Suspected PPROM: MFAU quick reference guide (QRG) ......................2

Assessment .................................................................................. 2

PPROM medical and midwifery management.................................3

Key points ...................................................................................... 3

Diagnosis ........................................................................................ 4

Medical history .............................................................................. 4

Physical examination ..................................................................... 4

Amniotic fluid leak panty liner (e.g. Al – Sense™)................................. 4

Ultrasound examination ................................................................ 5

Management .................................................................................. 5

Observations .................................................................................. 5

Pathology tests .............................................................................. 6

Maternal education ........................................................................ 6

Referrals ........................................................................................ 6

Fetal surveillance ........................................................................... 7

Antibiotics ...................................................................................... 7

Corticosteroids .............................................................................. 8

Amniocentesis ............................................................................... 8

Amniinfusion ................................................................................ 8

Progesterone ................................................................................ 8

Prophylactic Tocolysis .................................................................. 8

Cervical Cerclage .......................................................................... 8

Magnesium Sulphate ................................................................... 9

Outpatient management .................................................................. 9

Future Pregnancy ............................................................................ 10

Care on the ward: QRG .................................................................11

PPROM confirmed: Outpatient management: MFAU QRG ..........13

Assessment ................................................................................... 13

Weekly Assessments ..................................................................... 13

Outpatient management of confirmed PPROM: Flow chart ..........14

References .................................................................................... 15
Suspected PPROM: MFAU quick reference guide (QRG)

Assessment

**Note: Do not perform a digital examination as it increases risk of infection**

1. Document time and history of the reported vaginal loss. Note type, colour, amount, and any abnormal smelling discharge.
2. Document maternal temperature, pulse and blood pressure (BP), respirations & oxygen saturation.
3. Perform an abdominal palpation noting:
   - Symphysis fundal height
   - Lie (if appropriate depending on gestation)
   - Presentation (if appropriate depending on gestation)
   - Uterine tenderness, irritability / activity
4. Auscultate the fetal heart rate and confirm presence of fetal movements.
5. If ≥24 weeks gestation, commence a CTG if there is any tenderness or uterine activity. If the woman is having uterine tightenings > 1:10 minutes see Clinical Guideline Preterm Labour, and notify the Obstetric Medical team.
6. Provide the woman with an amniotic fluid leak self-test panty liner (e.g. Al-Sense) to wear and encourage mobilisation for the next 5-10 minutes within the department.
   - Assess the panty liner for any colour change.
   - If there is a colour change on the panty liner to blue of green there is probable ROM.
   - If the pad remains yellow or turns yellow the fluid leak is probably not ROM.
   - If negative the woman may be discharged home. An ultrasound scan, CTG or speculum does not need to be performed.
   - Advise the woman to continue to wear the panty liner for 12 hours. If the liner turns blue at any stage during the 12 hours she should contact MFAU / her MGP/CMP midwife.
7. **If PROM is confirmed** perform:
   - Low vaginal swab (LVS) for culture
   - Rectal swab (assessing for group B streptococcus)
• Endo cervical swab (ECS) – may be collected for Chlamydia trachomatis or Neisseria gonorrhoea if needed. Perform a High vaginal Swab (HVS) if there is a purulent discharge.
• Collect further pathology, including Full blood picture & CRP, and any booking antenatal bloods and pathology tests as required.
• See section covering medical and midwifery management on confirmed PROM.

8. If PROM not confirmed:
• Discharge home with the panty liner after discussion with the Obstetric Registrar or above.
• Routine antenatal follow up with the usual health provider.
• Instruct the woman to contact MFAU/ MGP/CMP if there are any further signs of PPROM or if the panty liner changes colour in the next 12 hours

9. If PROM unknown: Arrange review by the Obstetric Registrar or above
10. Arrange ultrasound assessment of amniotic fluid volume if there is a history suggestive of PPROM in the absence of clinical signs.

PPROM medical and midwifery management

Key points
1. Digital vaginal examination should be avoided unless the woman is in active labour or birth is imminent.¹
2. Between 23 and 23+6 weeks gestation the decision for corticosteroids administration is made following consultation between the Obstetric/Paediatric Medical Team and the parents.
3. A single course of antenatal corticosteroids should be considered for administration to women with PPROM without signs of infection between 23 and 36+6 weeks gestation.
4. If gestation is less than 34 weeks and in the absence of infection or complications and in circumstances when a course of corticosteroids has not been completed, tocolysis may be considered for threatened premature labour. The extension of steroid use to 36+6 weeks does not mean that tocolytic therapy is recommended past 34 weeks.
5. Broad spectrum antibiotic administration is recommended following PPROM to prevent infection and prolong the pregnancy in the short term, leading to a reduction in neonatal and maternal morbidity.²,³
6. It is the Obstetric Consultant’s decision, as to when to deliver a preterm baby. If expectant management continues >34 weeks, women should be advised of the increased risk for chorioamnionitis and the decreased risk of respiratory problems in

¹
²
³
the neonate.²

7. Provide information on the risks of not delivering at the time of PPROM, including the risk of cord prolapse although this is rare (0.3%) and no more common with expectant management than with immediate delivery.⁴ [New May 2018].

8. Infections of the baby can be insidious and unpredictable in PPROM. This must be clearly relayed to the woman. [New May 2018]

9. All CMP clients who report or suspect premature pre-labour rupture of membranes at < 37 weeks gestation must be referred immediately to their supporting hospital for an obstetric review.

10. Outpatient management of women with PPROM must be approved by a consultant obstetrician.

**Diagnosis**

Diagnosis of PPROM is usually made on the basis of maternal history, physical examination, and ultrasound examination.

**Medical history**

On admission note and document:

- Time of PPROM.
- Type and colour of fluid loss.
- Amount of fluid loss.
- Signs of infection including ‘offensive smelling’ vaginal discharge, uterine tenderness, maternal fever, and fetal tachycardia.

Assess for a differential diagnosis:

- Leakage of urine (incontinence).⁵
- Physiological vaginal discharge⁵.
- Bacterial infection e.g. bacterial vaginosis⁵.
- Cervical mucous (show) which may be a sign of impending labour⁵.

**Physical examination**

**Abdominal palpation**

- Depending on the gestation abdominal palpation may be appropriate to assess fetal size and presentation.
- Note any abdominal tenderness which may indicate infection.

**Amniotic fluid leak panty liner (e.g. Al – Sense™)**

The amniotic fluid leak panty liner (e.g. Al-Sense™) may be used as a screening tool for PPROM > 20 weeks gestation.

- Provide the woman with a liner to wear and encourage mobilisation for the next 5-10 minutes within the department.
Assess the panty liner for any colour change.

If there is a colour change on the panty liner to blue or green there is probable ROM.

If the pad remains yellow or turns yellow the fluid leak is likely not ROM.

If negative the woman may be discharged home. An ultrasound scan, CTG or speculum does not need to be performed.

Advise the woman to continue to wear the panty liner for 12 hours. If the liner turns blue at any stage during the 12 hours she should contact MFAU / her MGP/CMP midwife.

If the panty liner is positive for ROM

• Avoid digital examination unless birth is imminent.
• Perform a sterile speculum examination.
• Obtain a low vaginal swab (LVS) for microscopy and sensitivity.
• Collect LVS and ano-rectal swab for Group B Streptococcus screening.
• Offer screening for Chlamydia if unbooked and no results are available.

Ultrasound examination

Arrange ultrasound examination for gestational age, fetal well-being, growth and estimation of amniotic fluid index (AFI). This provides a useful adjunct for diagnosis of oligohydramnios but is not diagnostic.¹, ⁶

Management

Management is influenced by gestation age of the fetus, presence of infection, advanced labour and evidence of fetal compromise.

Observations

1. **On admission** – perform baseline assessment for temperature, pulse, BP, respirations, O₂ saturation, uterine activity or tenderness, vaginal discharge and urinalysis.

2. Ongoing observations include:
   - **4 hourly:** Temperature, pulse, fetal activity, uterine activity and/or tenderness, and vaginal discharge – assess colour and amount. Note if discharge is ‘offensive smelling’ which may indicate infection.
   - **Twice daily:** Fetal heart rate
   - **Daily:** BP and Assess bowel activity

**Note:** Unless otherwise instructed by the medical team night-time observations shall be performed at 2200 and 0600.

**Notify the medical team of any deviation from the normal observations. The frequency of observations shall be adjusted according to the maternal and fetal clinical condition.**
Pathology tests
On admission with PPROM collect:
- Full blood picture (FBP)
- C-reactive protein (CRP) if clinically indicated – while studies have shown a CRP is a poor predictor of chorioamnionitis, studies cannot conclude that it is ineffective in detection of chorioamnionitis or neonatal sepsis.\textsuperscript{7, 8}
- Mid-stream urine (MSU)
- Low vaginal swab (LVS) and rectal swab for culture, including specific Group B Streptococcus testing
- Endocervical swab (ECS) if screening required for Chlamydia\textsuperscript{9}.

Ongoing follow-up pathology tests may be ordered by the medical team if clinically indicated:
1. FBP and/or CRP if there is suspicion of infection
2. LVS as required.

If a woman is unbooked to KEMH ensure a copy of all tests and results done in her pregnancy are available for review. Order booking antenatal bloods and pathology tests as required. See KEMH Clinical Guideline, O&G: Antenatal Care Schedule: Initial visit.

Maternal education
1. Instruct the woman about personal hygiene including changing her sanitary pad 4 hourly or as required. Tampons should not be used.
2. Alert the woman to look out for changes in colour and odour of the PV loss.
3. Encourage frequent leg exercises and instruct the woman to wear graduated compression stockings until full ongoing mobility is assured. Elastic compression stockings assist in the prevention of deep vein thrombosis.\textsuperscript{10}
4. Arrange a Paediatric consultation for gestations under 32 weeks or in pregnancies with other complications. Discuss management of preterm birth e.g. feeding methods, Neonatal Intensive Care Unit (NICU) admissions, risk factors and outcomes.
5. Inform the woman that infections of the baby can be insidious and unpredictable in PPROM. This must be documented in the clinical notes. [New May 2018]
6. Inform the woman about the Health Information Resource Services (HIRS).
7. Advise women that sexual intercourse should be avoided with PPROM.

Referrals
As required offer referral to specialist services:
- Neonatologist- if <32 weeks gestation or other complications such as IUGR
- Aboriginal Liaison Office
- Social worker
- Psychological Medicine
- Physiotherapy
- Parent Education
- Dietician
- Activities Co-ordinator

**Fetal surveillance**

There is no clear evidence on the optimum frequency to perform fetal surveillance tests for women with PPROM. The frequency of tests is adjusted according to the maternal and fetal clinical situation.

<table>
<thead>
<tr>
<th>Fetal Surveillance</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fetal Heart Rate (FHR)</strong></td>
<td>On admission perform an initial period of electronic FHR monitoring &amp; uterine activity monitoring (at ≥ 23 weeks) on admission. Thereafter, FHR twice daily (morning / evening).</td>
</tr>
<tr>
<td><strong>Fetal Activity</strong></td>
<td>4 hourly</td>
</tr>
<tr>
<td><strong>Cardiotocograph Monitoring (CTG)</strong></td>
<td>Weekly if the gestation is more than 30 weeks. Between 23 -25 weeks gestation CTG monitoring should be discussed with the senior registrar or consultant before commencing.</td>
</tr>
</tbody>
</table>
| **Ultrasound**                         | If the fetus is more than 23 weeks gestation:  
- Weekly AFI, BPP, umbilical artery (UA) doppler studies  
- 2 weekly fetal biometry. |

**NOTE:** Report any abnormalities to the Medical Obstetric Team.

**Antibiotics**

Certain antibiotic administration to women with PPROM provides short-term benefits by prolonging pregnancy and reducing risk for infection. It has been shown to reduce some markers of maternal and neonatal morbidity and although it does not equate to a statistically significant reduction in perinatal mortality, research indicates it makes it
possible to reduce risk or mortality.\textsuperscript{12} The demonstrated delay in onset of labour may allow sufficient time for effective prophylactic corticosteroids. \textbf{Avoid} the use of Amoxicillin/Clavulanate as it is associated with neonatal necrotising enterocolitis in the setting of PPROM.\textsuperscript{1, 6, 12}

\textbf{Antibiotic dosage}

Chorioamnionitis is an indication for delivery.\textsuperscript{1}

- Oral \textbf{Erythromycin} 250mg four times a day for 10 days.\textsuperscript{1, 13}
- If the woman has a positive screening result for Group B Streptococcus (GBS) see \textit{Clinical Guideline Group B Streptococcal Disease} for management.

\textbf{Corticosteroids}

Evidence supports the use of a single course of antenatal corticosteroids to accelerate fetal lung maturation in women at risk of preterm birth.\textsuperscript{1, 14} This reduces the risk of neonatal death, respiratory distress syndrome, intraventricular haemorrhage, necrotising enterocolitis, infectious morbidity and the need for respiratory support and neonatal intensive care admission.\textsuperscript{15, 16}

\textbf{Corticosteroid dosage and administration}

- Consider administering corticosteroids between 23 and 36+6 weeks gestation.\textsuperscript{17}
- Between 23 and 23+6 weeks gestation the decision for corticosteroids administration is made following consultation between the obstetric/paediatric medical team and the parents.

See KEMH Clinical Guideline, O&G: \textbf{Corticosteroids: Use of}.

\textbf{Amniocentesis}

Routine amniocentesis should not be performed for women with PPROM.\textsuperscript{2} In selected cases it may be an option for detecting subclinical infection.

\textbf{Amnioinfusion}

There is currently insufficient evidence to support amnioinfusion for PPROM.\textsuperscript{11}

\textbf{Progesterone}

Progesterone should not be commenced in women with PPROM and should be discontinued in women using it prior to PPROM.\textsuperscript{18}

\textbf{Prophylactic Tocolysis}

Tocolysis may be used to allow a course of corticosteroids to be completed and if a women is requiring transfer to a tertiary hospital, but should not routinely be continued after arrival.\textsuperscript{5} Use of tocolysis with PPROM does not significantly improve perinatal outcome.\textsuperscript{2} Furthermore, the risk of chorioamnionitis is increased when tocolytic therapy is used and further research is required to guide its general use.\textsuperscript{1, 19}

See also KEMH Clinical Guidelines: O&M: Complications of Pregnancy: \textbf{Preterm Labour}; including section: LBS QRG Nifedipine Tocolytic Therapy.
Cervical Cerclage

For women with PPROM, the optimal timing for cerclage removal is unclear. A 10 year RCT involving 56 participants showed no statistically significant differences in prolonged latency, infection or neonatal outcomes with cerclage removal or retention, although the possibility of increased infection with cerclage retention was expressed. Decisions regarding removal of cervical cerclage after PPROM should be made in consultation with a Consultant Obstetrician.

Cerclage management

- < 23 weeks gestation – remove cerclage due to increased risk of maternal chorioamnionitis and neonatal mortality from sepsis (however, antibiotics administration may decrease risks).
- Delayed suture removal until labour occurs or when birth is indicated, is associated with an increased risk of maternal/fetal sepsis, therefore is not recommended.
- Between 23 and 34 weeks gestation, if there are no contraindications such as preterm labour, non-reassuring fetal status, or infection, delayed removal of cerclage may be appropriate to allow for completion of antenatal steroids.

Send the cervical suture for culture, once removed.

Magnesium Sulphate

If early preterm birth (<30 weeks) is planned or expected within 24 hours, a magnesium sulphate infusion can be offered (if no contra-indications) to women for potential fetal neuro protection.

See KEMH Clinical Guideline, O&G: Preterm Labour & Birth: Magnesium Sulphate for Neuroprotection of the Fetus, including QRG.

Outpatient management

The safety, cost and women’s views about home management with PPROM has not been established through large studies.

A woman should only be considered for outpatient management if strict criteria are met and following Obstetric Consultant review.

The decision is based on:

- Gestation and presentation.
- Close accessibility to the hospital
- Absence of signs of threatened premature labour.
- No evidence of infection.
- Absence of maternal or fetal risk factors.
- Absence of fetal compromise.
If a woman is deemed suitable for outpatient management she should be counselled to:

- Attend weekly outpatient visits to MFAU to monitor the clinical situation. See KEMH Clinical Guideline, O&M: Complications of Pregnancy: Preterm Prelabour Rupture of Membranes MFAU – QRG and / or
- Attend an antenatal clinic appointment for Obstetric Team Consultant review.
- Monitor her temperature. Instruction and demonstration of temperature taking procedure should be performed and documented prior to discharge. The woman is advised to contact KEMH if she notices any signs of infection or has a temperature of above 37 degrees Celsius.
- Wear sanitary pads not tampons, and return to hospital if she has abnormal smelling vaginal discharge, or abnormal appearance of the vaginal discharge.
- Avoid vaginal intercourse.
- Have showers rather than baths, and avoid swimming.
- Monitor fetal movements and notify the hospital (Maternal Fetal Assessment Unit- MFAU) if fetal movements are decreased.
- Notify and return to the hospital if any signs of threatened preterm labour, vaginal bleeding, or abdominal pain / tenderness.

Future Pregnancy

The KEMH Preterm Birth Prevention Clinic may be considered in future pregnancies for women with PPROM who continue on to have a preterm birth. The clinic aims to reduce the rate of preterm birth, and referral details can be found in The Whole Nine Months: Lasts a Lifetime booklet or website.
Care on the ward: QRG

Avoid digital examination unless birth is believed to be imminent

Maternal Assessment

On admission

Full set of observations*
Vaginal loss, uterine activity / tenderness

4 hourly

Temperature, pulse, vaginal loss, uterine activity / tenderness
If abnormal perform a full set of observations*

Daily

Blood Pressure
Bowel activity
If abnormal perform a full set of observations*

Overnight

Observe and perform observations only as required between 22:00 and 06:00

Fetal Assessment

4 hourly

Fetal Movement
Report any decrease in movements or change in usual pattern of movements

BD

Fetal heart rate
Report any abnormalities promptly

CTG

Gestation > 30 weeks
Once weekly

Immediately if contracting

* Full set of observations includes Blood Pressure, Pulse, Temperature, Respiration, O2 Saturation and conscious state.
Procedures to be considered

- Low vaginal swab – repeat as required
- GBS screening may need to be repeated depending on gestation
- Antibiotics see below for details
- Corticosteroids – consider a single course between 24 and 36+6 weeks gestation
- Maternal laboratory investigations – FBP and CRP if there is suspicion of infection

Education

- PPROM
- Plan of care, tests and procedures
- Caesarean section
- Preterm birth
- Special care Nursery
- Breastfeeding
- Personal hygiene

Activity

- Consider bedrest with toilet and shower privileges for the first 48 hours
- Subsequent activity to be determined by the medical officer

Documentation

- MR 285 Observation sheet
- MR 810 Medication chart
- MR 250 Progress notes
- MR 410 Neonatal History sheet
- Baby notes prepared
- STORK perinatal database record updated

Referrals to be considered

- Neonatologist
- Aboriginal Liaison Officer
- Anaesthetic department
- Dietician
- Parent Educator
- Physiotherapist
- Psychological
PPROM confirmed: Outpatient management: MFAU QRG

Assessment
Women with confirmed PPROM are assessed once a week on an outpatient basis. The Multiple Visit Record Sheet MR 226 is to be used each visit to record the assessment and any test results or treatment given.

Weekly Assessments
1. Arrange weekly assessments on the woman’s Obstetric Team day with Team Consultant.
2. Check and record maternal temperature, pulse and blood pressure, respirations & oxygen saturation. Ensure the woman has been taking her temperature at home daily, and that recordings have been <37°C.
3. Check vaginal loss recording the amount and nature of the loss.
4. Perform abdominal palpation noting:
   - Symphysis fundal height
   - Lie (if appropriate depending on gestation)
   - Presentation (if appropriate depending on gestation)
   - Uterine tenderness, irritability / activity
5. Perform a urinalysis and send an MSU for MC&S where there is proteinuria of >1+
6. Take a LVS, without using a speculum, for MC&S.
7. If the fetus is > 23 weeks gestational age arrange assessment of fetal wellbeing:
   - Ultrasound assessment for amniotic fluid index (AFI) and umbilical artery (UA) Doppler velocities at each visit
   - Fetal biometry every 2 weeks
   - CTG at each visit if / when > 30 weeks gestational age
8. Consider the woman for a single course of corticosteroid if the gestational age is between 23 and 36+6 weeks\(^7\). At gestations between 23-23+6 days, the decision to give steroids should take into account the parent’s wishes for the management of the neonate.
9. Ensure the woman has received or has been commenced on a ten-day course of erythromycin 250mg QID. Obtain and review any results from the previous visit if these have not already been documented.
10. Provide the woman with information of management for PPROM after discharge. See section ‘PPROM: Medical and Midwifery Management’ in this document for detailed advice and care.
Outpatient management of confirmed PPROM: Flow chart

Women presents to MFAU for weekly review and Assessment on her Obstetric Team day.

Midwife / Resident performs the assessment as outlined in the QRG.

Midwife / Resident reviews all maternal and fetal Assessments and test results.

Are all the assessments and results normal? (see yellow box)

Yes

Inform the Obstetric Team of results and arrange review in the ANC or in MFAU as appropriate.

No

Inform Obstetric Registrar or above and arrange review.

Abnormal / Reportable Results
- Maternal temperature ≥ 37°C
- Maternal pulse ≥ 100 bpm
- Positive LVS or MSU
- Vaginal loss which is offensive and / not clear
- WCC > 17 or 10^9/l or a WWC that is rising
- CRP >10mg/l
- AFI (MVP <2cms)
- Fetal biometry < 10th centile
- UA doppler > 95th centile
- Non-reactive CTGx2
- Fetal tachycardia

Follow-up Management
Continue weekly assessment in The Maternal Fetal Assessment Unit and/or ANC with Team Consultant review.


### Related WNHS policies, procedures and guidelines

Obstetrics & Gynaecology guideline: Emergency Procedures: [Cord Prolapse](#)

### Useful resources

KEMH patient information book: [Pregnancy, Birth and your Baby](#)

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### NSQHS Standards (v2) applicable:
1 Governance, 4 Medication Safety, 6 Communicating, 8 Recognising & Responding to Acute Deterioration

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