NHS North West

NORTH WEST GUIDELINE

DIAGNOSIS AND MANAGEMENT OF PRETERM PRELABOUR RUPTURE OF MEMBRANES

Document Control:

Role	Name	Contact
Owners	North West Coast SCN Greater Manchester and Eastern Cheshire SCN	
Project Clinical Lead(s) – GMEC	Dr Ghazia Saleemi	Ghazia.saleemi@mft.nhs.uk
Project Clinical Lead – C&M	Dr Rachel McFarland	Rachel.McFarland@lwh.nhs.uk
Project Clinical Lead – L&SC	Dr Rineke Schram	
Project Lead Author(s)	Dr Ffion Jones Dr Laura Goodfellow Dr Angharad Care	Ffion.jones1@lwh.nhs.uk Laura.goodfellow@liverpool.ac.uk Angharad.care@liverpool.ac.uk

Version control:

Title	
V1	Steering Group meeting between SCNs to co-ordinate development of collaborative guideline (May 2023); draft version sent for comments: Sept 2023. GMEC network ratification: 9th February 2024 C&M network ratification: 11th January 2024 NW Regional Guidelines Group ratification: Sept 2024 NWC MatCEG ratification: Sept 2024

Compliant with:

1.	RCOG (Royal College of Obstetricians and Gynaecologists) Green Top Guideline no 44: Preterm Prelabour Rupture of Membranes. June 2019.
2.	NICE guidelines – Preterm Labour and Birth. June 2022.
3.	Saving Babies Lives Care Bundle. Version 3. June 2023.
4.	RCOG Green Top Guideline: Antenatal Corticosteroids to reduce neonatal morbidity and mortality. February 2022.

Authors

Please list all authors here:

Dr Ffion Jones	Liverpool Women's Hospital
Dr Laura Goodfellow	University of Liverpool
Dr Angharad Care	University of Liverpool

Acknowledgements:

On behalf of the two strategic clinical networks across the Northwest of England, we would like to take the opportunity to thank all the contributors for their engagement, enthusiasm and dedication supporting the development of this NW Regional Guideline for Preterm Prelabour Rupture of Membranes. Once fully ratified and endorsed, this guideline will be available for adoption throughout the Northwest to ensure parents and families universally receive consistent and high-quality care.

-***Dr Ffion Jones*** *– Sp.Registrar in Obstetrics & Gynaecology, Clinical Research Fellow in Preterm Birth*
-***Dr Ghazia Saleemi*** *– GMEC SCN Maternity Clinical Lead, GMEC Preterm Birth Lead*

Conflict of Interest:

None	

Contents

1 Summary / Introduction

This guideline applies to those with suspected or confirmed preterm pre-labour rupture of membranes (PPROM) from 16^{+0} weeks to 36^{+6} weeks of pregnancy. The guideline provides recommendations for diagnosis, management, and care. This guideline can be used in conjunction with the Northwest Preterm Birth guideline (April 2023).

Within this document, we use the terms woman and women's health. However, it is important to acknowledge that it is not only people who identify as women for whom it is necessary to access women's health and reproductive services to maintain their gynaecological health and reproductive wellbeing. The delivery of care must therefore be appropriate, inclusive, and sensitive to the needs of those individuals whose gender identity does not align with the sex they were assigned with at birth.

2 Purpose

The aim of this guideline is to provide recommendations to encourage consistency in clinical practice across the North West of England, which will facilitate the care for patients transferring between hospitals within this region. However, the importance of individualised care planning and shared decision-making should be at the forefront of any clinician's mind.

In order to provide a structured format for this guideline, we have divided guidance according to the gestation at which PPROM occurs, due to key differences for counselling and management.

1. PPROM 16^{+0} – 21^{+6} weeks of pregnancy
2. PPROM 22^{+0} – 26^{+6} weeks of pregnancy
3. PPROM 27^{+0} – 33^{+6} weeks of pregnancy
4. PPROM 34^{+0} - 36^{+6} weeks of pregnancy

3 Scope

Preterm pre-labour rupture of the membranes (PPROM) is defined as spontaneous rupture of the membranes prior to 37 weeks' gestation and before regular onset of uterine activity. Care of women with signs of active labour is covered by the North-West Preterm Birth Guideline.

This guideline only refers to care of women who present with evidence of PPROM *without* symptoms of active labour. This document covers the care of women with PPROM in the Chesire & Mersey, Greater Manchester & East Cheshire and Lancashire & South Cumbria Regions. This guideline compliments the RCOG Care of Women Presenting with Suspected Preterm Prelabour Rupture of Membranes from 24+0 Weeks of Gestation (Green-top Guideline No. 73)[1] and NICE guideline 25.[2]

There are no current (June 2024) national or international guidelines for care of women with PPROM under 24 weeks' gestation. Therefore this part of the guideline is based on currently

available best evidence and expert opinion.

4 Responsibilities

This guideline is intended for use for healthcare professionals involved with the care of mothers and babies affected by PPROM (midwives, gynaecology nurses, obstetricians, gynaecologists and anaesthetists).

4.1 QUICK REFERENCE CHART for diagnosis and management

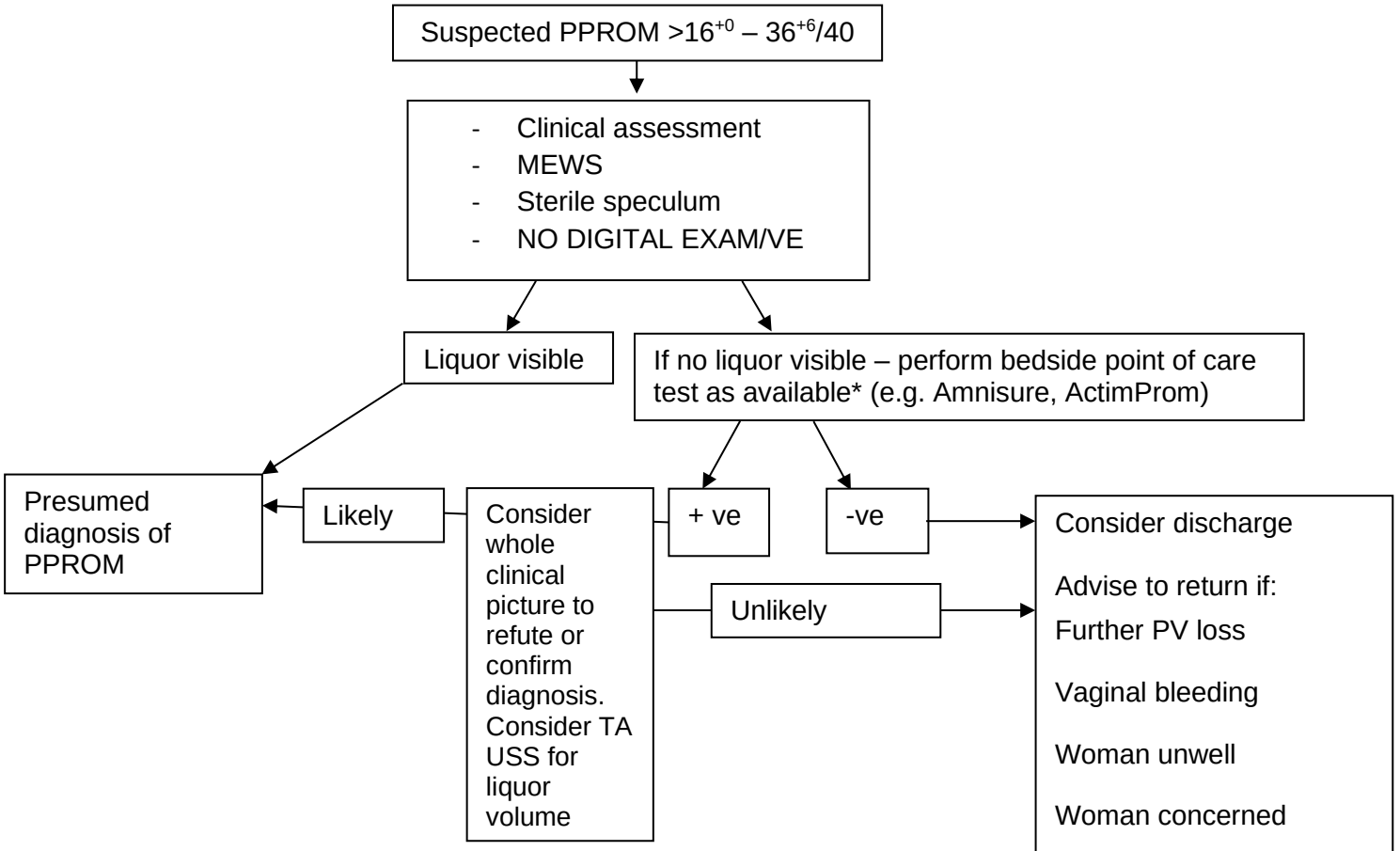
IF THERE IS EVIDENCE OF SEPSIS AT ANY GESTATION EXPEDITE DELIVERY

Commence IV antibiotics depending on local protocol (e.g. IV Ceftriaxone 2g OD + IV Metronidazole 500mg BD)

If baby is having survival focused care – inform neonatal team

Obstetric consultant input

Delaying delivery in women who are well but have signs of sepsis, has little advantage, and may lead to clinical deterioration. [3]



Investigations if PPROM diagnosed:

- FBC, CRP and ensure valid Group and Save
- HVS (for yeast infection and bacterial vaginosis)
- LVS + ano-rectal swab (for Group B Streptococcus)
- Consider MSSU
- Transabdominal ultrasound scan for fetal presentation
- <26+0 weeks gestation- auscultate fetal heart and record rate
- 26+0 or more weeks gestation- computerised CTG, record baseline rate

Women should be advised about and observed for symptoms of chorioamnionitis (lower abdominal pain, abnormal vaginal discharge, fever, malaise and reduced fetal movements)

Gestation	Plan of care at diagnosis
16^{+0} - 21^{+6} weeks' gestation	**Counselling** by senior obstetrician (ST3+). PPROM under 24 weeks gestation leaflet (Appendix 1) can be used to help counsel patient. **Place of care:** Offer inpatient management for at least 72 hours, with care led by the obstetric team / consultant with appropriate obstetric experience. - Chorioamnionitis can be a cause or consequence of PPROM. We recommend close inpatient observation in the immediate period following PPROM - There is a 39% chance of birth within the first 7 days after PPROM[4] **Prophylactic antibiotics:** ***Prior to 20^{+0} weeks gestation*** Individual clinical decision - Take into consideration patient's preferences, to give or withhold prophylactic antibiotics (e.g., erythromycin for 10 days). - Once a decision has been made, we do not advocate new or additional courses of prophylactic antibiotics throughout the pregnancy. *See 'antibiotic' section below for counselling points.* ***20^{+0} weeks gestation and beyond*** - Consider prophylactic antibiotics e.g. erythromycin 250mg QDS po for 10 days or until in established labour **Additional Investigations**: As per flowchart 1 plus: Next working day - Consider transabdominal ultrasound scan to assess liquor volume and fetal position. The role of ultrasound assessment of amniotic fluid is unclear. Ultrasound examination demonstrating oligohydramnios may be useful to support the clinical diagnosis of PPROM.[1] If the diagnosis of PPROM was made by bedside test alone and USS shows normal liquor volume consider re-evaluating the diagnosis using the whole clinical picture.[5] **Observations:** - Minimum 6 hourly MEWS assessment and escalation as per MEWS policy **Senior review:** Consultant led review as soon as possible and within 14 hours of admission (as per NICE quality standard 174)[6] **Corticosteroids:** Withhold steroids until survival focussed care confirmed at a later gestation. It is particularly difficult to time steroids when delivery is unpredictable, and this should be discussed with the woman, but it is reasonable to wait for signs of labour or other clinical change if delivery not deemed imminent. **Magnesium Sulphate:** Withhold until survival focused care is confirmed at a later gestation and women are either in established preterm labour or having a planned preterm birth within 24 hours. As per NW Preterm birth guideline[7].

16^{+0} - 21^{+6} weeks' gestation (continued)	**Create a plan of care including:** 1) Initial decision for continuation of pregnancy or termination of pregnancy for medical reasons, or follow up if a decision is not yet made 2) Frequency of observations and investigations 3) Location of care 4) Additional emotional support for the woman and her partner 5) Daily consultant review whilst inpatient. Seek evidence for confirmation of diagnosis of PPROM if diagnosis uncertain. 6) If suspicion of chorioamnionitis/ sepsis immediate escalation to consultant if termination might be required 7) If the 20 week Fetal Anomaly Screening Programme (FASP) scan has not been performed prior to PPROM then consider performing this in the fetal medicine department (when due). This is due to the potential difficulty of visualisation with reduced liquor, the association between PPROM and fetal anomalies,[8] and the sensitive counselling required with early PPROM . **Preparation for transfer to level 3 neonatal unit** - Patients should be transferred to a unit with level 3 neonatal care at the gestation at which they are planned to receive survival focused care of the neonate. If undecided, consider teleconference or transfer to level 3 unit for further discussion.
22^{+0}- 26^{+6} weeks gestation	**Counselling** by senior obstetrician (ST3+) with joint neonatology input. Appendix 1 (PPROM under 24 weeks gestation) and/or RCOG patient information leaflet[9] (PPROM 24 weeks' gestation and beyond) can be used to help counselling Complete extreme preterm pathway (as per NW PTB guideline proforma)[7] and determine whether opting for: termination of pregnancy (PPROM under 24 weeks' gestation or additional anomalies present); continuation of pregnancy with comfort focused care or; survival focused care. **Place of care:** Transfer to Level 3 unit if *survival focus care* is agreed, for early discussion with cot bureau Inpatient maternity management for at least 72 hours, with a low threshold for longer admission up to 27 weeks' gestation. Decisions about place of care should be made with discussion with the women (and her family) depending upon: - Patients' preferences - Whether having survival focused care, or comfort focused care - Distance of woman's home from the hospital. Consider whether she has ambulance cover to a level 3 NNU when at home. - Position of the baby in utero (higher risk of cord prolapse/aftercoming head entrapment with transverse or breech position)[1] - PV bleed / signs of placental abruption - Other pathology / previous obstetric history **Prophylactic antibiotics (if no signs of infection):** - Offer prophylactic antibiotics (e.g., erythromycin or alternative as advised by microbiology if allergic) for 10 days or until in established labour - During established labour give IV Benzylpenicillin for prevention of early onset Group B Streptococcus infection (GBS) (or alternative if penicillin allergic), if active management of baby.

22^{+0}- 26^{+6} weeks gestation (continued)	**Corticosteroids**: Offer steroids following joint counselling if survival focused care is planned in line with North West Preterm Birth Guideline (June 2023) - The benefit of AN steroids in reducing intraventricular haemorrhage, respiratory distress syndrome and death is only seen if birth occurs in the 7 days after administration of a full course. Consideration can be given to withholding steroids until a later gestation if delivery is not deemed imminent (for example if PPROM occurred >48 hours prior to diagnosis). - Do not delay delivery if there are signs of infection in order to administer two doses of steroids, but a single dose still confers some benefit to the baby and so should be offered if possible Note: The white cell count will rise 24 hours following administration of corticosteroids and should return to baseline 3 days following administration. Therefore, CRP, fetal heart rate and maternal clinical wellbeing are more useful markers to identify infection following administration of steroids.[10] **Magnesium Sulphate:** Offer in established labour for survival focussed care or if having a planned preterm birth within 24 hours in line with North West Preterm Birth Guideline (June 2023)[7] **Additional Investigations:** As per flowchart 1 plus: Next working day: - Transabdominal USS should be performed to assess liquor volume, estimated fetal weight(s) and fetal position(s). The role of ultrasound assessment of amniotic fluid is unclear. Ultrasound examination demonstrating oligohydramnios may be useful to support the clinical diagnosis of PPROM.[1] If the diagnosis of PPROM was made by bedside test alone and USS shows normal liquor volume consider re-evaluating the diagnosis considering the whole clinical picture.(*4*) **Observations:** - Minimum 6 hourly MEWS assessment and escalation as per MEWS policy - Twice daily auscultation of fetal heart (under 26^{+0} weeks' gestation) or computerised CTG (26^{+0} weeks' gestation and beyond) and record baseline rate **Assessment for chorioamnionitis:** Use a combination of clinical assessment, maternal blood tests (CRP and WCC) and fetal heart rate to diagnose chorioamnionitis in women with PPROM If signs of chorioamnionitis commence treatment IV antibiotics as per local antibiotic formulary and expedite delivery. **Senior review:** Consultant led review as soon as possible and within 14 hours of admission (as per NICE quality standard 174)[6] Create a plan of care including: 1) For pregnancies with PPROM under 24 weeks' gestation, or additional abnormalities- initial decision for continuation of pregnancy or termination

	of pregnancy for medical reasons, or follow up if a decision is not yet made. 2) If pregnancy is continuing then complete extreme prematurity pathway and documentation 3) Frequency of observations and investigations 4) Location of care 5) Additional emotional support for the woman and her partner 6) Daily consultant review. Seek evidence for confirmation of diagnosis of PPROM as appropriate.
27^{+0} – 33^{+6} weeks' gestation	**Counselling** by senior obstetrician (ST3+). RCOG patient information leaflet[9] (PPROM 24 weeks' gestation and beyond) can be used to help counselling. **Place of care:** Offer inpatient management for at least 72 hours, with care led by the obstetric team. - Chorioamnionitis can be a cause or consequence of PPROM. We recommend close inpatient observation in the immediate period following PPROM - About 50% of women will give birth in the following week.[1] **Prophylactic antibiotics (if no signs of infection):** - Offer prophylactic antibiotics (e.g., erythromycin or alternative as advised by microbiology if allergic) for 10 days or until in established labour - During established labour convert to IV Benzylpenicillin for prevention of early onset Group B Streptococcus infection (GBS), or suitable alternatives as per local antibiotic formulary if drug allergies. If signs of chorioamnionitis commence treatment IV antibiotics as per local antibiotic formulary and expedite delivery. **Steroids:** - Normal practice should be to offer antenatal corticosteroids, in line with North West Preterm Birth Guideline (June 2023) - The benefit of AN steroids in reducing intraventricular haemorrhage, respiratory distress syndrome and death is only seen if birth occurs in the 7 days after administration of a full course. Consideration can be given to withholding steroids until a later gestation if delivery is not deemed imminent (for example if PPROM occurred >48 hours prior to diagnosis). **Magnesium sulphate:** 24^{+0} to 29^{+6} weeks of gestation - *Offer* to women who have PPROM and are in established labour or having a planned preterm birth within 24 hours 30^{+0} to 33^{+6} weeks of gestation - *Consider use* in women who have PPROM and are in established labour or having a planned preterm birth within 24 hours. PPROM is a risk factor for adverse neurological outcome.[11,12] **Additional Investigations:** As per flowchart 1 plus: Within 72 hours: - Consider transabdominal ultrasound scan to assess liquor volume, estimated fetal weight and fetal position. The role of ultrasound assessment of amniotic fluid is unclear. Ultrasound examination demonstrating oligohydramnios may be useful to support the clinical diagnosis of PPROM.[1] If the diagnosis of PPROM was made by bedside test alone and USS shows normal liquor volume consider re-evaluating the diagnosis using the whole clinical picture.[5]

	Observations: - Minimum 6 hourly MEWS assessment and escalation as per MEWS policy - The role CTG monitoring is unclear but minimum twice daily computerised CTG whilst inpatient to assess for signs of chorioamnionitis is recommended **Senior review:** Consultant led review as soon as possible and within 14 hours of admission (as per NICE quality standard 174)[6] Create a plan of care including: 1) Frequency of observations and investigations 2) Location of care 3) Additional emotional support for the woman and her partner 4) Daily consultant review. Seek evidence for confirmation of diagnosis of PPROM as appropriate.
34^{+0} – 36^{+6} weeks' gestation	**Counselling** by senior obstetrician (ST3+). RCOG patient information leaflet[9] (PPROM 24 weeks' gestation and beyond) can be used to help counselling **Place of care:** Offer inpatient management for at least 72 hours, with care led by the obstetric team. - Chorioamnionitis can be a cause or consequence of PPROM. We recommend close inpatient observation in the immediate period following PPROM - About 50% of women will give birth in the following week.[1] **Prophylactic antibiotics (if no signs of infection):** - Offer prophylactic antibiotics (e.g., erythromycin or alternative as advised by microbiology if allergic) for 10 days or until in established labour - During established labour convert to IV Benzylpenicillin for prevention of early onset Group B Streptococcus infection (GBS), or suitable alternatives as per local antibiotic formulary if drug allergies. If signs of chorioamnionitis commence treatment IV antibiotics as per local antibiotic formulary and expedite delivery. **Steroids:** Consider 35^{+0} – 36^{+6} depending on anticipated mode of delivery, in line with North West Preterm Birth Guideline (June 2023)[7] - If aiming for a vaginal delivery, steroids are not routinely recommended - If a Caesarean birth is anticipated then steroids should be offered after discussion of benefits and risks - The benefit of AN steroids in reducing intraventricular haemorrhage, respiratory distress syndrome and death is only seen if birth occurs in the 7 days after administration of a full course. Consideration can be given to withholding steroids if delivery is not deemed imminent (for example if PPROM occurred >48 hours prior to diagnosis). **Additional Investigations:** As per flowchart 1 plus: Within 72 hours: - Consider transabdominal ultrasound scan to assess liquor volume, estimated fetal weight and fetal position. The role of ultrasound assessment of amniotic fluid is unclear. Ultrasound examination demonstrating oligohydramnios may be useful to support the clinical diagnosis of PPROM.[1]

	If the diagnosis of PPROM was made by bedside test alone and USS shows normal liquor volume consider re-evaluating the diagnosis using the whole clinical picture.[5] **Observations:** - Minimum 6 hourly MEWS assessment and escalation as per MEWS policy - The role CTG monitoring is unclear but minimum twice daily computerised CTG whilst inpatient to assess for signs of chorioamnionitis is recommended **Senior review:** Consultant led review as soon as possible and within 14 hours of admission (as per NICE quality standard 174)[6] Create a plan of care including: 1) Frequency of observations and investigations 2) Location of care 3) Additional emotional support for the woman and her partner 4) Daily consultant review. Seek evidence for confirmation of diagnosis of PPROM as appropriate. 5) Plan for birth

5 MANAGEMENT

5.1 Suspected Chorioamnionitis

Consider immediate delivery (and give antibiotics) if clinical signs of chorioamnionitis:

- Maternal pyrexia, hypothermia, tachycardia, tachypnoea
- Uterine tenderness
- Offensive discharge
- Raised white cell count / raised CRP. (NB Steroids elevate white cell count for 3 days and the trend of the WCC and/or CRP is more important than the actual values)
- Fetal tachycardia
- Meconium staining - this is almost diagnostic of sepsis in a pre-term pregnancy
- Contractions and vaginal bleeding

Clinical symptoms and signs remain most sensitive - CRP, FBC and HVS have low sensitivities in the detection of intrauterine infection and a ***rising trend*** is probably more helpful than a result in isolation.[2]

Intervention requires consultant level input at early gestations i.e. <32 weeks, since the risks associated with prematurity are high, but note the MBRACE UK recommendation that delivery in women who are well but have signs of sepsis, has little advantage, and may lead to clinical deterioration.[13] Intravenous intrapartum antibiotic prophylaxis should be recommended as per local guidelines.

5.2 Prophylactic antibiotics

For women with PPROM 24^{+0} to 36^{+6} weeks' gestation *offer* erythromycin 250mg QDS po (or a suitable alternative if allergic) for 10 days or until in established labour.

For women with PPROM 20^{+0} to 23^{+6} weeks' gestation *consider* erythromycin 250mg QDS po (or a suitable alternative if allergic) for 10 days or until in established labour.

Where PPROM occurs <20+0 there is limited data to support or refute the use of prophylactic antibiotics. A decision can be made on individual clinical considerations and patient preference.

All women with PPROM in established labour (having survival focused care of the neonate) should be offered IV benzylpenicillin, or a suitable alternative if allergic, in line with the prevention of group B streptococcal guidelines.[14] This is regardless of the eventual gestation of labour (i.e still applicable if labour is at 37^{+0} or later weeks' gestation)

Do not prescribe co-amoxiclav for prophylaxis due to the increased risk of necrotising enterocolitis.[15]

Reasoning

The RCOG greentop guideline recommends offering erythromycin (or a suitable alternative if allergic) to women with PPROM 24^{+0}-36^{+6} weeks' gestation for 10 days or until in established labour.[1]

A 2013 Cochrane review[16] investigating the role of antibiotics for women with confirmed PPROM found that the use of antibiotics is associated with a statistically significant reduction in chorioamnionitis (RR 0.66, 95% CI 0.46–0.96). There was a significant reduction in the numbers of babies born within 48 hours (RR 0.71, 95% CI 0.58–0.87) and 7 days (RR 0.79, 95% CI 0.71–0.89). Neonatal infection, use of surfactant, oxygen therapy and abnormal cerebral ultrasound prior to discharge from hospital was also reduced. Importantly however, there was no significant reduction in perinatal mortality or on the health of the children at 7 years of age.[16,17] The review included 22 studies, of which 5 recruited women with PPROM from 20^{+0} weeks gestation.

A 2023 systematic review and network meta-analysis[18] found that penicillins are the antibiotic of choice for reducing maternal clinical chorioamnionitis and included trials with participants from 19 weeks of gestation. In the UK however, there is an established practice of giving erythromycin based on the Oracle trial,[15] and penicillins are generally considered second line until further evidence of benefit.[16]

Due to the potential for benefit of prophylactic antibiotics when PPROM occurs after 20^{+0} weeks' gestation the guideline group feel it is reasonable to *consider* prophylactic antibiotics from this gestation, and offer in line with national guidance from 24^{+0} weeks' gestation. Due to the paucity of evidence with regards to prophylactic antibiotics with PPROM prior to 20^{+0} weeks' gestation it is reasonable to offer, or withhold prophylactic antibiotics. Prophylactic antibiotics could theoretically disrupt a favorable microbiota in a proportion of women with PPROM.[19]

Once a decision has been made to give prophylactic antibiotics, or not, all women should have a continuity of care plan in place and it would be unusual to commence prophylactic antibiotics in a woman for whom a decision has previously been made to not commence prophylactic antibiotics.

For women with PPROM who cannot tolerate erythromycin or in whom erythromycin is contraindicated, consider oral penicillin or suitable alternative.

Intrapartum antibiotic prophylaxis for GBS should be given once labour is confirmed irrespective of GBS status, for all labours when the baby is having survival focused care (even if labour is over 37 weeks' gestation). The first line choice of antibiotic is Benzylpenicillin 3g loading dose and subsequent 1.5g every 4 hours until delivery. Intrapartum antibiotic prophylaxis for GBS is not required if birth is by pre-labour Caesarean section.[20]

5.3 Vaginal swabs

- **Offer a low vaginal and anorectal swabs for GBS at time of PPROM diagnosis.**
- **Offer a high vaginal swab for yeast and bacterial culture at time of PPROM diagnosis**
- **Do not routinely repeat vaginal swabs unless there is a clinical concern about chorioamnionitis**

Reasoning

The RCOG PPROM Greentop guideline notes that it is routine practice in the UK to obtain a vaginal swab for microbiological testing while diagnosing PPROM.[1] The RCOG Greentop guideline for prevention of early onset neonatal Group B streptococcal (GBS) disease notes that the optimum yield (for GBS) will be obtained from swabs obtained from the lower vagina and anorectum. A single swab can be used (take vaginal sample first), or two swabs.[21] The RCOG greentop guideline about prevention of early onset GBS also recommends that women with PPROM are not tested for GBS, because they should all receive prophylaxis in labour. However, this does not address the recommendation that women with PPROM and GBS should be offered birth from 34^{+0} weeks' gestation, whereas those without GBS could have expectant management until 37^{+0} weeks' gestation.[1]

The recommendation to consider birth from 34^{+0} weeks gestation in women with PPROM is based on secondary analysis of the PPROMEXIL trial of women who had PPROM 34^{+0}-36^{6} weeks' gestation. Amongst women with GBS colonization the risk of early onset neonatal sepsis was 15.2% (7/46) in women with expectant management and 1.8% (1/57) in women with immediate delivery, odds ratio 0.10, 95% confidence interval 0.01-0.84.[22] The role of GBS status in stratifying gestation at delivery was also assessed within the PPROMT trial and the findings were not replicated, but the authors noted that more research, with long term follow up, is required.[23]

For those >34 weeks' gestation at the time of PPROM, it may be beneficial to expedite delivery if the woman is a known carrier of GBS.[22] For women who experience PPROM under 34^{+0} weeks' gestation, and remain pregnant at 34^{+0} weeks gestation onwards the picture is less clear and the options of expediating delivery or birth closer to 37 weeks' gestation should be discussed.

Therefore, although the RCOG Group B Streptococcal guidance advises against

testing of women with PPROM, the guideline authors feel that knowledge of GBS status could provide important information to guide care, and therefore recommend GBS testing for women with PPROM.[24]

5.4 Corticosteroids

Administer corticosteroids for fetal lung maturity in line with North West Preterm Birth Guideline (June 2023).[7] Key points included here for reference:

- Do not offer corticosteroids <22^{+0}
- Offer corticosteroids 22^{+0} to 26^{+6} weeks' gestation after counselling in line with BAPM framework if the baby is planned to have survival focused care[7,25]
- Offer corticosteroids >27+0 – 34+6
- Consider corticosteroids >35+0 – 36+6 depending on anticipated mode of delivery
    - If vaginal delivery, steroids not routinely administered unless clear indication
    - If Caesarean birth anticipated then steroids should be offered after discussion of benefits and risks at these gestations
- Consideration can be given to withholding steroids until a later gestation if delivery is not deemed imminent (for example if PPROM occurred >48 hours prior to diagnosis)

Reasoning
See North West Preterm Birth Guideline (June 2023) and steroid literature[2,26] for full reasoning about benefits of steroids for fetal lung maturity.

The benefit of AN steroids in reducing intraventricular haemorrhage, respiratory distress syndrome and death is only seen if birth occurs in the 7 days after administration of a full course.[26] The chance of birth in the week after PPROM under 23^{+0} weeks' gestation is 39%,[4] increasing to about 50% in the week after PPROM if the woman is closer to term.[27] This is judged to be a high enough chance of birth to justify steroid administration. However, we must also be mindful that the woman has an ongoing increased chance of preterm birth if she remains pregnant a week after PPROM, and repeat courses of steroids are not routine practice, although could be considered on an individual basis.[28] Follow with North West Preterm Birth Guideline (June 2023) to guide repeat courses of steroids.

5.5 Tocolytics

Tocolytics are not generally recommended after PPROM

Reasoning

A Cochrane review found that, compared with placebo, tocolysis in PPROM is associated with an average 73 hours longer latency of delivery (95% CI 20−126) and fewer births within 48 hours (RR 0.55, 95% CI 0.32−0.95).[29] Tocolysis was associated with an increased risk of

a 5-minute Apgar score of less than 7 and an increased need for ventilation support.[1,29] For women before 34+0 weeks of gestation, tocolysis increased the risk of chorioamnionitis. The review concluded that there is insufficient evidence to support the use of tocolysis in women with PPROM, as there is an increase in maternal chorioamnionitis without
significant benefits to the neonate.[29]

5.7 Considerations for PPROM <23+0 weeks' gestation

A senior obstetrician should sensitively discuss the guarded prognosis after early PPROM, risks to mother and baby, and option of termination of pregnancy for medical reasons. Appendix 1 can be used to aid counselling

Reasoning

A UK Obstetric Surveillance System (UKOSS) survey of all pregnancies affected by PPROM 16+0 to 22+6 weeks' gestation in the UK over 18 months 2019-2021 found that when expectant management was chosen, 39% deliver within 7 days, with the remaining 61% remaining pregnant beyond 7 days[2]. Amongst those that remained pregnant 21% gave birth in in the second week after early PPROM and the chance of birth was 16% in each subsequent week, as illustrated in figure 1. Amongst women who continued their singleton pregnancies 44% had a livebirth and 26% had a baby alive at hospital discharge. Pregnancy outcomes by 2-week period of gestation at PPROM are available in **Appendix 1**.

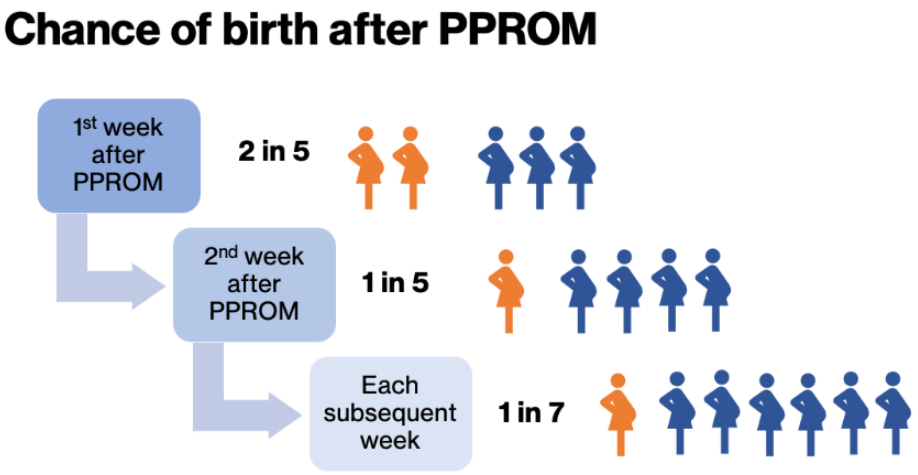


Figure 1. Taken from UKOSS: Preterm Prelabour Rupture of Membranes (PPROM) before 23 weeks' gestation: a prospective observational study (March 2024[2]).

Discussions around the following are recommended:

- Risk of spontaneous pregnancy loss prior to gestation of viability
- Neonatal morbidity and prognosis
- Uncertainty within all data surrounding outcomes after early PPROM because of the unknown neonatal outcomes of women who opt for TFMR in all observational data
- Symptoms of infection, sepsis, cord prolapse and abruption, including when to seek medical help

- The support that can be offered to the family, including medical, practical and psychological support

Maternal risks

- Sepsis (14%)[2]
- Surgical removal of placenta (20%) [2]
- Serious maternal morbidity with an impact upon future pregnancies (including the rare requirement for hysterectomy)[13]
- Death (0.5%) [2]

Fetal risks (dependent on gestation at PPROM)

- Miscarriage
- Extremely Preterm delivery
- Infection (chorioamnionitis)
- Pulmonary hypoplasia and subsequent respiratory distress
- Limb contractures
- Neonatal mortality

Pregnancy risks:

- Preterm labour with associated complications during labour, dependent upon fetal presentation
- Cord prolapse
- Placental abruption

Options of continuing pregnancy or termination of pregnancy should be offered if PPROM occurs under 23^{+0} weeks' gestation.[27] At the point of diagnosis of PPROM at periviable gestations (>22^{+0}), the neonatal team should be informed for multidisciplinary counselling. In 2019-2021 29% of women with PPROM between 16^{+0} and 22^{+6} weeks' gestation had termination for medical reasons.[4]

In women with PPROM, if 22-24 weeks gestation is reached, a growth scan should be performed to establish the estimated fetal weight (EFW) to contribute to the extreme prematurity discussion.[25]

5.8 Care for women opting for termination of pregnancy

Care for women as inpatients during their termination of pregnancy, and be prepared to manage infection and retained placenta. Medical termination is normal practice.

Reasoning

Women who opt for termination of pregnancy after early PPROM are not immune to obstetric complications of PPROM and require care that is mindful of their potential for complications. In 2019-21 in the UK 62 women with singleton pregnancies opted for termination after early PPROM without expectant management. Of these women 6 (10%) developed sepsis and 8 (13%) required surgical removal of placental tissue.[4]

If termination of pregnancy for medical reasons is chosen:

- Consider the offer of surgical or medical termination of pregnancy. Most patients in 2019-21 in the UK opted for medical termination.[4] There is little evidence about best practice for surgical methods with additional concern associated with infection, perforation, worsening sepsis and intraoperative haemorrhage. Unit specific referral pathways to units who provide access to care in this situation should be considered for women opting for surgical termination with a clear plan for management of complications.

Depending on local protocols, there should be readily available access to bereavement and psychological support throughout the process, whether they be in-house or external services:

- Cheshire & Merseyside: Silver Birch Trust
- Stillbirth & Bereavement Special Interest Group – MFT

5.9 Outpatient management after PPROM

Women should be reviewed by a senior obstetrician prior to outpatient management

Women having outpatient management of PPROM should have a clinical review at least weekly

It is advisable to repeat maternal FBC and CRP blood tests prior to the decision to convert to outpatient management pathway

Reasoning
A Cochrane review to assess the safety, cost and women's views about planned home versus hospital care for women with PPROM identified only two relatively small trials (116 women) so that meaningful differences between the groups could not be detected.[30]

The RCOG Greentop guideline advises that the decision to offer outpatient care to women with PPROM, following a period of in-patient care, should be made on an individual basis. Factors including past obstetric history, support at home and distance from the hospital should be taken into account in discussion with the woman about her preferences, and markers of delivery latency should be assessed (the presence of antepartum haemorrhage, amniotic fluid volume, gestational age at which PPROM occurs and clinical and laboratory markers of infection).[1]

A retrospective cohort study of women with PPROM who had planned home care, found that membrane rupture occurring before 26^{+0} weeks', non-cephalic presentation and oligohydramnios were associated with an increased risk of 'complication' (defined as fetal death, placental abruption, umbilical cord prolapse, delivery outside of hospital and neonatal death). The authors concluded that hospital based care should be recommended to women who have all three of these features.[1,31]

It may be appropriate to advise prolonged inpatient monitoring, for example if the patient lives far from healthcare or there are ongoing active concerns such as antepartum hemorrhage or requirements for regular fetal monitoring.

Action	Outpatient monitoring plan
Maternity assessment unit review	Maternity assessment unit care – review 1-2 times per week with oversight from consultant obstetrician- for example in antenatal clinic.
Signs/symptoms	Daily temperature assessment by patient at home. Advise to call maternity assessment unit if temperature 37.5ºC or above. Advise to call maternity unit if: lower abdominal pain, abnormal vaginal discharge, fever, malaise, vaginal bleeding or reduced fetal movements (if applicable gestation). Discuss symptoms of chorioamnionitis, cord prolapse and placental abruption and urgency of medical assessment in these situations. Direct contact details for local maternity assessment unit if any concerns
Maternal observations	Full MEWS at each planned maternity unit review Twice daily home temperature monitoring
Maternal blood tests	FBC and CRP 1-2x weekly Consider more frequent FBC and CRP if clinical picture suggestive of maternal infection
Fetal monitoring	CTG at planned review if >25^{+6}, auscultation of fetal heart if <26^{+0} weeks' gestation. Maternal monitoring of fetal movements
Microbiology	No role to repeat vaginal swabs or MSSU unless clinically symptomatic
Ultrasound surveillance	Anomaly scan in FMU if not already performed before PPROM (18^{+0} – 20^{+6} weeks' gestation) Fetal growth assessment >22^{+0} as soon as practical after PPROM Growth scans recommended 2-3 weekly. Mean pool depth and umbilical artery dopplers recommended weekly. *Reasoning* The RCOG greentop guideline[1] notes that in the UK, most clinicians would monitor fetal growth on ultrasound scan fortnightly, and assess amniotic fluid and umbilical artery Doppler studies weekly, although a Cochrane review on methods to monitor the fetus following PPROM found insufficient evidence (three randomised controlled trials) to allow recommendations to be made.[32]

5.10 Twin pregnancies

Manage twin pregnancies in a similar manner to singleton pregnancies, but be mindful of twin specific concerns and a potential higher rate of maternal sepsis

Reasoning
PPROM is more prevalent in twin gestations and is major contributor to preterm birth.[33] Women with twin pregnancies and PPROM under 23 weeks' gestation are more likely (29% vs 12%, p=0.004) to develop sepsis than women with singleton pregnancies.[4]

In general, antenatal steroids, prophylactic antibiotics and magnesium sulphate for neuroprotection are all potential interventions to consider when PPROM complicates a twin gestation. Management should be similar to singleton pregnancies, mindful of the differing gestation for level 3 NNU in twin pregnancies (see Northwest regional preterm birth guideline[7]).

Certain circumstances, such as PPROM following an invasive procedure, at a pre-viable gestational age, or in a monochorionic gestation, warrant special attention and liaison with Fetal Medicine teams as the implications of PPROM and subsequent recommendations for these twin pregnancies may differ.

In general, the approach to PPROM in twins should be individualized based on gestational age, and the maternal and neonatal risks of delaying delivery to prolong the pregnancy. Latency tends to be longer when PPROM occurs before 30 weeks of gestation in twins but is still shorter than the latency period in singletons.[33]

5.11 Cervical Cerclage

Cervical cerclages should normally be removed when PPROM occurs

Reasoning

If the woman has a cervical cerclage in situ, the plan of care must be discussed with the on-call obstetric consultant. In the majority of cases, the cervical suture should be removed once PPROM has been diagnosed, as there may be no advantage to retaining cerclage after PPROM, given the increased risk of harbouring a potential source for infection.[34] This decision should be made at consultant level.

5.12 Arabin pessary

Arabin pessaries should be removed when PPROM occurs

Reasoning

A 2022 individual patient level meta-analysis evidence[35] assessed the benefit of Arabin pessary as poor, with it being viewed less favorably as a prevention treatment for women at risk of preterm birth compared to progesterone and cerclage.

However, given its acknowledgement for use in the most recent Saving Babies Lives Care Bundle v3 (June 2023)[36] and subsequently in the Northwest regional preterm birth guideline,[7] guidance on the management of the small cohort of women with an Arabin pessary in situ must be considered.

If a woman does have an Arabin in situ, this should be removed at diagnosis of PPROM. Removal is akin to withdrawal of a ring pessary in the urogynaecological context and must be removed digitally using sterile gloves to minimise the risk of introducing infection.

The Arabin should not be kept in under any circumstances once PPROM is diagnosed as this may increase the risk of severe maternal infection.

5.13 VAGINAL PROGESTERONE

Vaginal progesterone should normally be stopped when PPROM occurs

Reasoning
If a patient has been commenced on vaginal progesterone (e.g. Cyclogest) earlier in the pregnancy (presence of clinical risk factors or incidental short cervix warranting preterm birth risk reduction treatment), it is advised it should be stopped at the diagnosis of PPROM, due to the risk of introducing ascending infection.

Given the lack of robust research evidence around the therapeutic effect and bioavailability of progesterone per rectum, the authors of the guideline **DO NOT** recommend PR administration as an alternative route.

6 DELIVERY

6.1 Timing of birth

Women whose pregnancy is complicated by PPROM after 24 $^{+0}$ weeks' gestation and who have no contraindications to continuing the pregnancy should be offered expectant management until 37^{+0} weeks gestation, but, timing of birth should be discussed with each woman on an individual basis with careful consideration of patient preference and ongoing clinical assessment.[1]

Reasoning
This advice is based on a Cochrane review including 3617 women with PPROM.[37] The results and conclusions of the Cochrane review are influenced by those trials assessing 'late' PPROM (34^{+0} to 36^{+6} weeks' gestation) such as the PPROMPT trial[23] and it is less clear whether expectant management to 37^{+0} weeks' gestation is appropriate for women who experience PPROM at earlier gestations.

The individual studies included in the Cochrane review[37] had a number of 'exclusion criteria' including: active labour, chorioamnionitis, concerns about fetal wellbeing, monochorionic multiple pregnancy, hypertensive disorders and other contraindications to continuing the pregnancy. Therefore the timing of birth should be discussed with each woman on an

individual basis with careful consideration of patient preference and ongoing clinical assessment.

For women with evidence of Group B Strep colonisation in the current pregnancy or in previous pregnancies, the perinatal risks associated with preterm delivery at less than 34^{+0} weeks of gestation are likely to outweigh the risk of perinatal infection. For those at more than 34^{+0} weeks gestation it may be beneficial to expedite delivery if a woman is a known GBS carrier. See section 5.3 for further discussion of this area.

6.2 Management in labour

Discontinue Erythromycin (or suitable alternative in the case of sensitivities or allergies) in labour and convert to intravenous Group B streptococcus antibiotic prophylaxis (first line Benzylpenicillin or suitable alternative depending on local protocols) when in labour or after artificial rupture of membranes, or starting oxytocin, if having an induction of labour.

High risk care should be recommended for women in labour after PPROM.

The neonatal team should present at all births of babies with PPROM under 28 weeks' gestation, even if birth is subsequently >37^{+0} weeks' gestation, due to the risk of pulmonary hypoplasia in babies with PPROM <28 weeks' gestation.[27]

7 POSTNATAL CARE

Women who have had PPROM should receive routine postnatal care prior to discharge, with the consideration of individualised care in the presence of maternal infection and need for prolonged antibiotic therapy. Prophylactic antibiotic therapy can be stopped.

All women who have experienced a preterm birth <34 weeks' gestation following PPROM should be offered a postnatal debrief prior to discharge and between 6 – 12 weeks postnatal.

For neonatal management and observations, please see local guidelines on infants at risk of early onset sepsis.

Modifiable risk factors for preterm birth should be addressed with the women prior to discharge (e.g., smoking, awareness of urinary or vaginal infections etc.).

Placental histology should be routine for all deliveries prior to 32 weeks' gestation, in accordance with current Royal College of Pathologist guidelines, and these examinations should be undertaken by a specialist perinatal histopathologist to assess for signs of infection or inflammation and ischaemia or infarction.

8 CARE IN SUBSEQUENT PREGNANCIES

Pregnancies complicated by PPROM are at an increased risk of recurrent PPROM in future pregnancies (5.7% vs 2.3% without PPROM), with a greater incidence where there is shorter

inter-pregnancy interval.[38] This association is higher for Afro-Caribbean women when compared to white Caucasian women.

If PPROM occurred prior to 34 weeks of pregnancy, women should be referred to a dedicated Preterm Birth Prevention clinic or to an antenatal clinic with a consultant specialising in preterm birth and high-risk pregnancy to be seen between 16 – 18 weeks of pregnancy, in line with Saving Babies Care Bundle version 3 (June 2023).[36]

9 Monitoring / Audit

Auditable standards:

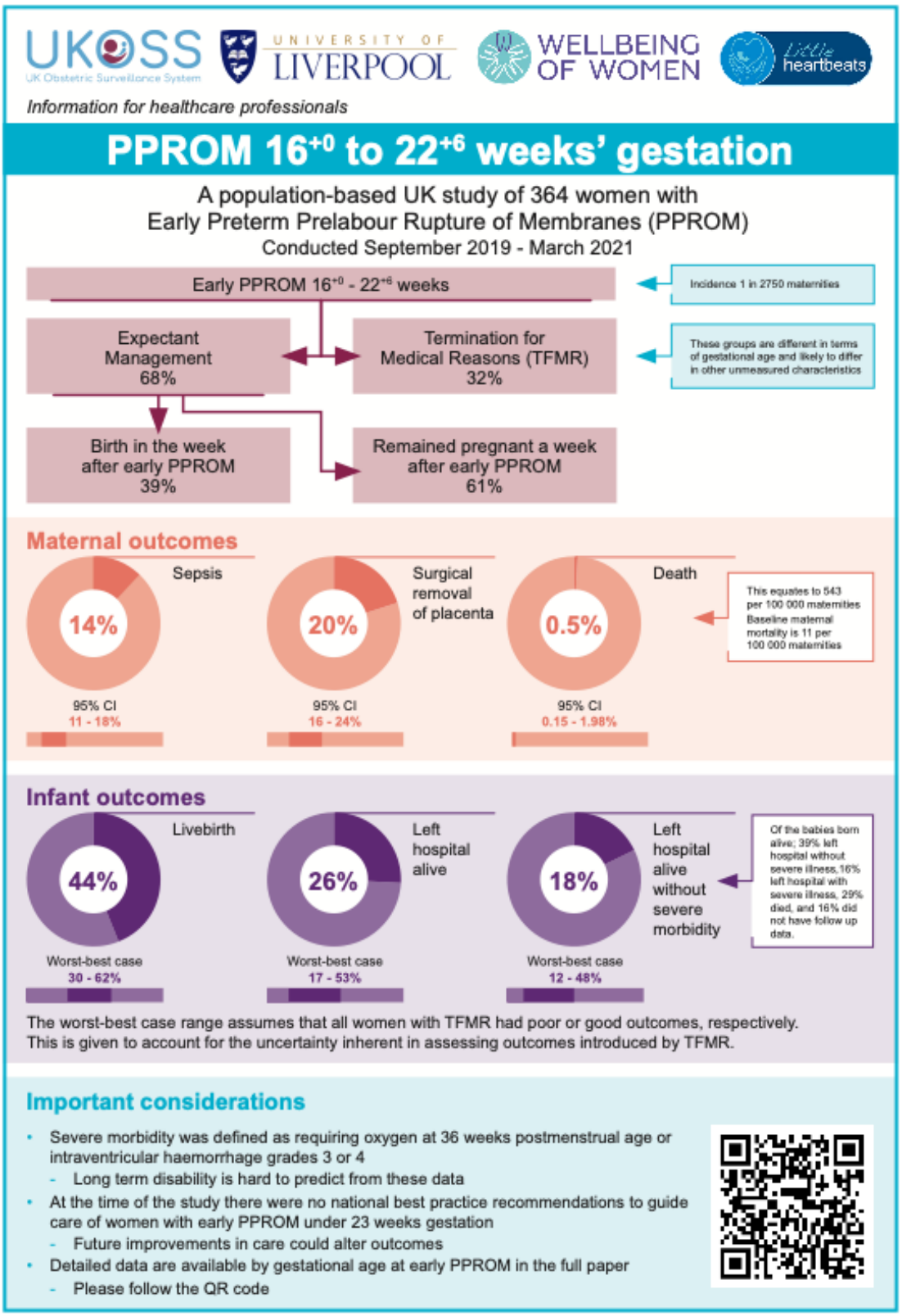
1.	Proportion of women with PPROM >24 weeks' gestation who are offered antibiotics for 10 days following PPROM, or until the woman is in established labour (100%).
2.	Proportion of women who experience PPROM between 24^{+0} and 33^{+6} weeks of gestation who opt for survival focused care and are offered corticosteroids (100%).
3.	Proportion of women less than 30^{+0} weeks' gestation who receive magnesium sulphate within 24 hours prior to birth (100%).
4.	Proportion of women with PPROM 22^{+0} weeks' gestation onwards who are given the opportunity to discuss their care with a neonatologist (100%).
5.	Proportion of women with PPROM who birth in a centre without adequate facilities to care for their baby (0%)

This first version of the collaborative PPROM guideline has been reviewed by the relevant regional network lead clinicians prior to peer review and approval by the North West Guideline Group.

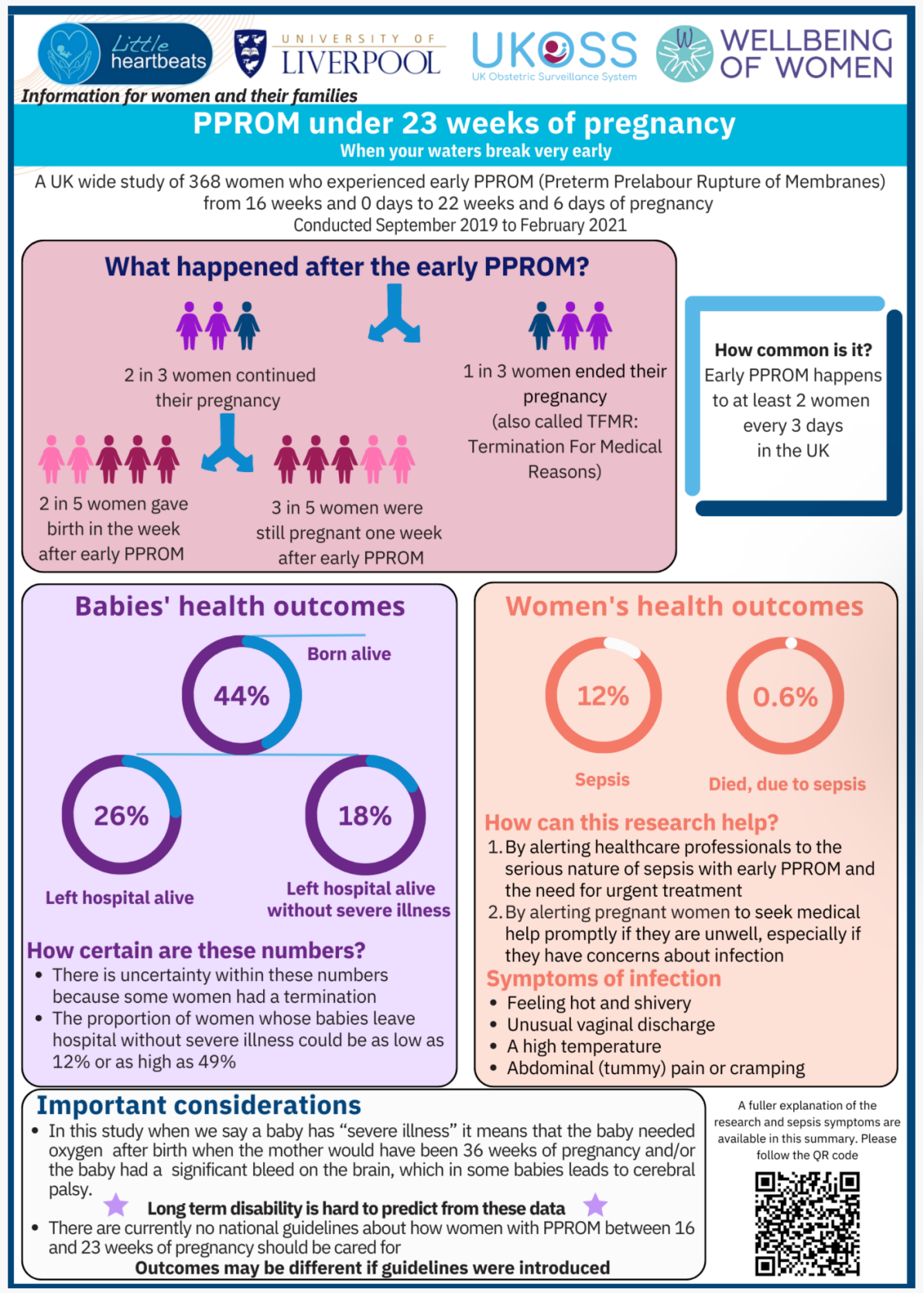
Version 1 (July 2024)
Issue date: TBC
Ratification date:TBC
Review date: April 2026 (3 yearly)
Persons responsible for this document: Dr Ffion Jones

10 Details of attachments (e.g. list of appendices)

APPENDIX 1. PPROM INFORMATION FOR HEALTHCARE PROFESSIONALS



APPENDIX 2. PPROM INFORMATION FOR PATIENTS



Appendix 3. Northwest Extreme Early PPROM Patient Information Leaflet

Leaflet available here [NHS England — North West » North West Guidelines]

11 Details of other relevant or associated documents (including links)

Northwest Preterm Birth Guideline (April 2023)

Northwest Neonatal Operational Delivery Network Optimisation Bundle

Little-heartbeats.org.uk – support groups and free care packs available.
A highly valuable resource for information and patient stories (including PPROM, neonatal and baby loss, pregnancy after PPROM)

RCOG – Preterm Prelabour Rupture of Membranes >24 weeks' (Patient information leaflet)

RCOG – Cord prolapse (Patient information leaflet)

NICE guideline NG25

Tommy's.org – Waters breaking early (Patient information leaflet)

Tommy's.org – Pregnancy after PPROM/Preterm Birth (Patient information leaflet)

12 Supporting references & national guidance

1. Thomson AJ. Care of Women Presenting with Suspected Preterm Prelabour Rupture of Membranes from 24+0 Weeks of Gestation: Green-top Guideline No. 73. BJOG An Int J Obstet Gynaecol. 2019;126(9):e152–66.
2. National Institute for Clinical Excellence. Preterm Labour and Birth, Full Guideline [Internet]. 2015. Available from: https://www.nice.org.uk/guidance/ng25
3. Knight M, Bunch K, Felker A, Patel R, Kotnis R, Kenyon S, et al. Saving Lives, Improving Mothers' Care Saving Lives, Improving Mothers' Care Lessons learned to inform maternity care from the UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidity State of the Nation Surveillance Report 2019-21. University of Oxford. 2023.
4. Goodfellow L, Care A, Curran C, Roberts D, Turner MA, Knight M, et al. Preterm Prelabour Rupture Of Membranes (PPROM) before 23 weeks gestation: A prospective observational study. BMJ Med. 2024 Mar 1;3:e000729.
5. Thumm B, Walsh G, Heyborne KD. Diagnosis of rupture of membranes: AmniSure, clinical assessment, and the Food and Drug Administration warning. Am J Obstet Gynecol MFM [Internet]. 2020 Nov 1;2(4). Available from: https://doi.org/10.1016/j.ajogmf.2020.100200
6. National Institute for Health and Care Excellence. Emergency and acute medical care in over 16s: Quality standard [QS174]. Qual Stand [Internet]. 2018;(September 2018). Available from: https://www.nice.org.uk/guidance/qs174/chapter/quality-statement-4-structured-patient-handovers
7. North West Coast SCN. North West Guideline Preterm Birth. 2023.
8. Matthiesen NB, Østergaard JR, Hjortdal VE, Henriksen TB. Congenital Heart Defects

and the Risk of Spontaneous Preterm Birth. J Pediatr [Internet]. 2021;229:168-174.e5. Available from: https://doi.org/10.1016/j.jpeds.2020.09.059
9. Information for you When your waters break prematurely. 2019;(June):1–6. Available from: https://www.rcog.org.uk/globalassets/documents/patients/patient-information-leaflets/pregnancy/pi-when-your-waters-break-prematurely-large-print.pdf
10. Danesh A, Janghorbani M, Khalatbari S. Effects of antenatal corticosteroids on maternal serum indicators of infection in women at risk for preterm delivery: A randomized trial comparing betamethasone and dexamethasone. J Res Med Sci Off J Isfahan Univ Med Sci. 2012 Oct;17(10):911–7.
11. Kiechl-Kohlendorfer U, Ralser E, Peglow UP, Reiter G, Trawöger R. Adverse neurodevelopmental outcome in preterm infants: Risk factor profiles for different gestational ages. Acta Paediatr Int J Paediatr. 2009;98(5):792–6.
12. Drassinower D, Friedman AM, Običan SG, Levin H, Gyamfi-Bannerman C. Prolonged latency of preterm prelabour rupture of membranes and neurodevelopmental outcomes: a secondary analysis. BJOG An Int J Obstet Gynaecol. 2016;123(10):1629–35.
13. Knight M, Nair M, Tuffnell D, Shakespeare JM, Kenyon S, Kurinczuk JJ. Saving Lives, Improving Mothers' Care - Lessons learned to inform maternity care from the UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidity 2013–15. Oxford; 2017.
14. Huges R, Brocklehurst P, Steer P, Heath P, Stenson, on behalf of the Royal College of Obstetricians and Gynaecologists. Prevention of Early-onset Neonatal Group B Streptococcal Disease. BJOG An Int J Obstet Gynaecol [Internet]. 2017 Nov 1;124(12):e280–305. Available from: https://doi.org/10.1111/1471-0528.14821
15. Kenyon SL, Taylor DJ, Tarnow-Mordi W, ORACLE Collaborative Group. Broad-spectrum antibiotics for preterm, prelabour rupture of fetal membranes: the ORACLE I randomised trial. ORACLE Collaborative Group. Lancet (London, England) [Internet]. 2001 Mar 31 [cited 2019 Jan 31];357(9261):979–88. Available from: http://www.ncbi.nlm.nih.gov/pubmed/11293640
16. Kenyon S, Boulvain M, Neilson JP. Antibiotics for preterm rupture of membranes. Cochrane Database Syst Rev [Internet]. 2013;(12). Available from: https://doi.org//10.1002/14651858.CD001058.pub3
17. Kenyon S, Pike K, Jones DR, Brocklehurst P, Marlow N, Salt A, et al. Childhood outcomes after prescription of antibiotics to pregnant women with preterm rupture of the membranes: 7-year follow-up of the ORACLE I trial. Lancet [Internet]. 2008;372(9646):1310–8. Available from: http://dx.doi.org/10.1016/S0140-6736(08)61202-7
18. Lin LL, Hung JN, Shiu SI, Su YH, Chen WC, Tseng JJ. Efficacy of prophylactic antibiotics for preterm premature rupture of membranes: a systematic review and network meta-analysis. Am J Obstet Gynecol MFM [Internet]. 2023;5(7):100978. Available from: https://doi.org/10.1016/j.ajogmf.2023.100978
19. Brown RG, Marchesi JR, Lee YS, Smith A, Lehne B, Kindinger LM, et al. Vaginal dysbiosis increases risk of preterm fetal membrane rupture, neonatal sepsis and is exacerbated by erythromycin. BMC Med. 2018;16(1):1–15.
20. No GG. Prevention of Early-onset Neonatal Group B Streptococcal Disease: Green-top Guideline No. 36. BJOG An Int J Obstet Gynaecol. 2017;124(12):e280–305.
21. Public Health England. UK Standards for Microbiology Investigations Detection of Carriage of Group B Streptococci (Streptococcus agalactiae)-standards-for-microbiology-investigations-smi-quality-and-consistency-in-clinical-laboratories PHE Publications gateway number: 2015075 UK Standards for Microbiology Investigations are produced in association with. 2018;1–24.
22. Tajik P, Van Der Ham DP, Zafarmand MH, Hof MHP, Morris J, Franssen MTM, et al. Using vaginal Group B Streptococcus colonisation in women with preterm premature rupture of membranes to guide the decision for immediate delivery: A secondary

analysis of the PPROMEXIL trials. BJOG An Int J Obstet Gynaecol. 2014;121(10):1263–72.
23. Morris JM, Roberts CL, Bowen JR, Patterson JA, Bond DM, Algert CS, et al. Immediate delivery compared with expectant management after preterm pre-labour rupture of the membranes close to term (PPROMT trial): a randomised controlled trial. Lancet [Internet]. 2016 Jan 30;387(10017):444–52. Available from: https://doi.org/10.1016/S0140-6736(15)00724-2
24. de Ruigh AA, Pajkrt E, Mol BW. Against: Expectant management for women with prelabour rupture of membranes in the presence of GBS at 34–37 weeks' gestation. BJOG An Int J Obstet Gynaecol. 2023;130(6):685–6.
25. MacTier H, Bates SE, Johnston T, Lee-Davey C, Marlow N, Mulley K, et al. Perinatal management of extreme preterm birth before 27 weeks of gestation: A framework for practice. Arch Dis Child Fetal Neonatal Ed. 2020;105(3):F232–9.
26. McGoldrick E, Stewart F, Parker R, Dalziel SR. Antenatal corticosteroids for accelerating fetal lung maturation for women at risk of preterm birth. Cochrane database Syst Rev. 2020 Dec;12(12):CD004454.
27. Mercer BM. Preterm Premature Rupture of the Membranes. Preterm Birth Prev Manag. 2003;101(1):178–93.
28. Crowther CA, Middleton PF, Voysey M, Askie LM, Zhang S, Martlow TK, et al. Effects of repeat prenatal corticosteroids given to women at risk of preterm birth: An individual participant data meta-analysis. PLoS Med. 2019;16(4):1–25.
29. Mackeen AD, Seibel-Seamon J, Muhammad J, Baxter JK, Berghella V. Tocolytics for preterm premature rupture of membranes. Cochrane database Syst Rev. 2014 Feb;2014(2):CD007062.
30. Abou El Senoun G, Dowswell T, Mousa HA. Planned home versus hospital care for preterm prelabour rupture of the membranes (PPROM) prior to 37 weeks' gestation. Cochrane Database Syst Rev [Internet]. 2014;(4). Available from: https://doi.org//10.1002/14651858.CD008053.pub3
31. Petit C, Deruelle P, Behal H, Rakza T, Balagny S, Subtil D, et al. Preterm premature rupture of membranes: Which criteria contraindicate home care management? Acta Obstet Gynecol Scand. 2018;97(12):1499–507.
32. Sharp GC, Stock SJ, Norman JE. Fetal assessment methods for improving neonatal and maternal outcomes in preterm prelabour rupture of membranes. Cochrane database Syst Rev. 2014 Oct;2014(10):CD010209.
33. Zhou S, Yang Y, Zhang XY, Mu X, Quan Q, Zhong Q, et al. Perinatal outcomes of twin pregnancies with preterm premature rupture of the membranes at 24–34 weeks' gestation. Sci Rep [Internet]. 2021;11(1):1–10. Available from: https://doi.org/10.1038/s41598-021-02884-x
34. Galyean A, Garite TJ, Maurel K, Abril D, Adair CD, Browne P, et al. Removal versus retention of cerclage in preterm premature rupture of membranes: A randomized controlled trial. Am J Obstet Gynecol [Internet]. 2014;211(4):399.e1-399.e7. Available from: http://dx.doi.org/10.1016/j.ajog.2014.04.009
35. Care A, Nevitt SJ, Medley N, Donegan S, Good L, Hampson L, et al. Interventions to prevent spontaneous preterm birth in women with singleton pregnancy who are at high risk: Systematic review and network meta-analysis. BMJ. 2022;376:1–12.
36. NHS England. Saving Babies' Lives Version Three. 2023;(July). Available from: https://www.england.nhs.uk/publication/saving-babies-lives-version-three/
37. Bond DM, Middleton P, Levett KM, van der Ham DP, Crowther CA, Buchanan SL, et al. Planned early birth versus expectant management for women with preterm prelabour rupture of membranes prior to 37 weeks' gestation for improving pregnancy outcome. Cochrane database Syst Rev. 2017 Mar;3(3):CD004735.
38. Getahun D, Strickland D, Ananth C V, Fassett MJ, Sacks DA, Kirby RS, et al. Recurrence of preterm premature rupture of membranes in relation to interval between pregnancies. Am J Obstet Gynecol. 2010 Jun;202(6):570.e1-6.

13 Definitions / glossary

CTG – Cardiotocograph

CRP – C-reactive Protein

EFW – Estimated Fetal Weight

FBC – Full Blood Count

FMU – Fetal Medicine Unit

GBS – Group B Streptococcus

G+S – Group & Save

HVS – High Vaginal Swab

IOL – Induction of Labour

IUT – In Utero Transfer

IV – Intravenous

MEWS – Maternity Early Warning Score

MPD – Mean Pool Depth

MSSU – Mid Stream Sample of Urine

NNU – Neonatal Unit

PO – Per oral

PPROM – Preterm Prelabour Rupture of Membranes

PV – Per vagina

sPTB – Spontaneous Preterm Birth

TAUSS – Transabdominal Ultrasound Scan

TFMR – Termination for Medical Reasons

TVS – Transvaginal Ultrasound Scan

UA – Umbilical Artery

VE – Vaginal Examination

14 Consultation with Stakeholders

- Cheshire & Merseyside Regional Preterm Birth Network
- Greater Manchester & Eastern Cheshire Regional Preterm Birth Network and Steering Group
- Ms Ciara Curran – Founder of PPROM Charity 'Little Heartbeats'

15 Equality Impact Assessment

Section 1: Equality Impact Assessment (EIA) Form

The EIA process allows the group to identify where a policy or service may have a negative impact on an individual or particular group of people.

Information Category	Detailed Information
Name of the strategy / policy / proposal / service function to be assessed:	Full title and version number
Directorate and service area:	Department/Speciality and Care Group or Corporate Group
Is this a new or existing Policy?	New / Existing – delete as appropriate
Name of individual completing EIA (Should be completed by an individual with a good understanding of the Service/Policy):	Name and Job Title
Contact details:	Number in full, not extension only

Information Category	Detailed Information
1. Policy Aim - Who is the Policy aimed at? (The Policy is the Strategy, Policy, Proposal or Service Change to be assessed)	
2. Policy Objectives	
3. Policy Intended Outcomes	
4. How will you measure each outcome?	

Information Category	Detailed Information
5. Who is intended to benefit from the policy?	
6a. Who did you consult with? (Please select Yes or No for each category)	• Workforce: Choose an item. • Patients/ visitors: Choose an item. • Local groups/ system partners: Choose an item. • External organisations: Choose an item. • Other: Choose an item.
6b. Please list the individuals/groups who have been consulted about this policy.	**Please record specific names of individuals/ groups:**
6c. What was the outcome of the consultation?	
6d. Have you used any of the following to assist your assessment?	**National or local statistics, audits, activity reports, process maps, complaints, staff, or patient surveys:**

7. The Impact
Following consultation with key groups, has a negative impact been identified for any protected characteristic? Please note that a rationale is required for each one.

Where a negative impact is identified without rationale, the key groups will need to be consulted again.

Protected Characteristic	(Yes or No)	Rationale
Age	Choose.	
Sex (male or female)	Choose.	
Gender reassignment (Transgender, non-binary, gender fluid etc.)	Choose.	
Race	Choose.	
Disability (e.g. physical or cognitive impairment, mental health, long term conditions etc.)	Choose.	
Religion or belief	Choose.	

Protected Characteristic	(Yes or No)	Rationale
Marriage and civil partnership	Choose.	
Pregnancy and maternity	Choose.	
Sexual orientation (e.g. gay, straight, bisexual, lesbian etc.)	Choose.	

A robust rationale must be in place for all protected characteristics. If a negative impact has been identified, please complete section 2. If no negative impact has been identified and if this is not a major service change, you can end the assessment here.
I am confident that section 2 of this EIA does not need completing as there are no highlighted risks of negative impact occurring because of this policy. Name of person confirming result of initial impact assessment: Name to be included here. .....