Document No: **43549**

TITLE: Pre-Labour Rupture of Membranes (incl. Term and Pre-term)

Contents

1. Purpose

To provide guidance to all health practitioners providing care for pregnant women/people with pre-labour rupture of membranes (PROM) from 24 weeks' gestation.

In recognition of Te Tiriti o Waitangi (the Treaty of Waitangi) and the Crown's special relationship with Maori, Te Whatu Ora – Lakes, is committed to acknowledging the Treaty by working in partnership with Maori. Staff involved in implementing this policy should be aware of the Tiriti o Waitangi Policy (EDMS 40583).

2. Scope

All Te Whatu Ora Lakes obstetric and midwifery staff and LMCs.

3. Definitions

CTG	Cardiotocograph
DAU	Day Assessment Unit
DHB	District Health Board
EOGBS	Early Onset Group B Strep
FBC	Full Blood Count
GBS	Group B Streptococcus
HR	Heart Rate
Hrs.	Hours
IAP	Intrapartum Antibiotic Prophylaxis
IOL	Induction of Labour
IV	Intravenous
LMC	Lead Maternity Carer
mg	Milligrams
PROM	Term Pre-labour Rupture of Membranes: is rupture of the membranes prior to established labour in women at 37 completed weeks gestational age.
PPROM	Preterm Premature Rupture of Membranes: is rupture of the membranes prior to established labour in women less than 37 completed weeks gestational age.
RANZCOG	Royal Australian and New Zealand College of Obstetricians & Gynaecologists
ROM	Rupture of Membranes
SROM	Spontaneous Rupture of Membranes
USS	Ultrasound Scan
VE	Vaginal Examination

4. Background

The incidence of term PROM is 8% of pregnancies. Spontaneous labour follows term PROM within 24 hours (70%), 48 hours (85%), and 96 hours (95%) respectively.

PPROM complicates only 2% of pregnancies but is associated with 40% of preterm births.

Both pre-term and term pre-labour rupture of membranes is associated with risks to both the pregnant woman/person and the fetus;

- Preterm labour
- Cord prolapse
- Cord compression
- Placental abruption
- Intrauterine infection/chorioamnionitis
- Pulmonary hypoplasia
- Limb positioning defects
- Perinatal mortality

Background cont'd

The three causes of neonatal death associated with PPROM are;

1. Prematurity
2. Sepsis
3. Pulmonary Hypoplasia

Women/people with intrauterine infection deliver at earlier gestations than non-infected women/people and infants born with sepsis have a mortality rate four times higher than those without sepsis. Maternal chorioamnionitis is also a leading cause of maternal mortality and morbidity world-wide.

The duration of ruptured membranes before action is taken must involve a three-way conversation between the woman/person, LMC, and Obstetrician taking clinical details into account as per Guidelines for Consultation with Obstetric and Related Medical Services (Referral Guidelines).

This guideline should be used in association with Lakes Group B Streptococcus (GBS) Infection guidelines (333970).

5. Procedure

5.1 Diagnosis of Rupture of Membranes

1. Confirm gestation & presentation – review scan results and the clinical notes
2. Obtain the maternal history
3. Initial examination and investigation:
    a. Maternal temperature, pulse, and blood pressure, respiration rate
    b. General examination including abdominal palpation for fetal lie, presentation, tenderness, and contractions
    c. Check the pad/underwear and note any liquor volume, colour or odour
    d. Document findings

If obvious ROM is not confirmed by initial examination proceed to performing;

4. Sterile speculum without lubrication:
    - to visualise liquor pooling in the posterior vaginal fornix.
    - prior to this examination, the woman/person should be lying flat for at least 30 minutes to enable liquor to pool in the posterior fornix.
    - avoid digital vaginal examination, as this has been shown to increase the risk of chorioamnionitis and neonatal infection, unless in active labour or immediate induction of labour is planned.
    - confirm obvious ROM
    - visualise the cervix to estimate dilation (if pre-term)
    - obtain high vaginal swab
    - take a combined low vaginal and anorectal swab for GBS

Only if there is still diagnostic uncertainty of ROM, proceed to performing;

5. Amnisure® test: at the time of examination, as per the manufacturer's instructions.

> **Amnisure® Warning:** (RANZCOG, 2021)
> - **False-positive** results may occur in the presence of blood or semen, alkaline antiseptics, certain lubricants, trichomonas, or bacterial vaginosis.
> - **False-negative** results may occur with prolonged membrane rupture and minimal residual fluid.
>
> **Test findings should be interpreted in conjunction with clinical findings.**
> **Not to be used as part of routine assessment for ruptured membranes.**

6. Urine dipstick, +/- MSU if indicated
7. Blood testing – group and hold, FBC, CRP (if pre-term or indicated)
8. FHR auscultation – if any indication perform a CTG (>28 weeks gestation) to assess fetal wellbeing and uterine activity
9. Consider USS for fetal presentation, growth and amniotic fluid volume
10. Identify any history of a cervical suture/cerclage procedure and any recent vaginal examinations

If suspected pre-term ROM <34 weeks, an LMC should consider requesting support from the obstetric team for diagnosis of ROM.

Please see Appendix 1. for a summary of this guidance

5.2 Management of Confirmed Rupture of Membranes

Once ROM has been confirmed there are two options for management;

- Expectant (or Conservative) Management – waiting for labour onset
- Active Management – induction of labour

TERM Pre-labour Rupture of Membranes (PROM):

- Mode of delivery is not compromised by choosing either active or expectant management, with equal rates of caesarean section and instrumental deliveries.
- LMCs should review risk factors for Group B Streptococcus (as per the GBS infection guideline, 333970) and consult with the Obstetric team within 24 hours, as per Guidelines for Consultation with Obstetric and Related Medical Services (Referral Guidelines).
- If the woman/person has risk factors for Group B Streptococcus please refer to the GBS infection guidelines and follow the recommended treatment regimen. Women/people with term PROM who are GBS positive are recommended to have active management.
- Active management through oxytocin administration, leads to reduced rates of maternal chorioamnionitis/sepsis, reduced neonatal intensive and special care admissions, lower rates of early-onset neonatal sepsis, lower rates of neonatal antibiotic use, and greater maternal satisfaction.
- The pregnant woman/person, LMC, and Obstetrician should discuss options, including the risks and benefits of active management versus waiting for up to 24 hours for labour to establish.
- The pregnant woman/person will make the final decision based on the information received as per Guidelines for Consultation with Obstetric and Related Medical Services (Referral Guidelines).

<u>Expectant Management of Term ROM</u>

- <u>Criteria</u>: Women/people with term ROM are eligible for expectant management at home, where they meet all of the following criteria:
  - ✓ No antepartum risk factors for GBS
  - ✓ Term gestation with a fixed cephalic presentation
  - ✓ Clear liquor
  - ✓ Normal fetal movements
  - ✓ No signs of infection (maternal tachycardia >100bpm, fever, uterine tenderness)
  - ✓ Has NOT had a digital VE or cervical suture
  - ✓ Has a telephone
  - ✓ Lives <40 minutes away
  - ✓ Able to get transport to and from the hospital easily
  - ✓ Is able to commit to 4 hourly maternal temperatures, evaluation of vaginal loss and assessment of fetal well-being

- Monitoring: If, after discussion, the woman/person desires conservative management, advise;
    - 4 hourly observations of maternal temperature, pulse, liquor appearance, and monitoring of fetal wellbeing (movements).
    - Avoid intercourse, baths, or the use of tampons.
    - Signs and symptoms of chorioamnionitis, including maternal pyrexia ≥37.8˚C, HR >100, offensive vaginal discharge, abdominal pain, and/or a change in fetal movements.
    - Call LMC in the first instance for any concerns, and then present to hospital.

- An induction of labour (IOL) should be booked for 24 hours post rupture of membranes, in case labour does not commence spontaneously.
- There is no indication for antibiotics prior to commencement of labour but they should be commenced at 24 hours after ROM if in labour. Please refer to Appendix 2. and the GBS guideline for more information.

Active Management of Term ROM

- Method: Induction of labour can be either by prostaglandin or oxytocin, with oxytocin preferred (due to lower associated rates of infection).

  Prostaglandins are useful where there is an unfavourable cervix following a risk-benefit assessment. The available evidence to recommend oxytocin vs. prostaglandins in the context of term PROM is limited - further trials are needed. Misoprostol may have a role in this context in the future as some trials suggest it has a lower risk of uterine hyperstimulation.
- Vaginal examinations (VEs) have been shown to be the strongest predictor of clinical chorioamnionitis for those with PROM, with increasing rates from 3-4 VEs. These should be minimised in labour.
- Women/people with signs of infection in association with PROM at term require urgent Obstetric assessment and immediate IV broad spectrum antibiotics. Signs of infection may include fever, maternal or fetal tachycardia, leucocytosis, uterine tenderness, and offensive vaginal discharge. Birth should be expedited in the manner that is most suitable for the clinical situation.
- There is no indication for antibiotics prior to induction of labour but they should be commenced when induction of labour commences.

Please see Appendix 1. for a summary of this guidance

PRE-TERM Pre-labour Rupture of Membranes (PPROM)

Between 24+0/40 to 36+6/40.

In the absence of complications, current studies recommend conservative management until 37/40 gestation. The PPROMT trial data suggests there is neonatal benefit to conservative management between 34-37/40 for pre-labour ROM.

- Consultation: with the Obstetric team is required under Guidelines for Consultation with Obstetric and Related Medical Services (Referral Guidelines). For gestations between 22+5/40 and 24/40 further consultation with the Obstetric team with the Paediatric team for patient counselling is recommended.
- Antenatal corticosteroids: (11.4mg Betamethasone IM at diagnosis and a repeat 24 hours later) are recommended for all women/people with preterm ROM up until 34+6/40
- Transfer to Tertiary Unit: at gestations <32 weeks for singletons and <34 weeks for twin gestations, transfer to a tertiary unit and staff should follow the Waikato referral pathway by calling the ACM in the first instance
- Nifedipine Tocolysis: should be given if contractions are present to enable completion of steroids. Consideration should be given to the administration of Nifedipine Tocolysis for transfer to a tertiary unit.
- Magnesium Sulphate: should be used for women/people in whom preterm birth at <30 weeks is considered likely within the next 24 hours. Magnesium sulphate should be given within a minimum of 4 hours before birth to reduce the risk of cerebral palsy and protect gross motor function in preterm infants. There is no evidence of adverse long-term fetal or maternal outcomes.
- Admit for Observation: Women/people who are not transferred to a tertiary unit should be admitted to hospital and observed for at least 48-72 hours.
    - 4-hourly observations: maternal temperature, BP, HR, liquor colour, and fetal well-being.
    - Daily CTGs are recommended whilst an inpatient.
- Outpatient Management: Women/people who live close to the hospital, have adequate support, a telephone, and means of transportation may be eligible for outpatient management. They should be advised of the signs and symptoms of chorioamnionitis, including;
    - Maternal pyrexia ≥37.8˚C
    - Heart Rate >100
    - Offensive vaginal discharge, abdominal pain, and/or a change in fetal movements.

    Women/people should be advised to;

    - Avoid intercourse, baths, or the use of tampons.
    - Call their LMC in the first instance for any concerns.
    - Check their temperature twice daily.
    - Attend twice weekly appointments in DAU and have USS assessment of growth and amniotic fluid volume performed every 2-3 weeks.
    - Have twice weekly FBC and CRPs to assist with the diagnosis of infection.

- Oral Antibiotics: should be commenced at diagnosis of pre-term pre-labour ROM. Erythromycin ethyl succinate 400mg PO QID should be prescribed for 10 days following ROM. The aim is to prolong the pregnancy and to reduce the risk of chorioamnionitis, perinatal morbidity, neonatal sepsis, necrotising enterocolitis and respiratory distress syndrome. (N.B.: Amoxycillin/Clavulanic acid should be avoided in women/people with ROM because of concerns regarding increased incidence of necrotising enterocolitis).

  Preterm labour is an indication for IV antibiotics in labour for GBS prophylaxis.

  Please refer to Appendix 2. and the Group B Streptococcus (GBS) Infection Guidelines 333970 for more information.

- Signs of Infection: if there are any signs of intrauterine infection, a consultant review is indicated as well as the commencement of broad-spectrum antibiotics. Birth should be expedited in the manner that is most suitable for the clinical situation.

Please see Appendix 1. for a summary of this guidance

5.3 Group B Streptococcus (GBS) Risk Factors

- Women/people with risk factors for GBS, but who are well, with SROM at term are at higher risk of having a baby affected by EOGBS infection. After LMC assessment, consultation with the Obstetrician must occur and women/people should be offered an induction of labour as soon as practicable.

  Intrapartum antibiotic prophylaxis (IAP) should begin at the commencement of the induction of labour.

  See Appendix 2. for Antibiotic Regime for Intra-partum Antibiotic Prophylaxis

- Vaginal examinations should be avoided until labour is established and effort should be made to avoid repeated vaginal examinations in labour as these are known to increase the risk of chorioamnionitis and neonatal infection.

  Please refer to the Group B Streptococcus (GBS) Infection Guidelines 333970 for more detail

5.4 Neonatal Assessment

Please refer to the Group B Streptococcus (GBS) Infection Guidelines 333970 for more detail

6. Related Documentation

- Lakes Group B Streptococcus (GBS) Infection Guidelines - EDMS No. 333970.

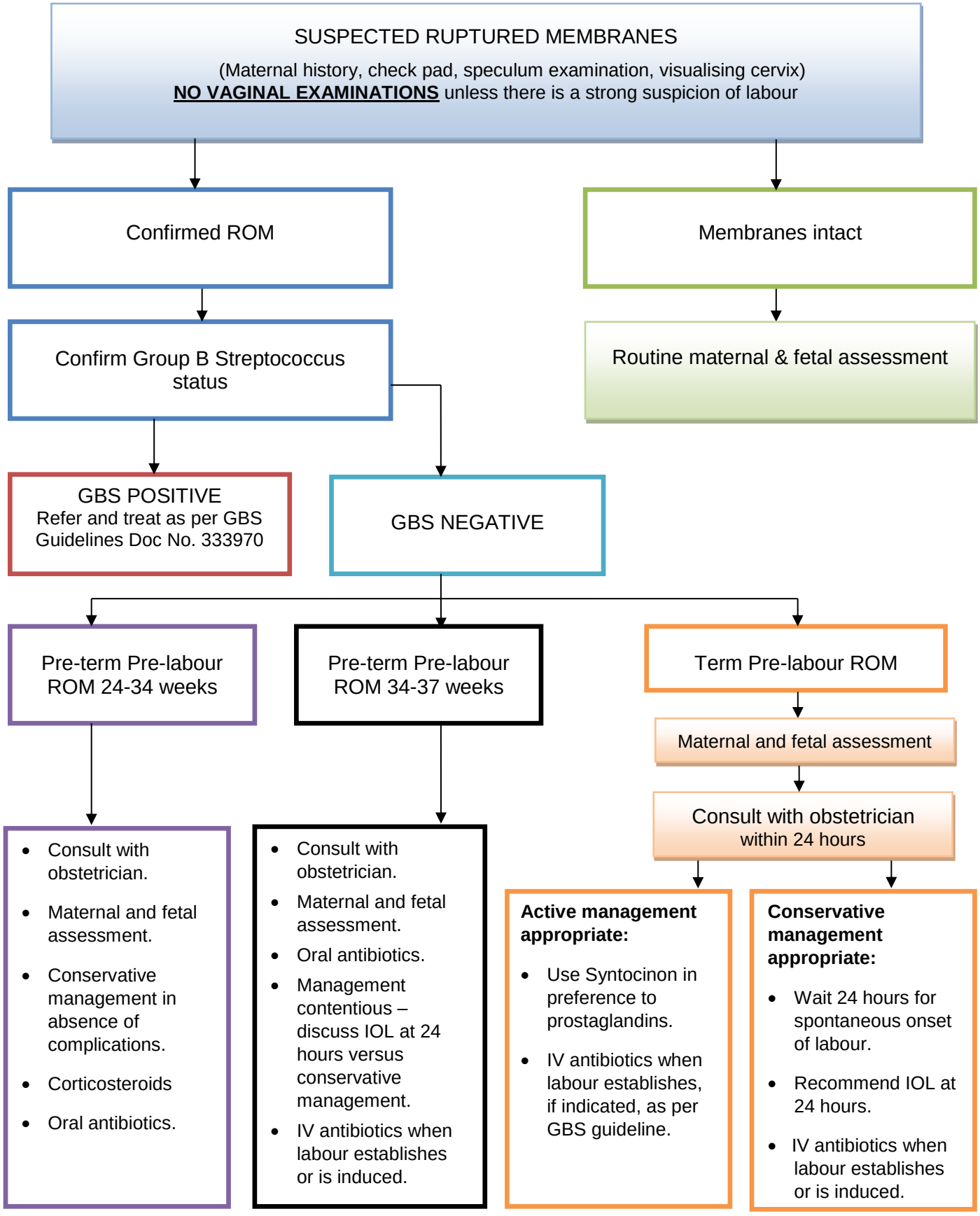
7. References

- ADHB. 2011. Rupture of membranes in pregnancy. http://nationalwomenshealth.adhb.govt.nz/Portals/0/Documents/Policies/Rupture%20of%20Membranes%20in%20Pregnancy_.pdf
- CDHB. 2017. Preterm pre-labour rupture of membranes. https://www.cdhb.health.nz/wp-content/uploads/76c0ce6f-glm0028-preterm-pre-labour-rupture-of-membranes.pdf
- CDHB. 2017. Pre-labour rupture of membranes at term. https://www.cdhb.health.nz/wp-content/uploads/b6529f4e-glm0043-pre-labour-rupture-of-membranes-at-term-231027.pdf
- Darlow, B., et al. 2015. The prevention of early-onset neonatal group B streptococcus infection: New Zealand consensus guidelines 2014. NZJM, 128(1425)
- Ministry of Health 2012: Guidelines for Consultation with Obstetric and Related Medical Services (Referral Guidelines) Public Health and Disability Act 2000
- Morris et al. 2016. Immediate delivery with compared with expectant management after preterm pre-labour rupture of the membranes close to term (PPROMT trial): a randomised controlled trial. Lancet, 387(10017).
- Qiagen. Amnisure ROM test instructions for use. https://www.qiagen.com/us/resources/resourcedetail?id=c9824074-78f4-4c30-a933-2a313ce21656&lang=en
- RANZCOG 2014. Intrapartum Fetal Surveillance. https://www.ranzcog.edu.au/RANZCOG_SITE/media/RANZCOG-MEDIA/Women%27s%20Health/Statement%20and%20guidelines/Clinical-Obstetrics/Intrapartum-Fetal-Surveillance-Guideline-Third-edition-Aug-2014.pdf?ext=.pdf
- RANZCOG. 2021. Term pre-labour rupture of membranes (term PROM). https://ranzcog.edu.au/wp-content/uploads/2022/05/Term-Prelabour-Rupture-of-Membranes-Term-PROM.pdf

Authorised by: Maternity Clinical Quality Improvement (CQI) Meeting

Appendix 1.: Algorithm for Pre-Labour Rupture Of Membranes

To be read in conjunction with Pre-Labour Rupture of Membranes Guideline Document No. 43549



Appendix 2. Antibiotic Regime for Intra-Partum Antibiotic Prophylaxis

Antibiotic Regime:

First-line

- IV Benzylpenicillin initial dose 1.2g, then 0.6g q4 hourly until birth
- If Benzylpenicillin is unavailable, IV amoxicillin 2g, then 1g q4 hourly until birth

Second-line

- Allergy to penicillin with a low risk of anaphylaxis (women who do not have a history of anaphylaxis, angioedema, respiratory distress or urticaria after penicillin or a cephalosporin)
- Cephazolin initial dose 2g IV, then 1g q8 hourly until birth

Third-line

- Allergy to penicillin with a high risk of anaphylaxis (women who do have a history of anaphylaxis, angioedema, respiratory distress or urticaria after a penicillin or a cephalosporin)
- Vancomycin initial dose 1g IV, then 1g q12 hourly until birth
- Erythromycin and clindamycin are not recommended due to increasing resistance patterns