# Pre Labour Rupture of the Membranes (Preterm and Term)

University Hospitals of Leicester NHS Trust

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Contents

1. Introduction and Who Guideline applies to ..... 1
Related documents: ..... 1
2. Guideline Standards and Procedures ..... 2
Pre-labour rupture of the membranes ..... 2
Pre-labour Rupture of Membranes (adapted from Maternity Assessment Unit UHL Obstetric Guideline) ..... 2
Assessing ruptured membranes ..... 3
Preterm pre-labour rupture of membranes (PPROM) ..... 3
**Term pre-labour rupture of membranes** ..... 5
**Flow chart 1: Management pre-labour rupture of membranes of Term babies** ..... 9
**Flow chart 2: Management pre-labour rupture of membranes of Preterm babies** ..... 10
3. Education and Training ..... 11
4. Monitoring Compliance ..... 11
5. Supporting References ..... 11
6. Key Words ..... 11

## 1. Introduction and Who Guideline applies to

These guidelines have been developed to provide the best available evidence for use in the management of women who present with pre labour rupture of the membranes, either preterm or at term gestations.
This guideline applies to all healthcare professionals providing care for pregnant women with pre labour rupture of the membranes receiving care at UHL.

**Related documents:**

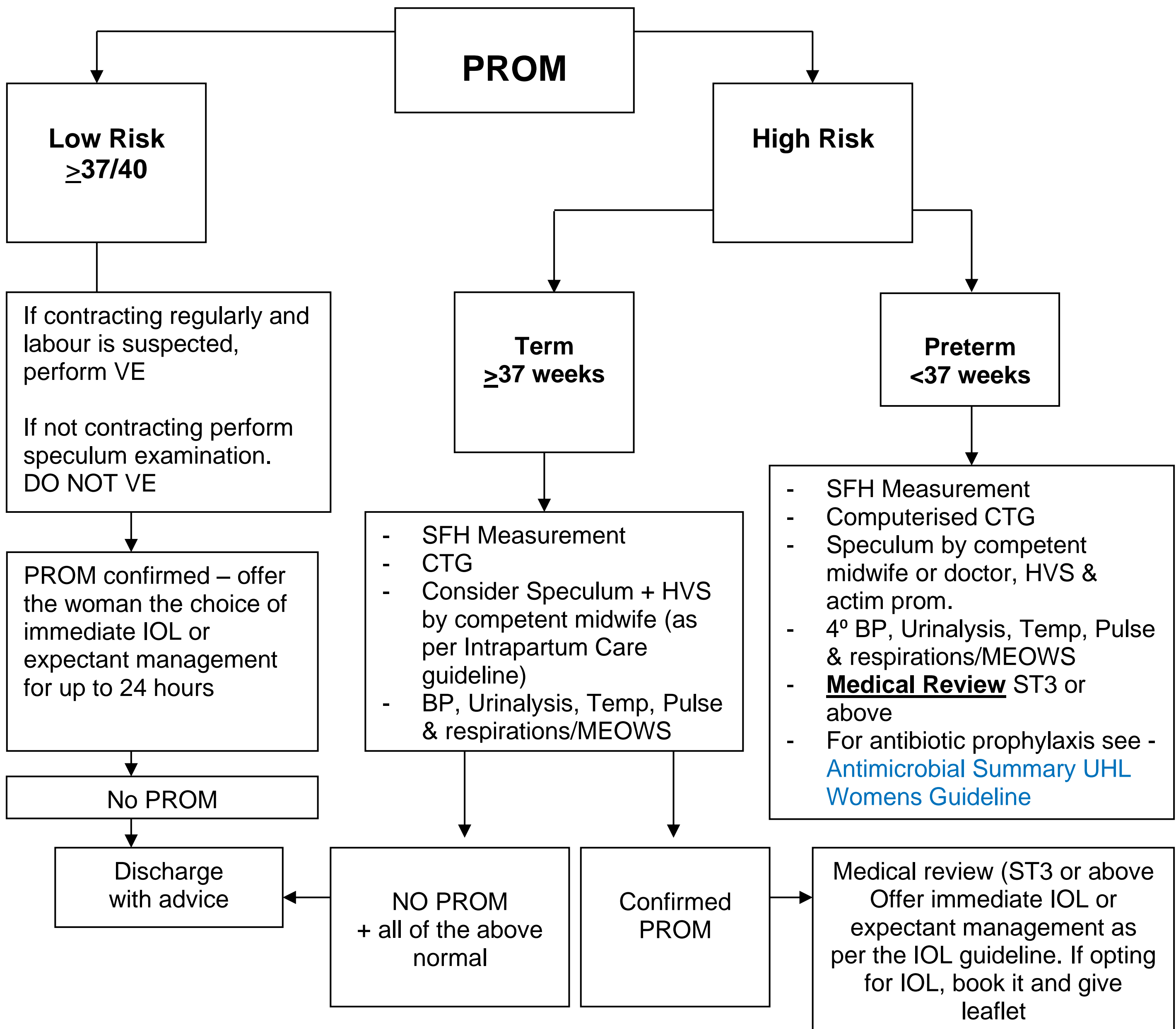
- Induction and Augmentation of Labour UHL Obstetric Guideline UHL Trust ref: C131/2005
- Intrapartum Care UHL Obstetric Guideline UHL Trust ref:C60/2019
- Fetal Monitoring in Labour UHL Obstetric Guideline UHL Trust ref:C23/2021
- Consent to Examination or Treatment UHL Policy UHL Trust ref:A16/2002
- Chaperone UHL Policy UHL Trust ref:B39/2008
- Group B Streptococcus in Pregnancy and the Newborn UHL Obstetric Guideline UHL Trust ref:C97/2008
- Maternity Assessment Unit UHL Obstetric Guideline UHL Trust ref:C29/2008
- Vaginal Birth After Caesarean Section UHL Obstetric Guideline UHL Trust ref:C83/2005

## Pre-labour rupture of the membranes

Pre-labour rupture of membranes (PROM) is the rupture of the fetal membranes before the onset of labour. In most cases, this occurs near term, but when membrane rupture occurs before 37 weeks' gestation, it is known as preterm PROM (P-PROM). Preterm PROM complicates approximately 3% of pregnancies and leads to 30-40% of preterm births. It increases the risk of prematurity and leads to a number of other perinatal and neonatal complications such as prematurity, sepsis, cord prolapse, pulmonary hypoplasia, chorioamnionitis and placental abruption (RCOG 2019).

Where women present with suspected pre-labour rupture of the membranes, unless there are regular uterine contractions, vaginal examinations (VEs) should be avoided to reduce the risk of infection. Confirmation of ruptured membranes should be assessed through either pad checks or speculum examination.

**Pre-labour Rupture of Membranes (adapted from Maternity Assessment Unit UHL Obstetric Guideline)**



## Assessing ruptured membranes

**Methods of assessment;**

- **Verbal history –**
  Gush and continues to leak – assess maternity pad to confirm liquor
  Trickle – request maternity pad is applied and review
  Single episode no further loss - request maternity pad is applied and review
- **Maternity pad check –**
  Colour of liquor
  Clear evidence of ruptured membranes
  Pad dry, no evidence of ruptured membranes but significant history of SRM – offer speculum to assess
- **Speculum -**
  Consider;
  Gestation, Actim prom – please note; Actim prom assessment is not indicated post 37/40 gestation.

In a woman reporting symptoms suggestive of P-PROM, 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 P-PROM
- If pooling of amniotic fluid is not observed, perform an Actim Prom. If the results of the Actim Prom test are positive, do not use the test results alone to decide what care to offer the woman, but also take into account her clinical condition, medical and pregnancy history and gestational age, and either:
- offer care consistent with the woman having P-PROM

**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 she has P-PROM, but that she should return for reassessment if there are any further symptoms suggestive of P-PROM or preterm labour. (NICE NG 25 2022)

## Preterm pre-labour rupture of membranes (PPROM)

From the NICE guideline (NG207 Inducing labour): If a woman has preterm pre- labour rupture of membranes, induction of labour should not be carried out before 34+0 weeks, unless there are additional obstetric indications (for example, infection or fetal compromise). The woman should receive oral antibiotics in line with the UHL Antimicrobial Summary UHL Womens Guideline for 10 days or until delivery of the baby, whichever are sooner and IM steroids if these have not been given previously.

If a woman has preterm pre-labour rupture of membranes after 34+0 weeks and before 37+0 weeks, the maternity team should discuss the following factors with her before a decision is made about whether to induce labour or to have expectant management until 37+0 weeks:

- Risks to the woman (e.g. sepsis or possible need for caesarean section)
- Risks to the baby (e.g. sepsis or problems relating to preterm birth)
- Availability of neonatal intensive care facilities

- The woman’s individual circumstances and her preferences.

Women with P-PROM from 34+0 weeks onwards who are Group B Streptococcus (GBS) positive should be offered immediate induction of labour or caesarean section (dependent on the plan for mode of birth). See Group B Streptococcus in Pregnancy and the Newborn UHL Obstetric Guideline.

Women with confirmed P-PROM in the first instance must have bloods sent for full blood count (FBC) and CRP. If previously midwife-led care, a referral must be made to the general obstetrics clinic for on-going pregnancy management. Women with confirmed P-PROM should initially be managed as an inpatient for a minimum of 72 hours. Following this, if the overall clinical assessment does not indicate active infection or a compromised fetus, the woman may be managed as an outpatient.

Outpatient management P-PROM

Monitoring at home after initial inpatient management can be considered:

- Outpatient management should be made on an individual basis. Distance from hospital and support at home should be taken into account. As well as presentation of fetus (increased risk of cord prolapse if non-cephalic), parity and communication skills (especially if the patient does not speak English).
- Patient education about: Date and time of next ANC appointment and advise women that sexual intercourse and tampons should be avoided.
- If under outpatient management and is 32+0 weeks gestation or less, ensure that the woman knows to present to LRI if she has any concerns

Women who are confirmed P-PROM will require:

- A minimum of weekly bloods for FBC and CRP taken by the midwives on the wards, in the antenatal assessment area (AAA - LRI) or pregnancy assessment service (PAS - LGH). The results are followed up by the ward, AAA or PAS midwives (dependent on where the woman is located).
- 2 weekly ultrasound scans for fetal growth, liquor volume and uterine artery Doppler.
- Premature prevention clinic <28/40, General obstetric clinic >28/40 appointment for consultation with consultant obstetrician for an individualised plan for timing and mode of birth.
- Neonatal input at gestations <35 weeks or if there are additional complications.
- Advice to take maternal temperature 4 hourly in waking hours at home and advice of signs of infection.

A combination of clinical assessment (maternal pulse, blood pressure, respiratory rate, temperature and symptoms), maternal blood tests (CRP and white cell count) and fetal heart rate should be used to diagnose chorioamnionitis in women with P-PROM; these parameters should not be used in isolation. Women should be advised of, and observed for, symptoms of clinical chorioamnionitis (lower abdominal pain, abnormal vaginal discharge, fever, malaise and reduced fetal movements (RCOG 2019).

The timing of birth, whether by induction or caesarean section, should be agreed with an Obstetric Consultant and the method of induction if used should follow that indicated below in the ‘Term Pre-labour Rupture of Membranes’ section below. Balloon catheter induction is not appropriate in women with rupture of membranes.

For timings and indications for corticosteroids and magnesium sulphate, please follow the guidance in the Preterm Labour Guidance in the Absence of PPROM UHL Obstetric Guideline. Intrapartum, these women will be advised to have intravenous antibiotics in labour in line with the Group B Streptococcus in Pregnancy and the Newborn UHL Obstetric Guideline.

Organise transfer to LRI, if at LGH and <32 weeks gestation.

Extreme P-PROM

Rupture of membranes prior to 24+0 weeks gestation occurs in less than 0.4% of pregnancies.

If they remain in utero until they reach viability, there is a higher risk of intrauterine death, sepsis, pulomonary hypoplasia, limb contracture and placental abruption in addition to the risks of extreme prematurity compared to later gestation PPROMs, especially in the presence of severe and persistent oligohydramnios.(Hocq C).

Consideration of steroids or MgSO4 require consultant discussion between 23-23+6 weeks.

## Term pre-labour rupture of membranes

Women at ≥ 37+0 weeks gestation, with current or previous Group B streptococcus, HIV, Hepatitis B or C infection should all be offered immediate induction of labour following confirmation of rupture of membranes.

Women with confirmed pre-labour rupture of membranes without the above risk factors at ≥ 37+0 weeks gestation should be advised that:

- Risk of serious neonatal infection is around 1%
- 60% will labour spontaneously within 24 hours

These women should be offered a choice of:

- Expectant management for up to 24 hours after the time of rupture of membranes.
- Immediate induction of labour.

Discuss the benefits and risks of these options with the woman, taking into account her individual circumstances and preferences.

There will be times where immediate induction of labour may not be possible due to staffing and capacity; these issues should be discussed with the woman, coordinator, on call consultant and matron, and an individualised documented plan made regarding when the induction can be facilitated.

Vaginal prostaglandins in the form of prostin rather than Propess® should be used if indicated by the Bishop score. One dose of prostin 3mgs only should be given for women with a closed or very unfavourable cervix (Bishop Score <6), followed 6 hours later by oxytocin infusion. The decision to administer prostin should only be undertaken following an SBAR review by an obstetrician ST5 or above, taking into account current MEOWS score and other risk factors which will determine the individual's suitability for prostin rather than immediate induction with oxytocin infusion.

Balloon catheter induction is not appropriate with ruptured membranes.

To reduce the risk of infection VE's should be kept to a minimum. If the woman is not contracting, a vaginal examination should **not** be performed before starting oxytocin infusion. Following the commencement of oxytocin contractions should be established for 4 hours before vaginal examination unless there are maternal or fetal concerns.

## Induction of labour for pre-labour rupture of membranes with vaginal birth after caesarean section (VBAC)

For women having VBAC, they should not receive either Propess or Prostin. Instead, a vaginal examination by a senior obstetrician should be offered. Where the cervix is favourable, they should proceed to oxytocin infusion after careful counselling about the increased risk of uterine rupture (approximately increase from 1:200 to 1:100) compared with spontaneous labour. Where they do not wish to proceed with IOL, or where IOL is felt to be clinically inappropriate, they should be offered a category 3 caesarean section within 24 hours following rupture of the membranes (unless there are other maternal or fetal concerns - this should ideally occur within daytime hours but not unduly delayed).

## Declined induction of labour

Women may choose to decline induction of labour and we support woman in their right to do so. Where induction of labour has been offered for either maternal or fetal indications (rather than solely for maternal request), it is important that the risks and benefits of declining induction have been fully discussed and understood by the woman. The woman should be offered the opportunity to discuss this further with an Obstetric doctor (ST3 or above). For women at home or at St Mary's birth centre and declining induction for pre-labour rupture of membranes, it is appropriate to invite her to attend the Maternity Assessment Unit so that further assessment can be made, appropriate counselling given and an individual management plan made. All conversations should be fully documented in the maternal notes.

## PROM monitoring advice

Women who are not contracting and are an inpatient with PROM should have maternal observations for BP, pulse, respirations and temperature, and fetal heart rate auscultation with a Doppler, performed a minimum of 4 hourly in waking hours. High risk women with PROM, or where the membranes have been ruptured for greater than 24 hours, should have an individualised plan made by the obstetric team regarding the frequency of CTG monitoring. Where a woman starts to have contractions a CTG should be repeated and observations and fetal heart rate should then continue through the night.

Women who are outpatients with PROM should be advised, where possible, to take their temperature at least 4 hourly in waking hours. They should be advised to contact the hospital **immediately** if:

- The colour of water changes to yellow or green or has an offensive smell
- They feel unwell, hot , shivery or sweaty
- They have a temperature over 37.5 degrees centigrade
- They lose any blood other than a "show"
- They have reduced fetal movements
- They have sharp pains that are there all the time
- They are worried at all

## Postnatal

### Postnatal monitoring of the newborn

Monitoring of the newborn should be in line with Postnatal Ward Handbook UHL Neonatal Guideline and Antibiotics for Neonatal Infection UHL Neonatal Guideline ‘. The key points to consider are:

- In babies with any red flags (Table 1 and Table 2), or with two or more ‘non-red flag’ risk factors or clinical indicators (Table 3 and Table 4), perform investigations and start antibiotic treatment always within 1 hour of the decision to treat. Do not delay starting antibiotics pending the test results.
- In babies without red flags and only one risk factor or one clinical indicator, *using clinical judgement*, consider
  - whether it is safe to withhold antibiotics, and
  - whether it is necessary to monitor the baby’s vital signs and clinical condition for at least 12 hours.
  - In term babies, Newborn Early Warning Score (NEWS) is indicated where there is pre-labour ROM >24 hours. Well babies with pre labour PROM <24 hours with no other risk factors or clinical indicators do not require NEWS.
- In babies being monitored for possible infection, if clinical concern increases, consider performing necessary investigations and starting antibiotic treatment.

**Table 1. ‘Red Flag’ risk factors for early-onset neonatal infection**

| | **Red Flag Risk Factors** |
|---|---|
| **1.** | Suspected or confirmed infection in another baby in the case of a multiple pregnancy |

**Table 2. ‘Red Flag’ clinical indicators of possible early-onset neonatal infection (observations and events in the baby)**

| | **Non Red Flag Risk Factors** |
|---|---|
| **1.** | Apnoea (in a term baby) |
| **2.** | Seizures |
| **3.** | Need for cardiopulmonary resuscitation |
| **4.** | Need for mechanical ventilation (in a term baby) |
| **5.** | Signs of shock |

**Table 3. ‘Non Red Flag’ risk factors of possible early-onset neonatal infection**

| | **Non Red Flag Risk Factors** |
|---|---|
| **1.** | Invasive group B streptococcal infection in a previous baby or maternal GBS |

| | |
|---|---|
| | colonisation, bacteriuria or infection in the current pregnancy |
| **2.** | Preterm birth following spontaneous labour before 37 weeks gestation |
| **3.** | Confirmed rupture of membranes for > 18 hours before a preterm birth |
| **4.** | Confirmed pre-labour rupture of membranes at term for > 24 hours before onset of labour |
| **5.** | Intrapartum fever* > 38°C if there is suspected or confirmed bacterial infection |
| **6.** | Clinical diagnosis of chorioamnionitis |

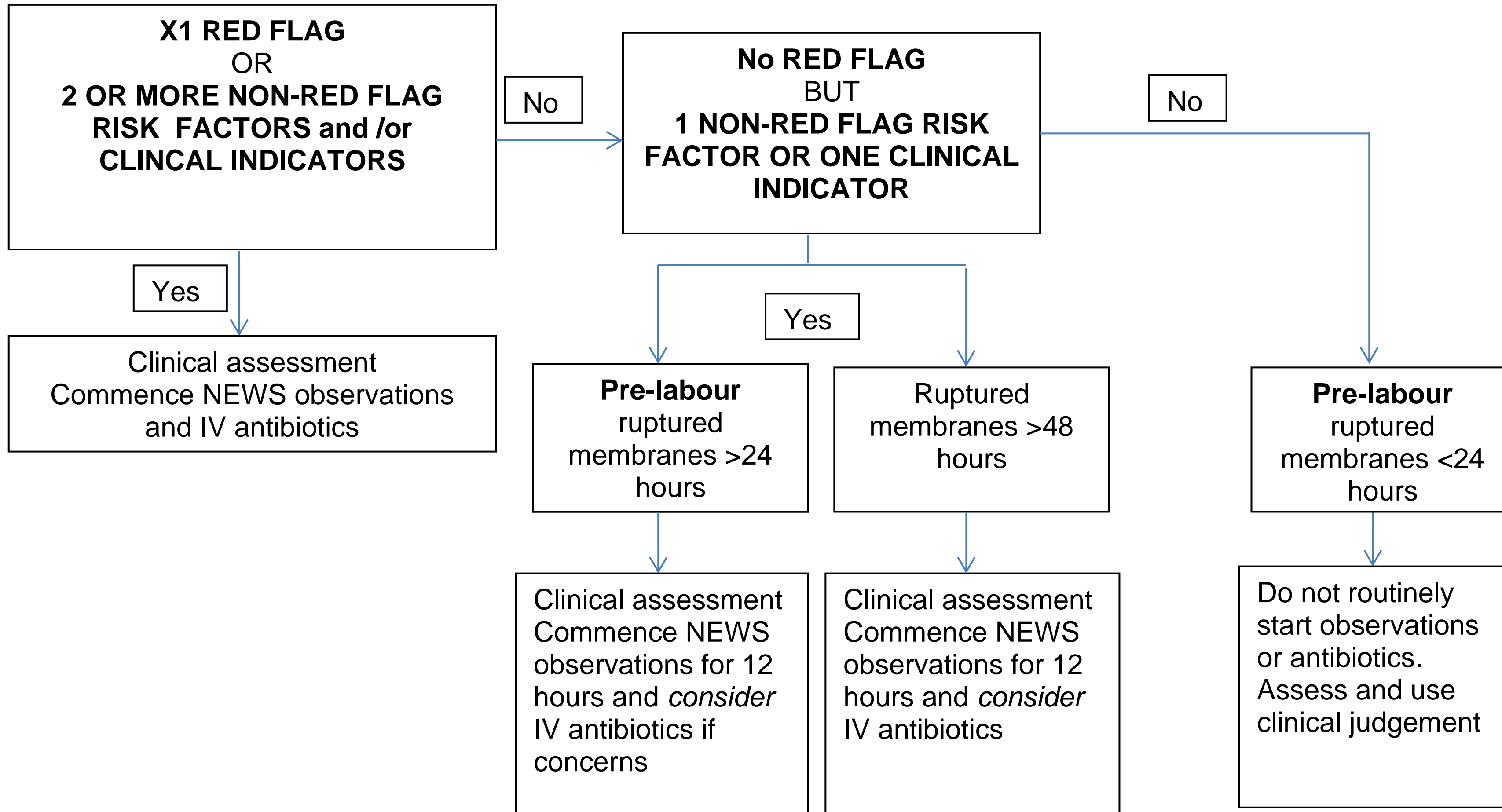
*Refer to Pyrexia and Sepsis in Labour UHL Obstetric Guideline in addition to discussion with obstetrician to review maternal history, clinical status, antibiotic treatment and investigations (including CRP, blood culture if available)

**Table 4. 'Non Red Flag' clinical indicators of possible early-onset neonatal infection (observations and events in the baby)**

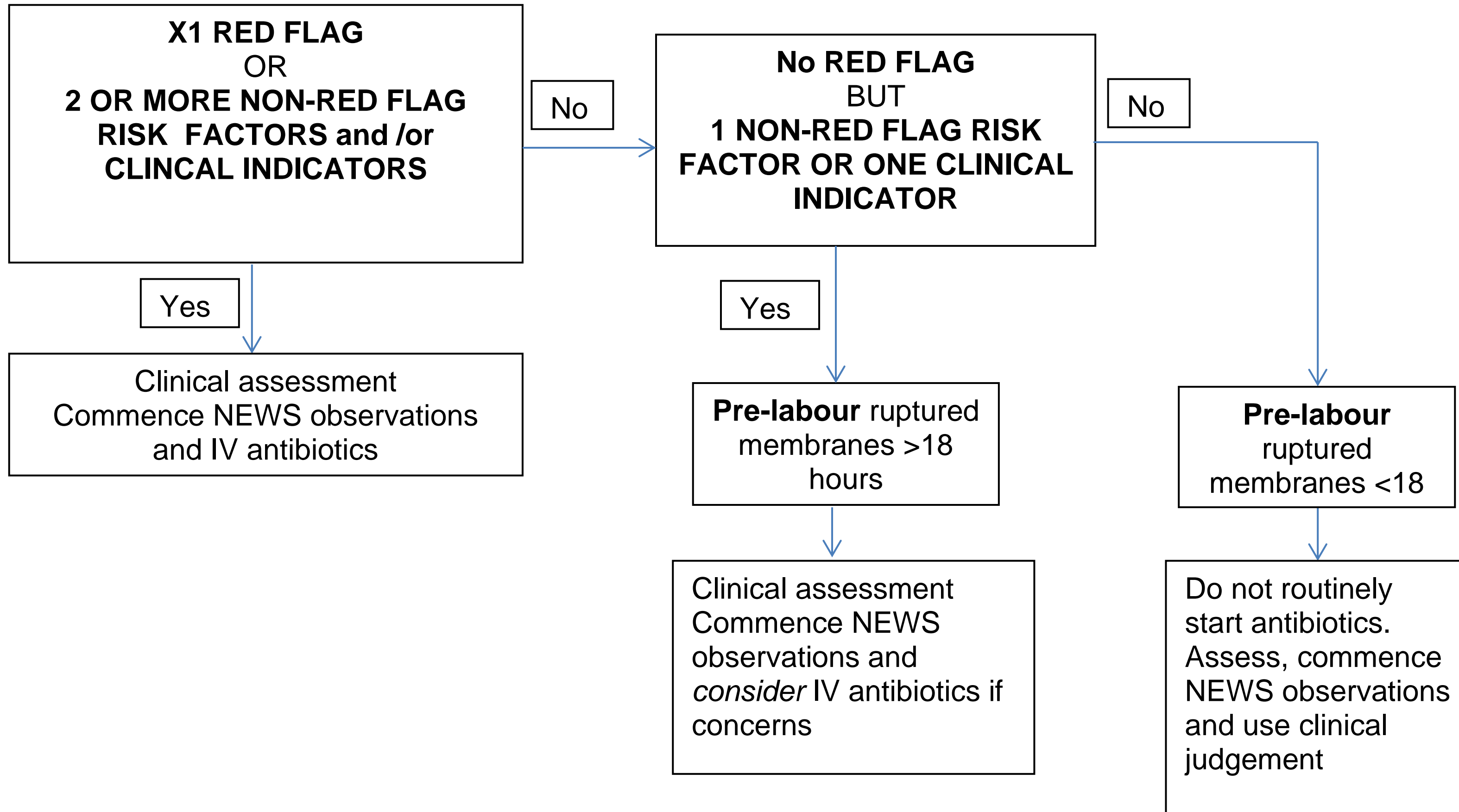
| | **Non Red Flag Clinical Indicators** |
|---|---|
| **1.** | Altered behaviour or responsiveness |
| **2.** | Altered muscle tone (e.g. floppiness) |
| **3.** | Feeding difficulties (e.g. feed refusal) |
| **4.** | Feed intolerance including vomiting, excessive gastric aspirates and abdominal distension |
| **5.** | Abnormal heart rate (bradycardia and tachycardia) |
| **6.** | Signs of respiratory distress (including grunting, recession, tachypnoea) |
| **7.** | Signs of neonatal encephalopathy |
| **8.** | Hypoxia (e.g. central cyanosis or reduced oxygen saturation level) |
| **9.** | Jaundice within 24 hours of birth |
| **10.** | Persistent pulmonary hypertension of newborns |
| **11.** | Temperature abnormality (<36°C or >38°C) unexplained by environmental factors |
| **12.** | Unexplained excessive bleeding, thrombocytopenia, or abnormal coagulation |
| **13.** | Altered glucose homeostasis (hypoglycaemia or hyperglycemia) |
| **14.** | Metabolic acidosis (base deficit of ≥10 mmol/Litre) |

See flow charts 1 and 2 below for the management of both term and preterm pre-labour rupture of the membranes.

# Flow chart 1: Management pre-labour rupture of membranes of Term babies



## Flow chart 2: Management pre-labour rupture of membranes of Preterm babies



## 3. Education and Training

None

## 4. Monitoring Compliance

None

## 5. Supporting References

NICE (2015 – updated 2022) Preterm labour and birth https://www.nice.org.uk/guidance/ng25 (accessed 28/06/22)

NICE (2021) Inducing Labour NG207 https://www.nice.org.uk/guidance/ng207 (accessed 28/06/22)

RCOG (2019) Care of Women Presenting with Suspected Preterm Prelabour Rupture of Membranes from 24+0 Weeks of Gestation (Green-top Guideline No. 73), 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/ (accessed 28/06/22)

Hocq C, Van Grambezen B, Bernard P, Debauche C. Impact of gestational age at PPROM on the short-term outcome of children born after extreme and prolonged preterm prelabor rupture of membranes in an experienced care center. Signa Vitae 2017;13(2):63-70 .

## 6. Key Words

Actim prom, Induction of labour, Fibronectin, Liquor

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**The Trust recognises the diversity of the local community it serves. Our aim therefore is to provide a safe environment free from discrimination and treat all individuals fairly with dignity and appropriately according to their needs.**
**As part of its development, this policy and its impact on equality have been reviewed and no detriment was identified.**

<table>
<tr><th colspan="4">CONTACT AND REVIEW DETAILS</th></tr>
<tr><td colspan="3">Guideline Lead (Name and Title)<br>H Fakoya – Consultant Midwife</td><td>Executive Lead<br>Chief Nurse</td></tr>
<tr><td colspan="4">Details of Changes made during review:</td></tr>
<tr><td>Date</td><td>Issue Number</td><td>Reviewed By</td><td>Description Of Changes (If Any)</td></tr>
<tr><td>June 2022</td><td>1</td><td>Neonatal Consultants<br>S Dunkerton – Cons Obstetrician<br>Maternity guidelines group<br>Maternity Governance Committee</td><td>New guideline</td></tr>
</table>