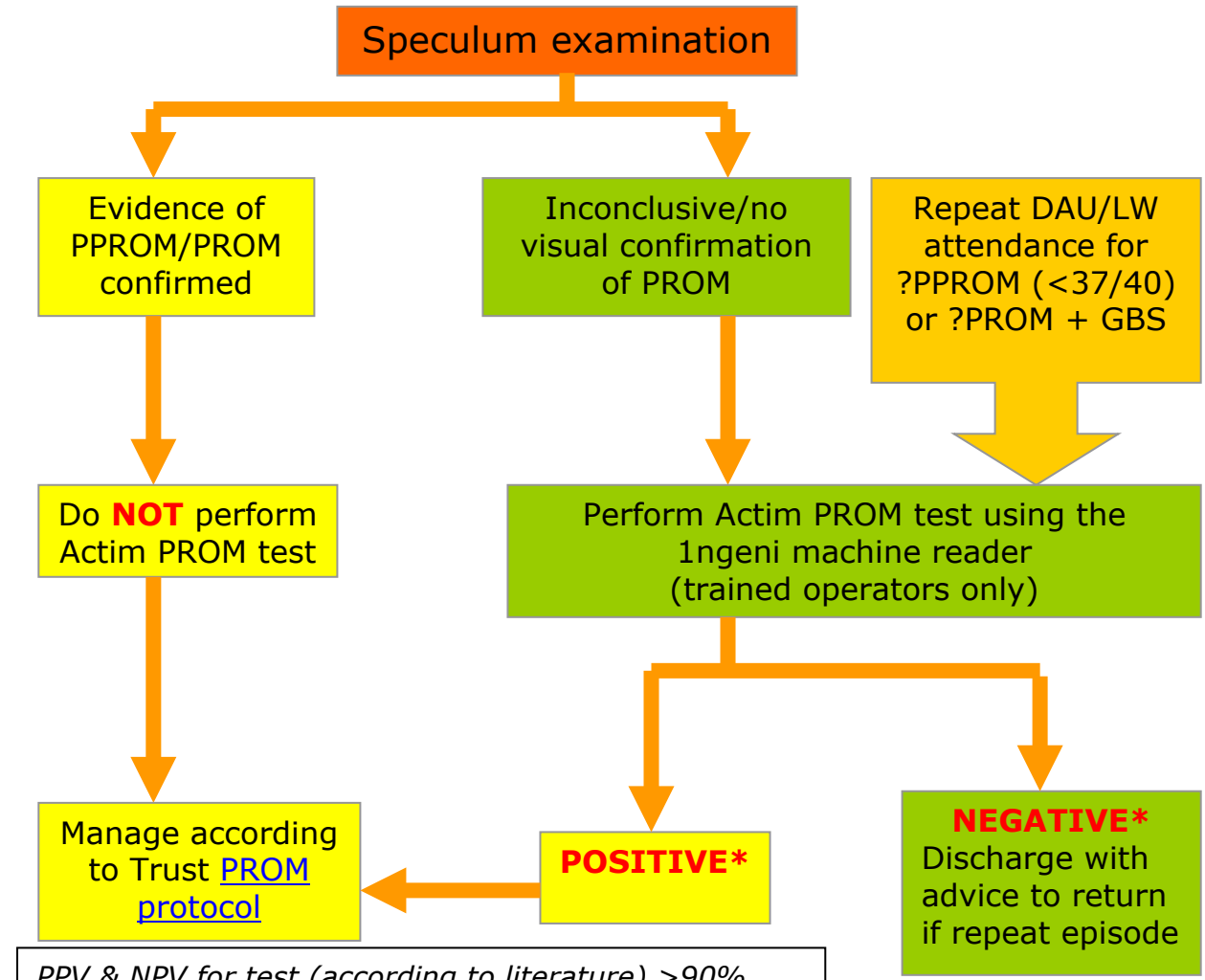
Actim PROM IGFBP-1
Test Indication Flowchart

Suitable for women 14+ weeks gestation and history consistent with Suspected Rupture of Membranes (SRM) or recurrent attendance with ?SRM.

- ✓ suspected Preterm Prelabour Ruptured Membranes (**PPROM)** (<37/40)
  NB: Presentation at <37/40, examination to be authorised by registrar or consultant
- ✓ suspected Prelabour Ruptured membranes (PROM) + known GBS positivity
- ✓ suspected PROM + history of GBS affected baby
- ✓ suspected PROM + Planned GBS prophylaxis

Collect samples for Actim PROM test prior to digital examination or transvaginal ultrasound

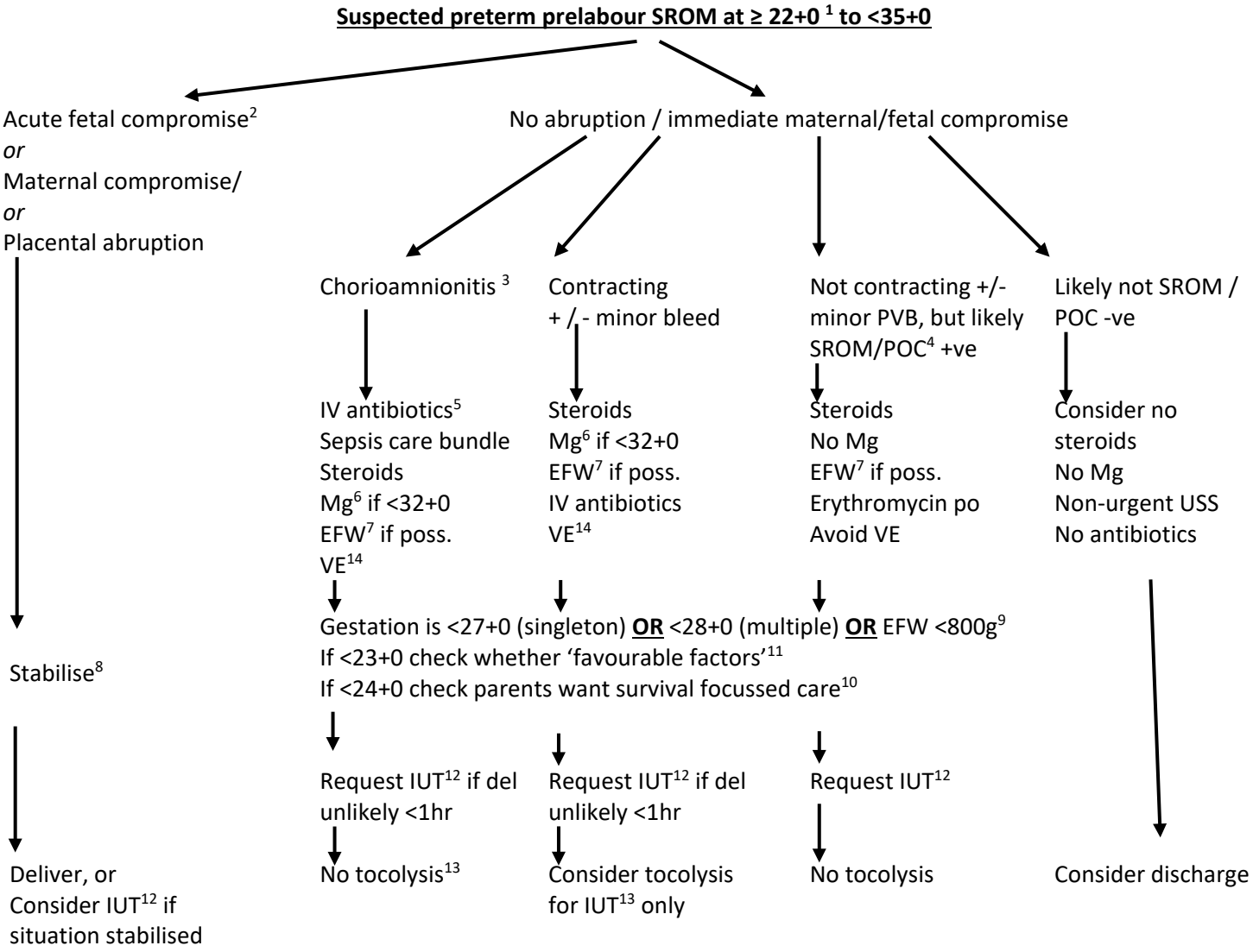
Samples taken >12 hours post cessation of leakage may give false negative results due to degeneration of IGFBP-1



PPV & NPV for test (according to literature) >90%
**False negatives & false positives are possible. Refer to Standard Operating Procedure for further information.*

APPENDIX 2: OXFORD AHSN ALGORITHM FOR MANAGEMENT OF PRETERM PRELABOUR SPONTANEOUS RUPTURE OF MEMBRANES

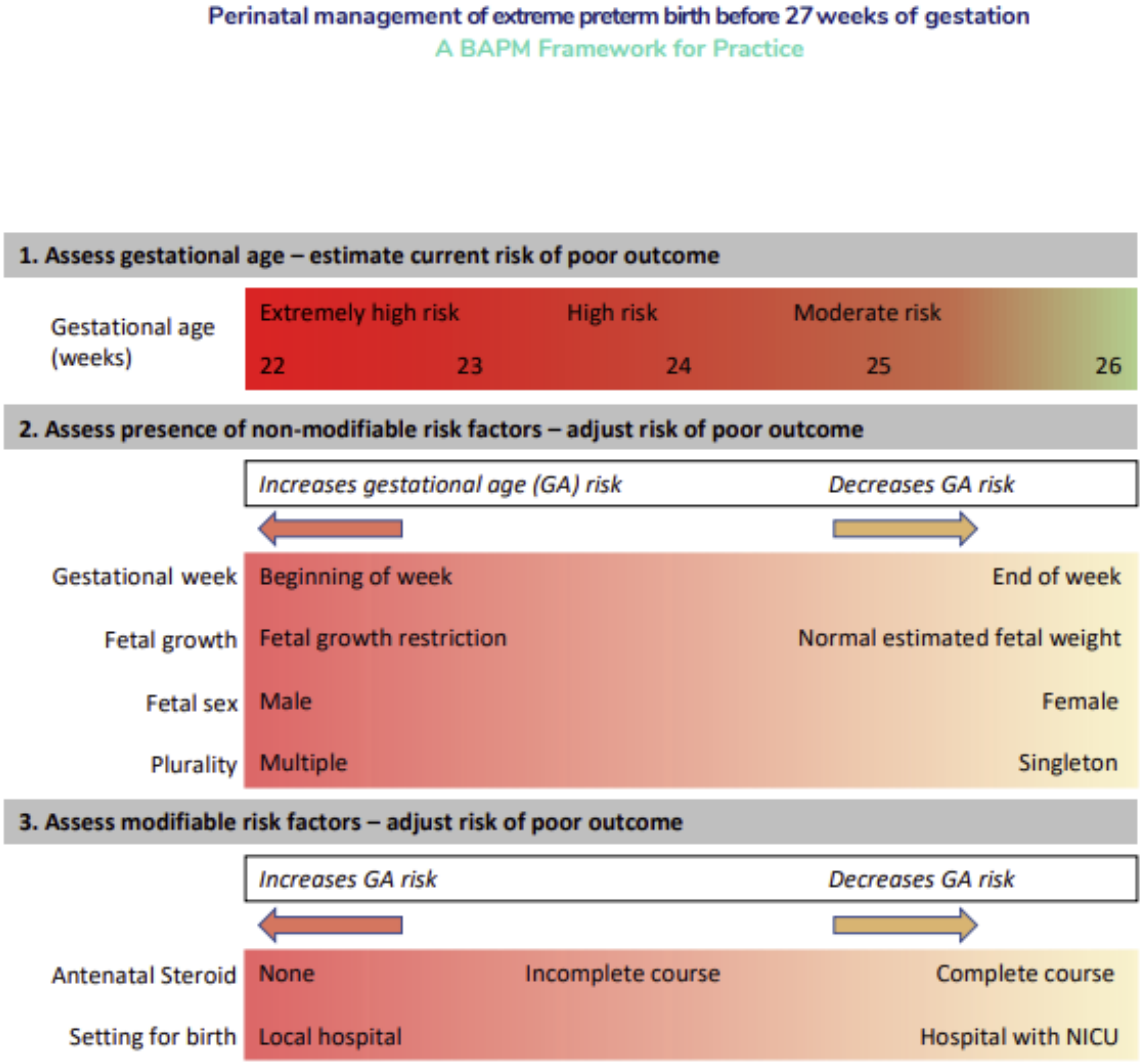
Version 4 (Updated Nov 2024)



Footnotes:

1. Gestation brought forward in line with BAPM. Ensure correct dates.
2. CTG to be used only >/=26+0 weeks. In OUH only CTGs are performed from 25+0 w but outside L3 NNU risks associated with false positive rate likely to outweigh benefits.
3. Chorioamnionitis is very common at presentation of severely preterm SROM and may be subtle. Early IVABs (<1hr of diagnosis), see local sepsis guideline. Confirmed chorioamnionitis requires delivery, but this can usually be after transfer, if IUT criteria are met.
4. POC: point of care test for SROM (e.g. Actim Prom). Beware of high false positive rate particularly if history poor.
5. IV antibiotics. Follow unit antibiotic guideline; avoid co-amoxiclav
6. Mg: Magnesium bolus 4g (16mmol) Magnesium Sulphate as 20mls of 20% magnesium sulphate IV over 5 – 10 minutes. If <32+0 weeks. Note PReCePT suggests 30 but clinical benefit up to 32 weeks.
7. EFW: estimated fetal weight +/-15% if possible. Presentation.
8. Stabilisation of acutely unwell mother beyond scope of this. Early IVABs (<1hr of diagnosis) essential, see local sepsis guideline.
9. Criteria for delivery in Level 3 Neonatal Unit. If criteria not met follow local guideline
10. At <24+0 IUT should not take place if parents are clear that survival-focused neonatal care is not appropriate. Neonatal review advised. Operative birth in fetal interest contraindicated.

11. Favourable factors: singleton, not FGR, steroids given, absence of clinical evidence of sepsis, no prolonged (<20w) SROM, female gender (and birth in L3 unit). Discuss with on call consultant. See BAPM infographic below.
12. For IUT: try OUH first. Between 08:00-21:30 call Delivery Suite (01865 221987/8) and specifically request to speak to the consultant obstetrician on Delivery Suite. DO NOT call NICU or Delivery Suite manager first. Between 21:30 - 08:00, call OUH switchboard (01865 741166) and request to speak to the obstetric consultant on call. If IUT is agreed between 21:30-08:00 , then call Delivery Suite (01865 221987/8) to complete required handover forms. If no OUH availability, access PeriDASH South East Perinatal Maternity Bed and Neonatal Cot Locator - Power Apps. and SONeT (Southampton Oxford Neonatal Transport)
13. Tocolysis. Follow unit tocolysis guideline. Do not use nifedipine if magnesium given or to be given.
14. Duration of labour very variable and unpredictable. Discussion with OUH advised.



Guideline: Health Innovation Oxford & Thames Valley Maternity Network: Management of Preterm Prelabour SROM
Version 4 (Updated Nov 2024)
Author: Mr Lawrence Impey, Health Innovation Oxford & Thames Valley Maternity Clinical Lead

FULL VERSION CONTROL RECORD

Version:	3.1
Guidelines Lead(s):	M. Molloholli
Contributor(s):	Anne Deans, S. Gaur
Lead Director / Chief of Service:	Anne Deans
Library check completed:	19.09.2024
Ratified at:	Cross Site Obstetric Clinical Governance meeting, 16th December 2024 and Chair's action 20.01.2025
Date Issued:	22/07/2025
Review Date:	01/12/2027
Pharmaceutical dosing advice and formulary compliance checked by:	C. Mukoko, R. Ahmed 18.09.2024
Key words:	Preterm pre-labour rupture of membranes, PPROM, preterm labour, amniotic fluid, NNU, SCBU

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	April 2018	M. Molloholli	Final	First cross site version, approved at cross site OGCG 18 April 2018
1.1	December 2019	M. Molloholli	Interim	Intrapartum management (page 6, first paragraph) amended to align with RCOG Green top guideline.
1.2	September 2020	Amendment by B. Sagoo	Interim	Gestational age for steroids changed in line with new Preterm labour guidance
2.0	July 2021	M. Molloholli	Final	Scheduled review
2.1	Aug 2022	M. Molloholli	Interim	Page 9, gest. age updated for MgSO4 in line with preterm labour guideline. Approved as chair's action 15.11.22 (A.Deans CoS, E. Luhr DoM)
3.0	January 2025	M. Molloholli	Final	Ratified at Cross Site OCGC, 16 December 2024. Aligned with BAPM and amendment approved as Chair's action 20.01.2025 by A.Deans
3.1	April 2025	R Robbshaw	Interim	Correction on page 5 (of gestational age for steroids) to

				align with algorithm in Appendix 2 and preterm labour guideline. Signed as Chair's action by B.Sagoo on 25.06.2025.

Related Documents

Document Type	Document Name
Guideline	Antenatal Fetal Heart Rate Monitoring
Guideline	Intrapartum Fetal Heart Monitoring
Guideline	Preterm Birth – Reducing Incidence and Management
Guideline	Early Infection Risk in Newborns
Guideline	Sepsis in Pregnancy and Puerperium
Guideline	Prelabour Rupture of Membranes at Term