## Preterm prelabour rupture of membranes (PPROM)

**IMPORTANT:** Consider individual clinical circumstances. Consult a pharmacopeia for complete drug information. Read the full disclaimer at www.health.qld.gov.au/qcg

### Aspect | Consideration
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**Relevant to:** & Women with a live, singleton fetus with cephalic presentation between 22+0 and 37+0 weeks gestation with suspected preterm prelabour rupture of membranes (PPROM)  
Sub-categories of preterm variously defined by gestational age as¹:  
- Late preterm or near term (34+0 to 37+0 weeks)  
- Moderately preterm (32+0 to 33+6 weeks)  
- Very preterm (28+0 to 31+6 weeks)  
- Extremely preterm (less than 28+0 weeks)  

**Context** & Occurs in approximately 3% of pregnancies²,³  
- Responsible for 30% of preterm births³,⁴  
- 56% of women birth within seven days, 76% within 14 days and 86% within 21 days²  
- Advise women to present for assessment when PPROM is suspected

**Standard care** & Refer to Queensland Clinical Guideline: [Standard care]⁵ for care considered ‘usual’ or ‘standard’  
- Includes for example: privacy, consent, decision making, sensitive communication, medication administration, staff education and support, culturally appropriate care

**Aim of care** & Maximise benefits of increasing fetal maturity in-utero while minimising potential risks⁴,⁶  
- Care recommendations are therefore based on gestational age, and individual maternal and fetal circumstances

**Initial assessment** & Review history and time of fluid loss (sudden gush of fluid or continued leakage of fluid per vagina)  
- Review history (obstetric, social, medical, surgical)  
- Maternal vital signs  
- General physical examination  
- Abdominal palpation (presentation, lie, fundal height, fetal movement and uterine activity)  
- Fetal heart rate (FHR)/cardiotocograph (CTG) (relevant to gestation)  
- Assess vaginal loss on pad (amount, colour, consistency, odour, bleeding, meconium)  
- If unable to confirm PPROM and/or repeat presentation with good history, consider increased surveillance

**Vaginal examination** & Avoid digital vaginal examination (VE) as may increase risk of infection³,⁸  
- Use sterile speculum³ to visualise⁹:  
  - Pooling of amniotic fluid or leakage from the cervical os with coughing  
  - Cervix, length, dilatation and to exclude cord prolapse  
- If ongoing uncertainty of diagnosis, test vaginal secretions with immunoassay (e.g. AmniSure⁸) or pH stick (e.g. Nitrazine) as per manufacturer’s instructions  
- False-positive test results may occur in the presence of blood or semen, certain infections (e.g. bacterial vaginosis) or antiseptics¹⁰

**Investigations** & Routine antenatal bloods that have not already been collected  
- Full blood count  
- Consider baseline C-reactive protein (CRP)  
  - Conflicting evidence about usefulness in management of PPROM¹¹—may be a useful adjunct to exclude infection (e.g. chorioamnionitis)¹²-¹⁷  
- Dipstick urinalysis and midstream urine for microscopy, culture and sensitivity (MCS)  
  - Consider first void urinary PCR for gonorrhoea and chlamydia  
- Vaginal-rectal swab or vaginal-perianal swab for Group B Streptococcus (GBS)  
  - If GBS positive, refer to Queensland Clinical Guideline: [Early onset Group B Streptococcal Disease]¹⁸ for management options  
  - With sterile speculum:  
    - High vaginal swab for MCS and GBS (if not already obtained)  
- Transabdominal ultrasound scan to assess fetal wellbeing and confirm presentation
### Initial management

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Considerations</th>
</tr>
</thead>
</table>
| **Admission and inpatient care** | • If confirmed PPROM, admit for further assessment and monitoring as per local protocols  
  ○ Cord prolapse  
  ○ Antepartum haemorrhage  
  ○ Infection—suggested initial monitoring:  
    ▪ Four hourly maternal heart rate, temperature, vaginal loss, uterine tenderness/activity, ask about fetal movements, FHR  
    ▪ If equal to, or greater than 28+0 weeks gestation, admission and daily CTG  
  • If chorioamnionitis suspected, recommend intravenous (IV) antibiotics—refer to Queensland Clinical Guideline: Preterm labour and birth[^19]  
  • Cerclage removal: optimal timing is unclear[^8]  
    ○ No significant differences in prolonged latency, infection or neonatal outcomes[^20-22] for removal versus retention  
    ○ Delaying removal until 24 to 34 weeks gestation without signs of infection of preterm labour, may be considered to facilitate in-utero transfer, when required[^23] |
| **Routine antibiotics** | • Known to prolong latency and reduce maternal and fetal infection following PPROM[^24]  
  ○ No evidence that antibiotic prophylaxis alters perinatal mortality or longer-term outcomes[^25]  
  • Optimal regimen is unclear[^8,25]—if no local protocols exist recommend[^26]:  
    ○ Amoxicillin/ampicillin 2 g IV every 6 hours for 48 hours, followed by amoxicillin 250 mg oral every 8 hours for a total of 7 days (IV and oral) or until birth (whichever is sooner)  
    PLUS  
    ○ Erythromycin 250 mg (or erythromycin ethyl succinate 400 mg) oral every 6 hours for 7 days or until birth (whichever is sooner)  
  • Azithromycin 1 g oral as a single dose may be considered in lieu of erythromycin[^27,28]  
  • If history of confirmed penicillin hypersensitivity erythromycin may be used as a single agent for 10 days[^26]  
    Consider referral to an infectious diseases clinician and eTG prophylaxis for PPROM[^56]  
  • Amoxicillin/clavulanic acid not recommended as associated with increased risk of necrotising enterocolitis[^9,24] |
| **Prematurity** | • Refer to Queensland Clinical Guidelines for recommendations regarding:  
  ○ Antenatal corticosteroids[^29]  
  ○ Magnesium sulfate for neuroprotection (before 30 weeks gestation[^19])  
  ○ Care of gestations at the lower limits of viability[^30]  
  ○ Intrapartum antibiotic prophylaxis for GBS[^18] |
| **Supportive care for families** | • Counsel about prematurity relevant to gestation[^9] including (if appropriate) viability and options for care  
  • Offer psychological support  
  • Involve other members of the multidisciplinary team relevant to circumstances in care planning (e.g. neonatologist, paediatrician, social worker, maternal fetal medicine specialist) |
| **Self-care advice** | • Advise about risk of cord prolapse and emergency management if occurs  
  • Advise about the risk of infection and the importance of:  
    ○ Personal hygiene—change sanitary pad four hourly, showering and not bathing  
    ○ Self-monitoring temperature daily and vaginal loss with each pad change  
    ○ Avoiding tampon use, vaginal creams/medications, vaginal intercourse, swimming/baths  
    ○ Attending all review appointments  
  • Provide information and advise to seek care from a healthcare provider if:  
    ○ Concern re fetal movements [refer to Queensland Clinical Guideline: Fetal movements[^31]]  
    ○ Changes in vaginal loss (colour, odour, amount, bleeding, or meconium)  
    ○ Signs of early labour/abdominal tenderness or pain  
    ○ Temperature 37.5 °C or above or feeling unwell or other concerns |
| **In-utero transfer** | • Consider the likelihood of preterm birth and potential need for transfer to higher level service  
  • Tocolysis may be considered to achieve antenatal corticosteroid administration or transfer  
  • If indicated, contact Retrieval Services Queensland (RSQ) to discuss and coordinate transfer |
| **Home care** | • Consider individual circumstances when determining suitability for home care or other hospital supported accommodation (e.g. on or off hospital campus accommodation)  
  • Insufficient evidence to compare planned home versus hospital management for serious neonatal morbidity, chorioamnionitis, gestational age at birth, birth weight, admission to neonatal intensive care[^9] or continuous bed rest[^28] |

[^19]: Queensland Clinical Guidelines
[^20-22]: Queensland Clinical Guidelines
[^23]: Queensland Clinical Guidelines
[^24]: Queensland Clinical Guidelines
[^25]: Queensland Clinical Guidelines
[^26]: Queensland Clinical Guidelines
[^27]: Queensland Clinical Guidelines
[^28]: Queensland Clinical Guidelines
[^29]: Queensland Clinical Guidelines
[^30]: Queensland Clinical Guidelines
[^31]: Queensland Clinical Guidelines
Ongoing surveillance

There is a lack of high level evidence about optimal frequency, or type of ongoing maternal and fetal surveillance. Local protocols may vary. The following *minimum* surveillance is based on the consensus view of the working party. Increase frequency, perform a clinical examination and seek medical review if there is concern for maternal and/or fetal wellbeing.

Suggested minimum surveillance

<table>
<thead>
<tr>
<th>Surveillance</th>
<th>Frequency</th>
<th>Comment</th>
</tr>
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<tbody>
<tr>
<td>Maternal self-monitoring</td>
<td></td>
<td></td>
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<tr>
<td>Temperature and heart rate</td>
<td>Daily to twice daily</td>
<td>Review and record at each presentation</td>
</tr>
<tr>
<td>Vaginal loss</td>
<td>With pad changes</td>
<td>Note any change in colour, odour, amount, meconium, bleeding</td>
</tr>
<tr>
<td>Uterine tenderness/activity</td>
<td>Ongoing</td>
<td>May indicate preterm labour or chorioamnionitis</td>
</tr>
<tr>
<td>Fetal movements</td>
<td>Note usual pattern and frequency of movement</td>
<td>if changes, arrange medical review and CTG</td>
</tr>
<tr>
<td>Maternal wellbeing</td>
<td>Ongoing</td>
<td>Further investigations as indicated</td>
</tr>
<tr>
<td>Fetal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTG/FHR</td>
<td>Weekly and with each presentation</td>
<td>CTG as per local protocol—if no local protocol CTG if greater than 28–30 weeks</td>
</tr>
<tr>
<td>Ultrasound scan</td>
<td>Serial second weekly as indicated</td>
<td>If greater than 23 weeks—discuss with maternal fetal medicine specialist</td>
</tr>
<tr>
<td>Pathology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full blood count</td>
<td>If indicated</td>
<td>Limited evidence for detection of uterine infection and/or improving maternal and neonatal outcomes</td>
</tr>
<tr>
<td>Urine MCS</td>
<td>If indicated</td>
<td>Refer to investigations</td>
</tr>
<tr>
<td>High/low vaginal swab</td>
<td>If indicated</td>
<td>Refer to investigations</td>
</tr>
</tbody>
</table>

Outcomes for planned birth versus expectant management (24–37 weeks gestation)

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Trials</th>
<th>Participants (n=number)</th>
<th>Relative risk</th>
<th>Confidence interval (95%)</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antepartum haemorrhage&lt;34 weeks</td>
<td>1</td>
<td>n=1835</td>
<td>0.5</td>
<td>0.4 to 0.9</td>
<td>Less likely</td>
</tr>
<tr>
<td>Chorioamnionitis &gt;34 weeks</td>
<td>3</td>
<td>n=847</td>
<td>0.26</td>
<td>0.12 to 0.57</td>
<td>Less likely</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>n=418</td>
<td>0.77</td>
<td>0.45 to 1.30</td>
<td></td>
</tr>
<tr>
<td>Caesarean section &gt;34 weeks</td>
<td>5</td>
<td>n=2922</td>
<td>1.22</td>
<td>1.05 to 1.42</td>
<td>No significant difference</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>n=488</td>
<td>1.46</td>
<td>1.08 to 1.42</td>
<td>No significant difference</td>
</tr>
<tr>
<td>Endometritis &gt;34 weeks</td>
<td>3</td>
<td>n=2562</td>
<td>0.37</td>
<td>0.10 to 1.4</td>
<td>No significant difference</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>n=418</td>
<td>2.23</td>
<td>1.29 to 3.84</td>
<td>Decreased</td>
</tr>
<tr>
<td>Neonatal infection &gt;34 weeks</td>
<td>12</td>
<td>n=3628</td>
<td>0.93</td>
<td>0.66 to 1.30</td>
<td>No significant difference</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>n=490</td>
<td>1.61</td>
<td>0.74 to 3.50</td>
<td>No significant difference</td>
</tr>
<tr>
<td>Respiratory distress &gt;34 weeks</td>
<td>1</td>
<td>n=1829</td>
<td>1.60</td>
<td>1.10 to 2.30</td>
<td>More likely</td>
</tr>
</tbody>
</table>

> greater than, < less than
Timing of birth

Optimal gestation at which to expedite birth is unclear.\(^3\,\text{4, 35}\) Individually consider the possibility of expectant management after 24+0 weeks gestation until at least 37+0 weeks gestation.\(^3\)

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<tr>
<td>Near term</td>
<td>• Between 34+0 and 37+0 weeks there is limited and inconsistent evidence to guide practice</td>
</tr>
<tr>
<td>Less than 34+0 weeks</td>
<td>• The risks of prematurity are generally greater than the risks of expectant management</td>
</tr>
<tr>
<td>Consider expediting birth</td>
<td>• If concern for maternal or fetal wellbeing at initial presentation or during subsequent care</td>
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</tbody>
</table>

References


