

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
Relevant to:	<ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Occurs in approximately 3% of pregnancies^{2,3} Responsible for 30% of preterm births^{3,4} 56% of women birth within seven days, 76% within 14 days and 86% within 21 days² Advise women to present for assessment when PPRM is suspected
Standard care	<ul style="list-style-type: none"> Refer to Queensland Clinical Guideline: Standard care⁵ for care considered 'usual' or 'standard' <ul style="list-style-type: none"> Includes for example: privacy, consent, decision making, sensitive communication, medication administration, staff education and support, culturally appropriate care
Aim of care	<ul style="list-style-type: none"> Maximise benefits of increasing fetal maturity in-utero while minimising potential risks^{4,6} <ul style="list-style-type: none"> Care recommendations are therefore based on gestational age, and individual maternal and fetal circumstances
Initial assessment	<ul style="list-style-type: none"> Review history and time of fluid loss (sudden gush of fluid or continued leakage of fluid per vagina) <ul style="list-style-type: none"> 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 PPRM and/or repeat presentation with good history, consider increased surveillance
Vaginal examination	<ul style="list-style-type: none"> Avoid digital vaginal examination (VE) as may increase risk of infection^{3,8} Use sterile speculum³ to visualise⁹: <ul style="list-style-type: none"> 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. AmniSure®) or pH stick (e.g. Nitrazine) as per manufacturer's instructions <ul style="list-style-type: none"> False-positive test results may occur in the presence of blood or semen, certain infections (e.g. bacterial vaginosis) or antiseptics¹⁰
Investigations	<ul style="list-style-type: none"> Routine antenatal bloods that have not already been collected Full blood count Consider baseline C-reactive protein (CRP) <ul style="list-style-type: none"> Conflicting evidence about usefulness in management of PPRM¹¹—may be a useful adjunct to exclude infection (e.g. chorioamnionitis)¹²⁻¹⁷ Dipstick urinalysis and midstream urine for microscopy, culture and sensitivity (MCS) <ul style="list-style-type: none"> Consider first void urinary PCR for gonorrhoea and chlamydia Vaginal-rectal swab or vaginal-perianal swab for Group B <i>Streptococcus</i> (GBS) <ul style="list-style-type: none"> If GBS positive, refer to Queensland Clinical Guideline: Early onset Group B Streptococcal Disease¹⁸ for management options With sterile speculum: <ul style="list-style-type: none"> High vaginal swab for MCS and GBS (if not already obtained) Transabdominal ultrasound scan to assess fetal wellbeing and confirm presentation

Initial management

Aspect	Considerations
Admission and inpatient care	<ul style="list-style-type: none"> • If confirmed PPROM, admit for further assessment and monitoring as per local protocols • Maintain a high index of suspicion for: <ul style="list-style-type: none"> ◦ Cord prolapse ◦ Antepartum haemorrhage ◦ Infection—suggested initial monitoring: <ul style="list-style-type: none"> ▪ 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 birth¹⁹ • Cerclage removal: optimal timing is unclear⁹ <ul style="list-style-type: none"> ◦ No significant differences in prolonged latency, infection or neonatal outcomes²⁰⁻²² 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 required²³
Routine antibiotics	<ul style="list-style-type: none"> • Known to prolong latency and reduce maternal and fetal infection following PPROM²⁴ <ul style="list-style-type: none"> ◦ No evidence that antibiotic prophylaxis alters perinatal mortality or longer-term outcomes²⁵ • Optimal regimen is unclear^{9,25}—if no local protocols exist recommend²⁶: <ul style="list-style-type: none"> ◦ 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) <p>PLUS</p> <ul style="list-style-type: none"> ◦ 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 <i>eTG prophylaxis for PPROM</i>²⁶ • Amoxicillin/clavulanic acid not recommended as associated with increased risk of necrotising enterocolitis^{9,24}
Prematurity	<ul style="list-style-type: none"> • Refer to Queensland Clinical Guidelines for recommendations regarding: <ul style="list-style-type: none"> ◦ Antenatal corticosteroids²⁹ ◦ Magnesium sulfate for neuroprotection (before 30 weeks gestation)¹⁹ ◦ Care of gestations at the lower limits of viability³⁰ ◦ Intrapartum antibiotic prophylaxis for GBS¹⁸
Supportive care for families	<ul style="list-style-type: none"> • Counsel about prematurity relevant to gestation⁹ 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	<ul style="list-style-type: none"> • Advise about risk of cord prolapse and emergency management if occurs • Advise about the risk of infection and the importance of: <ul style="list-style-type: none"> ◦ 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: <ul style="list-style-type: none"> ◦ Concern re fetal movements [refer to Queensland Clinical Guideline: Fetal movements³¹] ◦ 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 care⁴ or continuous bed rest²⁸

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

Surveillance	Frequency	Comment
Maternal self-monitoring		
Temperature and heart rate	• Daily to twice daily	• Review and record at each presentation
Vaginal loss	• With pad changes	• Note any change in colour, odour, amount, meconium, bleeding
Uterine tenderness/activity	• Ongoing	• May indicate preterm labour or chorioamnionitis
Fetal movements	• Note usual pattern and frequency of movement	• If changes, arrange medical review and CTG
Maternal wellbeing	• Ongoing	• Further investigations as indicated
Fetal		
CTG/FHR	• Weekly and with each presentation	• CTG as per local protocol—if no local protocol CTG if greater than 28–30 weeks • Fetal tachycardia may indicate infection ¹⁰
Ultrasound scan	• Serial second weekly as indicated	• If greater than 23 weeks—discuss with maternal fetal medicine specialist
Pathology		
Full blood count	• If indicated	• Limited evidence for detection of uterine infection and/or improving maternal and neonatal outcomes ³²
Urine MCS	• If indicated	• Refer to investigations
High/low vaginal swab	• If indicated	• Refer to investigations

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

Outcomes	Trials	Participants (n=number)	Relative risk	Confidence interval (95%)	Interpretation
Antepartum haemorrhage³³ > 34 weeks	1	n=1835	0.5	0.4 to 0.9	Less likely
Chorioamnionitis³⁴ > 34 weeks	3	n=847	0.26	0.12 to 0.57	Less likely
< 34 weeks	4	n=418	0.77	0.45 to 1.30	No significant difference
Caesarean section³⁴ > 34 weeks	5	n=2922	1.22	1.05 to 1.42	No significant difference
< 34 weeks	5	n=488	1.46	1.08 to 1.42	No significant difference
Endometritis³⁴ > 34 weeks	3	n=2562	0.37	0.10 to 1.4	No significant difference
< 34 weeks	4	n=418	2.23	1.29 to 3.84	Decreased
Neonatal infection³⁴ > 34 weeks	12	n=3628	0.93	0.66 to 1.30	No significant difference
< 34 weeks	5	n=490	1.61	0.74 to 3.50	No significant difference
Respiratory distress³³ > 34 weeks	1	n=1829	1.60	1.10 to 2.30	More likely

> greater than, < less than

Timing of birth

Optimal gestation at which to expedite birth is unclear.^{34,35} Individually consider the possibility of expectant management after 24+0 weeks gestation until at least 37+0 weeks gestation.³

Aspect	Considerations
Near term	<ul style="list-style-type: none"> Between 34+0 and 37+0 weeks there is limited and inconsistent evidence to guide practice
Less than 34+0 weeks	<ul style="list-style-type: none"> The risks of prematurity are generally greater than the risks of expectant management
Consider expediting birth	<ul style="list-style-type: none"> If concern for maternal or fetal wellbeing at initial presentation or during subsequent care

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