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EHC Clinical Practice Guidelines

Prevention And Management Of Preterm Labor

The Egyptian Health Council
2026

Prevention And Management Of Preterm Labor



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Acknowledgements

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Abbreviations

- **ACS:** Antenatal Corticosteroids
- **ACOG:** American College of Obstetricians and Gynecologists
- **BMI:** Body mass index
- **CL:** Cervical length
- **EHC:** Egyptian Health Council
- **fFN:** Fetal fibronectin
- **GA:** Gestational age
- **GBS:** Group B-Streptococci
- **GDG:** Guidelines Development Group
- **GPS:** Good Practice Statement
- **GRADE:** Grading of Recommendations Assessment, Development and Evaluation
- **HQE:** High Quality Evidence
- **LQE:** Low Quality Evidence
- **MQE:** Moderate Quality Evidence
- **NICE:** National Institute for Health and Care Excellence
- **PPROM:** Preterm premature rupture of membranes
- **PTL:** Preterm birth
- **TVUS:** Transvaginal ultrasound
- **VLQE:** Very Low Quality Evidence
- **WHO:** World Health Organization

Glossary

The following definitions are used in this guideline:

- **Preterm Birth (PTL):** Any birth occurring after viability but before 37 completed weeks of gestation (less than 259 days).
- **Spontaneous Preterm Labor:** The presence of regular, painful uterine contractions occurring before 37 weeks of gestation, accompanied by progressive cervical effacement and/or dilatation.
- **Threatened Preterm Labor:** Regular uterine contractions before 37 weeks of gestation with or without cervical changes, where progressive Labor has not yet been established.
- **Short Cervix:** A sonographic measurement of cervical length of less than 25 mm via transvaginal scan (TVUS) obtained with an empty bladder.
- **Progesterone Therapy:** Prophylactic administration of vaginal or oral progesterone to reduce the risk of preterm birth in high-risk women.
- **Cervical Cerclage:** A surgical procedure involving the placement of a suture around the cervix to provide mechanical support, typically indicated for cervical insufficiency.
- **Tocolysis:** The pharmacological inhibition of uterine contractions, primarily used to delay delivery for up to 48 hours to allow for the administration of corticosteroids and/or in-utero transfer.

Executive Summary

Preterm birth remains a leading cause of neonatal morbidity and mortality globally and within Egypt. The Egyptian Health Council (EHC) has developed these evidence-based recommendations to standardize best practices for the prediction, prevention, and therapeutic management of preterm Labor (PTL).

List of Recommendations

Recommendation	Strength
1. Risk Assessment for Preterm Labor	
1.1. Assess risk factors preconception and early pregnancy with a comprehensive review of all previous pregnancies because the most important historical risk factor is prior spontaneous PTL. **1.2.** Risk factors, that should be thought of, include maternal characteristics and factors related to medical or obstetric conditions **1.2.1. Maternal Characteristics:** ○ Age of woman: Younger than 20 years and older than 40 years ○ Smoking ○ Women residing in rural and remote areas ○ Ethnicity: increased among African women compared to Caucasian or Asian women ○ Late or no antenatal care ○ Lack of continuity of care ○ Low socio-economic status ○ High or low body mass index (BMI) **1.2.2. Medical or Obstetric Conditions** ○ Multiple birth: 66% of twins and 98.2% of all other multiples (triplets and higher order) ○ Previous PTL: 30% of women who give birth prematurely in a prior pregnancy will give birth before 37 weeks in a subsequent pregnancy ○ Genital tract infections: The risk of PTL doubles with Bacterial vaginosis ○ Urinary tract infections ○ Vaginal bleeding ○ Assisted reproduction associated with two-fold risk of PTL ○ Preterm prelabor rupture of membranes (PPROM) ○ Surgical procedures involving the cervix ○ Uterine anomalies ○ Polyhydramnios/oligohydramnios ○ Chronic medical conditions ○ Acute medical conditions (e.g. preeclampsia, antepartum hemorrhage)	Strong

2. Risk Reduction	
2.1 Assessment & Counseling **2.1.1** Assess Risk Factors Preconception **2.1.2** Smoking cessation interventions reduce PTL rate by 18% **2.1.3** Optimization of control of underlying chronic diseases reduces risk **2.1.1** Lifestyle modifications (e.g. balanced diet, activity limitations, and stress management	GPS
2.2 Bacterial Vaginosis (BV) **2.2.1** Women with previous PTL may benefit from routine screening and treatment of BV **2.2.2** The following is suggested to treat bacterial vaginosis after the first trimester of pregnancy. All regimens have equal effectiveness: i. Local vaginal application of 500–1000 mg metronidazole suppository for 7 days. ii. Oral clindamycin 2 × 300 mg/day for 7 days i. Intravaginal application of 5 g of 2 % clindamycin vaginal cream for 7 days	GPS
2.3 Urinary Tract Infections **2.3.1** Screen and recommend treatment for urinary tract infections (asymptomatic bacteriuria, cystitis, pyelonephritis) **2.3.2** Empirical antimicrobial treatments for asymptomatic bacteriuria will be required using an antibiotic regimen with either Nitrofurantoin (100 mg three times daily), amoxycillin (500 mg three times daily) for a week or Fosfomycin 3 grams orally as a single dose with 3 glasses of water. Treatment should be re-evaluated once culture and sensitivity results are available.	Strong
2.4 Cervical Length Measurement **2.4.1** Recommend routine cervical length measurement to women during the mid-trimester morphology (18–20 weeks) ultrasound scan with the cervical length documented in medical records **2.4.2** Consider serial transvaginal cervical length (TVCL) measurement for high-risk women with prior PTL (From 14–24 weeks gestation, serial TVCL every two weeks may be appropriate)	GPS
2.5 Progesterone Therapy **2.5.1** For singleton pregnancies recommend vaginal progesterone 200 mg by night from 16–36 weeks gestation for women with: o An incidentally diagnosed shortened cervix (less than or equal to 25 mm) on TVCL between 16–24 weeks, OR o A prior spontaneous PTL or mid-trimester miscarriage between 20–36 weeks+6days (with or without preterm pre-labor rupture of membranes)	Strong

3. Cervical Cerclage for Risk Reduction	
3.1 Cervical cerclage may be indicated (individualized decisions) for women with history of either: • One or more prior spontaneous PTL and/or second-trimester loss related to painless cervical dilation and in the absence of labor or abruptio placentae. • Prior cerclage due to painless cervical dilation in second trimester • TVCL less than 25 mm before 24 weeks if: o Prior spontaneous PTL (or a PPROM) before 34 weeks' gestation and o Current singleton pregnancy **3.2** There is limited data about the effectiveness of rescue cerclage particularly beyond 24 weeks of gestation therefore individualize decisions should be taken case by case. **3.3** Multiple dilation and evacuations or cervical surgery (e.g. cone biopsy, large loop excision of the transformation zone, laser ablation, diathermy) or other abnormalities (e.g. Mullerian anomaly) are not themselves an indication for cerclage **3.4** Cerclage is Not recommended for women with: • Funneling of the cervix in the absence of cervical shortening to 25 mm or less • An incidentally identified short cervix without a history of spontaneous PTL or second trimester loss. • Multiple pregnancy (and may be detrimental) **3.5** If prophylactic cervical cerclage is used, ensure that a plan is in place for removal of the suture.	Conditional
4. Diagnosis of PTL in Women with Intact Membranes	
4.1 Identifying and treating women with symptoms of preterm labor, provides the opportunity to utilize interventions to minimize the impact of PTL. Only around 10% of women who present with symptoms of preterm labor (contractions) will deliver preterm **In a patient presenting with symptoms of suspected preterm labor:** **4.2.** Review history: Medical, Surgical, Obstetric, Psychosocial and Lifestyle (Refer to section 1. Risk Assessment for Preterm Labor) **4.3.** Assess Symptoms of uterine contractions; pelvic pressure, lower abdominal cramping, lower back pain, vaginal loss (mucous, blood or fluid) and/or regular uterine activity. **4.4.** Perform Physical examination • Vital signs • Abdominal palpation to assess uterine tone, contractions, fetal size and presentation • Sterile speculum examination to: o Confirm/exclude rupture of membranes o Visualize cervix/membranes o Assess liquor in case of PPROM (e.g. clear, meconium stained, bloody)	GPS GPS

• Sterile digital vaginal examination
  ○ Assess cervical dilatation and effacement by sterile digital vaginal examination unless confirmed by speculum examination or contraindicated due to ruptured membranes or suspected placenta previa
• Fetal surveillance
  ○ Monitor and document Fetal heart rate (FHR by clinical or electronic monitoring if available)	

5. Indications Of Admission in Women with Intact Membranes	
5.1. Admit the patient If: • Gestational age less than 30 weeks • Membranes ruptured • A cervical cerclage has been performed • Cervical dilation (painless or painful) • Cervical change over 2–4 hours • Contractions are regular and painful • Further observations or investigations are indicated • TVCL changes and/or less than 25 mm (if available) • Other maternal or fetal concerns **5.2.** If the clinical assessment suggests that the woman is in suspected preterm labor and she is 29+6 weeks pregnant or less, advise treatment as diagnosed preterm labor as described in the sections on tocolysis and maternal corticosteroids. **5.3.** If the clinical assessment suggests that the woman is in suspected preterm labor and she is 30+0 weeks pregnant or more, consider transvaginal ultrasound measurement of cervical length as a diagnostic test to determine likelihood of birth within 48 hours.	Strong
6. Criteria For Discharge in Women with Intact Membranes	
6.1. A woman with suspected preterm labor may be discharged home if all the following criteria are fulfilled: • Maternal vital signs within normal parameters • Normal fetal heart rate (FHR) and/or CTG relevant to gestational age • No signs of chorioamnionitis • Contractions infrequent/irregular • No/minimal cervical change with cervical length >25 mm (if measured) **6.2.** Women should be informed about: • Signs and symptoms of preterm Labor • Risk reduction measures appropriate to the circumstances • Follow-up as indicated	GPS
7. Management Of Women With Suspected PTL And PPROM	
7.1. Admission for reassessment and/or therapeutic interventions	

7.1.1. offer admission for reassessment and/or therapeutic interventions for women with suspected PTL and diagnosed PPROM	GPS
7.2. Antenatal prophylactic antibiotics for women with PPROM	
7.2.1. Offer women with PPROM oral erythromycin 250 mg 4 times a day for a maximum of 10 days or until the woman is in established labor (whichever is sooner).	Strong
7.2.2. For women with PPROM who cannot tolerate erythromycin or in whom erythromycin is contraindicated, or if not available consider one of the oral penicillins for a maximum of 10 days or until the woman is in established labor (whichever is sooner).	Strong
7.2.3. Do not offer women with PPROM co-amoxiclav as prophylaxis for intrauterine infection.	Strong
7.3. Identifying infection in women with PPROM	
7.3.1. Use a combination of clinical assessment and tests (C-reactive protein, white blood cell count and measurement of fetal heart rate) to diagnose intrauterine infection in women with PPROM every 48 hours. Do Not use any of these tests in isolation to confirm or exclude intrauterine infection**.**	GPS
7.3.2. If the results of the clinical assessment or any of the tests are not consistent with each other, continue to observe the woman and consider repeating the tests.	GPS
7.4. Chorioamnionitis	
7.4.1. Suspect Intra-amniotic infection in presence of: • Maternal fever greater than 38 °C (present in 95–100% of cases) in presence of 2 or more of the following: o Maternal tachycardia greater than 100 beats per minute (bpm) (present in 50–80% of cases) o Fetal tachycardia greater than 160 bpm (present in 40–70% of cases) o Uterine tenderness o Offensive smelling vaginal discharge o Increased white cell count (greater than $15x10^9/L$) **Management of Preterm labor with PPROM and suspected infection** **7.4.2.** Do not inhibit labor, but consider hastening birth under broad spectrum intravenous antibiotic cover **7.4.3.** Suspect chorioamnionitis in women with PPROM if Labor ensues **7.4.4.** The optimal antibiotic suggested regimen to cover Gram negative and positive and anaerobic microorganisms is combination of: • Ampicillin (or amoxycillin) 2 g IV every 6 hours AFTER sensitivity testing, and, • Tobramycin 5 mg/kg IV daily (preferred) or gentamicin 1.5-2mg/kg/day in 3 divided doses (every 8 hours) and, • Metronidazole 500 mg IV every 12 hours (rectal may be considered if IV is not available).	Strong

7.4.4. Continue oral ampicillin and metronidazole treatment after birth for 7 – 10 days, plus IV tobramycin or IM gentamycin for 5 days maximum.	

8. Management Of Diagnosed Preterm Labor with Intact Membranes

8.1. General Rules

8.1.1. Tocolysis and steroids are the main strategies to manage preterm labor. **8.1.2.** Consider in-utero transfer to a center with higher neonatal service capabilities. **8.1.3.** Discuss with the women and family the conditions of transfer including limited resuscitation if birth occurs in the route. **8.1.4.** Adequate assessment of the women should be done before transfer. **8.1.5.** Transfer decisions should be coordinated between obstetric and neonatology teams on both sides.	**GPS**

8.2. Tocolysis

8.2.1. Tocolysis is recommended to give time for a course of corticosteroid therapy or to allow in-utero transfer to an obstetric center with higher-level neonatal care **8.2.2.** Criteria for tocolysis: 1. Woman is in suspected or diagnosed preterm labor with intact membranes 2. No other clinical features that may suggest that stopping labor is contraindicated 3. Gestational age at presentation < 37 weeks **8.2.3.** It is NOT recommended to use tocolysis for > 48 hours **8.2.4. Nifedipine is the recommended tocolytic of choice** **8.2.5. Nifedipine is administered according to this protocol:** • Nifedipine 20 mg oral (2 of 10 mg capsules) • If contractions persist after 30 minutes repeat Nifedipine 20 mg oral • If contractions persist after a further 30 minutes repeat Nifedipine 20 mg oral • If BP is stable, give Nifedipine 20 mg oral every 6 hours for 48 hours • Further maintenance therapy is ineffective • Maximum dose is 160 mg/day • Do not use sustained release formulation or sublingual route. **8.2.6. On Nifedipine, observe:** BP, pulse and respiratory rate every thirty minutes for the first hour, then hourly for four hours (Review frequency in accordance with clinical circumstances), and measure temperature every four hours **8.2.7.** Nifedipine is contraindicated in: • Maternal hypotension • Maternal cardiac disease (preload-dependent cardiac lesions) • Previous adverse reaction to calcium channel blockers. • Concomitant use with Magnesium Sulfate may increase effects of nifedipine and the risk of hypotension so use cautiously with Magnesium Sulfate	Strong

8.2.8. If there are contraindications to Nifedipine, use an alternative tocolytic as indomethacin **8.2.9. Inhibitors of prostaglandin synthesis** (Indomethacin) may be used with the following conditions fulfilled: • There is failure to achieve tocolysis with Nifedipine or Nifedipine is contraindicated • Only before 32 weeks of gestation (indomethacin is a potential option for use in conjunction with magnesium sulfate). • Maximum duration is 48 hours to avoid risks for the fetus and neonate • Ensuring close monitoring of fetal wellbeing **8.2.10. Betamimetics are not recommended for tocolysis** **8.2.11.** Magnesium Sulfate is not recommended for the sole purpose of tocolysis	
8.3. Corticosteroids	
8.3.1. Corticosteroids are administered according to ONE of the following protocols: • **Betamethasone: two 12-mg** doses of betamethasone I.M. **24 hours** apart **OR** • **Dexamethasone**: **four 6-mg** doses of dexamethasone I.M. at **12 hours** intervals **Repeat Dose of Corticosteroids** **8.3.2.** Do not routinely administer scheduled serial or weekly courses of antenatal corticosteroids **8.3.3.** Consider one repeat course of antenatal corticosteroids for a woman at less than **34+0 weeks of gestation** who received an initial course **at least seven days** previously and who, following **renewed clinical assessment, has a high likelihood of preterm birth within the next seven days**. **8.3.4.** In women with diabetes mellitus, blood sugar levels should be monitored during the intake of corticosteroids.	Strong Conditional Conditional
8.4. Antibiotics	
8.4.1. Routine administration of prophylactic antibiotics to women in threatened preterm labor with intact membranes and without evidence of infection is not recommended **8.4.2.** When preterm labor starts, give intrapartum antibiotic prophylaxis for prevention of early onset Group B-streptococcal disease **irrespective of GBS status or membrane status:** • Benzylpenicillin (Penicillin G): After a sensitivity test; give 3 gm (5 million units) IV be given as soon as possible after the onset of labor (the first dose should be given at least 4 hours prior to delivery of baby) and then 1.5 gm (2.5- 3 million units) every 4 hours. • Alternatives (any of): ○ Amoxicillin 2 gm IV initial dose then 1 gm every 4 hours or 2 gm every 6 hours	GPS

○ Ampicillin 2 gm IV initial dose then 1 gm every 4 hours or 2 gm every 6 hours ○ Cefuroxime 1.5 g loading dose then 750 mg every 8 hours ○ Cephazolin 2gm IV initial dose then, 1 gm every 8 hours **until delivery** • If allergic to penicillin ➔ either of: ○ Vancomycin IV 1 gm every 12 hours, or ○ Clindamycin 900 mg every 8 hours	
8.5. Magnesium Sulfate for Neuroprotection	
8.5.1. Offer intravenous magnesium sulfate for neuroprotection of the baby to women between **26+0 and 33+6 weeks** of pregnancy who are in established preterm labor or having a planned preterm birth within 24 hours **8.5.2.** When birth is planned, commence magnesium sulfate administration 4-6 hours prior to birth for best effect. **8.5.3.** If birth is expected to occur within four hours, commence MgSO4 immediately, as there may still be benefit from administration. **8.5.4.** In situations where urgent birth is necessary, do not delay birth to administer MgSO4 **8.5.5.** Give 4 gm intravenous bolus of magnesium sulfate over 15 minutes, followed by an intravenous infusion of 1 gm per hour until the birth or for 24 hours (whichever is sooner). **8.5.6.** If birth does not occur after giving MgSO4 and PTL (less than 30 weeks' gestation) again appears imminent (planned or expected within 24 hours), a repeat dose of MgSO4 may be considered.	
8.6. Observations and Fetal Surveillance Intrapartum	
8.6.1. Use of intermittent auscultation is recommended as there is absence of evidence that using cardiotocography improves the outcomes of preterm labor compared with intermittent auscultation.	GPS
8.7. Mode of Preterm Birth	
8.7.1. Consider that there is insufficient high-quality evidence about whether mode of birth affects neonatal morbidity and outcomes. **8.7.2.** For Singleton Vertex presentation: Vaginal birth is recommended unless there are specific contraindications to vaginal birth or maternal conditions necessitating CS **8.7.3.** For Breech Presentation: ○ ≥ 26+0 weeks: The evidence regarding optimal mode of birth for preterm breech is conflicting and unclear due to a lack of high-quality studies - Base decisions on individual circumstances and maternal preferences - CS is not generally recommended where vaginal birth is imminent.	Strong

8.7.4. Consider that Preterm CS is usually technically more difficult to perform and is not without risks to the baby. **8.7.5.** Timing of cord clamping for preterm babies (born vaginally or by caesarean section): • If the baby and mother are stable: Wait at least 30 seconds, but no longer than 3 minutes, before clamping the cord. • If a preterm baby needs to be moved away from the mother for resuscitation, or there is significant maternal bleeding: consider milking the cord and clamp the cord as soon as possible. • Position the baby at or below the level of the placenta before clamping the cord.	GPS

Introduction

The management of preterm labor is a critical pillar of obstetric and neonatal care. Prematurity remains the **leading cause of death** among children under five years of age worldwide, accounting for approximately **18% of all under-five deaths** and up to **35% of all neonatal deaths** [1] (within the first 28 days of life).

Beyond mortality, survivors of preterm birth face a significantly higher risk of long-term morbidities, including:

- **Respiratory Distress Syndrome (RDS)** and chronic lung disease. [2,3]
- **Neurodevelopmental disabilities**, such as cerebral palsy and learning impairments. [4]
- **Sensory deficits**, including visual and hearing impairment.
- **Long-term metabolic issues** and cardiovascular risks in adulthood. [1]

Standardizing care through evidence-based guidelines is essential to optimizing the use of interventions—such as antenatal corticosteroids, magnesium sulfate for neuroprotection, and tocolytics—to improve both immediate survival and long-term quality of life. [5,3]

1. Definitions

Preterm labor is defined as the presence of uterine contractions of sufficient frequency and intensity to effect progressive effacement and dilation of the cervix prior to 37 completed weeks of gestation. According to the **World Health Organization (WHO)** and the **ADAPTE methodology** [3] guidelines, preterm birth is further classified into subcategories based on gestational age:

- **Late Preterm**. Gestational age between 32 and 36 completed weeks.
- **Moderately Preterm**: Gestational age between 28 and 32 completed weeks.
- **Very Preterm**. Gestational age between 28 and less than 32 weeks.
- **Extremely Preterm**. Gestational age before 28 weeks.

2. Clinical presentations include:

- **Predicted PTL** (asymptomatic with high-risk factors).
- **Suspected PTL** (symptoms present but labor not established)
- **Established PTL** (cervical dilation > 4 cm), and
- **Preterm Pre-labor Rupture of Membranes (PPROM)** (rupture of membranes before 37 weeks' gestation)

3. Global Incidence

Globally, preterm birth is a major public health challenge. According to the latest **WHO and Lancet** estimates (2023), approximately **13.4 million babies** were born preterm in 2020. This represents a global incidence of roughly **1 in 10 births (10%).** While the burden is highest in low- and middle-income countries, particularly in Sub-Saharan Africa and Southern Asia—preterm birth rates are rising or stagnating in many high-income regions due to factors like increased maternal age, multiple pregnancies from assisted reproduction, and iatrogenic (medically indicated) early deliveries. [6]

4. Incidence in Egypt

In Egypt, the incidence of preterm birth reflects the broader regional trends of the Middle East and North Africa.

- **Prevalence**: Recent data estimates the preterm birth rate in Egypt to be between **7% and 9%**. While historical data from 2010 placed the rate at approximately **7.3%** (WHO), more recent clinical surveillance in tertiary centers suggests these numbers may be higher due to improved reporting and the high prevalence of risk factors [6,7] .
- **C-Section Context**: A significant factor in Egypt's preterm delivery landscape is the high rate of **Cesarean sections**, which was reported at roughly **80% of total births in 2025** by the Ministry of Health. This high surgical intervention rate contributes to a rise in **iatrogenic preterm births**, where labor is induced or a C-section is performed before 37 weeks for maternal or fetal indications [8].

Scope and Purpose

This guideline focuses on improving maternal and neonatal outcomes associated with preterm birth and specifically includes both the care of pregnant women at imminent risk of preterm birth (birth < 37 weeks of gestation). Women at imminent risk of preterm birth were defined as pregnant women who are very likely to deliver a preterm baby either as a result of onset of spontaneous preterm Labor, preterm Prelabor rupture of membranes or elective (or indicated) preterm birth. The guideline scope does not include preventive care for non-pregnant or pregnant women with previous history of preterm birth or other known risk factors of preterm birth.

The objectives of this guideline are:

- To provide guidance for the proper prevention and management of preterm labor
- To optimize outcomes for patients who are at risk of or developed preterm labor

Target Audience

This guideline targets; healthcare professionals working as Obstetricians & Gynecologists, Anesthetists, ICU physicians, Nurses, policy makers, hospital managers, and other stakeholders to apply the best practice and afford the most appropriate tools for women at risk of or having Preterm Labor

Methodology

A comprehensive search for guidelines was done to identify the most relevant ones to consider for adaptation. The inclusion/exclusion criteria that were followed in the search and retrieval of guidelines to be adapted are:
We select guidelines only if they are:

- Evidence-based guidelines
- National and/or international guidelines
- Guidelines published from 2015 to 2025
- Peer reviewed publications
- Guidelines written in English language
- We Exclude guidelines that are:
    - Written by a single author not on behalf of an organization as guideline to be valid and comprehensive ideally requires multidisciplinary input.
    - Published without references as the panel needs to know whether literature review was conducted and whether the current evidence was used in the preparation of the recommendations.

The following characteristics of the retrieved guidelines were summarized in a table:

- Developing organization/authors
- Date of publication, posting, and release
- Country/language of publication
- Dates of the search used by the source guideline developers

All retrieved Guidelines were screened and appraised using AGREE II instrument (www.agreetrust.org) by at least three members. The panel decided on a cut-off point or ranked the guidelines (any guideline scoring above 50% on the rigor dimension was retained).

Guidelines used in the adaptation process:

1. Queensland Clinical Guidelines. Preterm Labor and birth. Guideline No.MN20.6-V11-R25. Queensland Health. June 2025. Available from: http://www.health.qld.gov.au/qcg.[9]
2. WHO recommendations for care of the preterm or low birth weight infant. Geneva: World Health Organization; 2022. Licence: CC BY-NC-SA 3.0 IGO. Available from: http://www.who.int. [10]
3. National Institute for Health and Care Excellence (NICE) (2015, last updated June 2022) Preterm labour and birth. NICE guideline NG25. London: National Institute for Health and Care Excellence [5]
4. American College of Obstetricians and Gynecologists. Practice Bulletin No. 127: Management of preterm labor. Obstet Gynecol. 2012;119(6):1308-1317. [11]

Evidence assessment

According to WHO Handbook for Guidelines, we used the GRADE (Grading of Recommendations, Assessment, Development and Evaluation) approach to assess the quality of a body of evidence, develop and report recommendations. GRADE methods are used by WHO because these represent internationally agreed standards for making transparent recommendations. Detailed GRADE information is available on the following sites:

- GRADE working group: http://www.gradeworkingroup.org
- GRADE online training modules: http://cebgrade.mcmaster.ca/
- GRADE profile software: http://ims.cochrane.org/revman/gradepro

Table 1: Quality and Significance of the four levels of evidence in GRADE:

Quality	Definition	Implications
High	The guideline development group is very confident that the true effect lies close to that of the estimate of the effect	Further research is very unlikely to change confidence in the estimate of effect
Moderate	The guideline development group is moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different	Further research is likely to have an important impact on confidence in the estimate of effect and may change the estimate
Low	Confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the true effect	Further research is very likely to have an important impact on confidence in the estimate of effect and is unlikely to change the estimate
Very low	The group has very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of the effect	Any estimate of effect is very uncertain

Table 2: Factors that determine How to upgrade or downgrade the quality of evidence

Downgrade in presence of	Upgrade in presence of
Study limitations - 1 Serious limitations - 2 Very serious limitations	**Dose-response gradient** + 1 Evidence of a dose-response gradient
Consistency - 1 Important inconsistency	**Direction of plausible bias** + 1 All plausible confounders would have reduced the effect
Directness - 1 Some uncertainty - 2 Major uncertainty	**Magnitude of the effect** + 1 Strong, no plausible confounders, consistent and direct evidence + 2 Very strong, no major threats to validity and direct evidence
Precision - 1 Imprecise data	
Reporting bias - 1 High probability of reporting bias	

The strength of recommendations

The strength of a recommendation communicates the importance of adherence to the recommendation.

STRONGs: The GDG found that the desirable effects of adherence to the recommendation outweigh the undesirable effects. This means that in most situations the recommendation can be adopted.

CONDITIONALs: This means that the GDG found that there is:

- Greater uncertainty about the strength of evidence, or
- The recommendation may account for a greater variety in patient values and preferences, or
- The resource use makes the intervention suitable for some, but not for other locations.

CONDITIONALs **are still the best available evidence to date and** it can be adopted if it meets the conditions mentioned with it.

Good Practice Statement: Statements based on opinion of respected authorities, e.g. the RCOG, ACOG, and the guidelines development group.

Recommendations

1. Risk Assessment for Preterm Labor

1.1. Assess risk factors preconception and early pregnancy with a comprehensive review of all previous pregnancies because the most important historical risk factor is prior spontaneous PTL.
Remark: The cause of spontaneous preterm labor remains unidentified in up to half of all cases.
The cause of spontaneous preterm labor remains unidentified in up to half of all cases and although many factors have been associated with an increased risk of spontaneous PTL, there is a relative paucity of high-level research. [12,13]
[HQE, STRONG]

1.2. Risk factors, that should be thought of, include maternal characteristics and factors related to medical or obstetric conditions

1.2.1. Maternal Characteristics:

- Age of woman: Younger than 20 years and older than 40 years[12,13]
- Smoking
- Women residing in rural and remote areas[13]
- Ethnicity: increased among African women compared to Caucasian or Asian women[14-16]
- Late or no antenatal care
- Lack of continuity of care
- Low socio-economic status
- High or low body mass index (BMI)

1.2.2 Medical or Obstetric Conditions

- Multiple birth: 66% of twins and 98.2% of all other multiples (triplets and higher order) [13]
- Previous PTL:
  Rational: **Approximately 30% of women who give birth between 20 and 31 weeks in a prior pregnancy will give birth before 37 weeks in a subsequent pregnancy and 10% of these will occur at a similar gestational age** [11] . **Number of prior PTL :15% recurrence risk with single prior PTL, 32% recurrence risk with two prior PTL** [17]
- Genital tract infections: The risk of PTL doubles with Bacterial vaginosis[18,19]
- Urinary tract infections[20]
- Vaginal bleeding[20]
- Assisted reproduction associated with two-fold risk of PTL[[20]
- Preterm prelabor rupture of membranes (PPROM)
- Surgical procedures involving the cervix[5]
- Uterine anomalies[20]
- Polyhydramnios/oligohydramnios
- Chronic medical conditions
- Acute medical conditions (e.g. preeclampsia, antepartum hemorrhage)

2. Risk Reduction

2.1 Assessment & Counseling (MQE, GPS)

2.1.1 Assess Risk Factors Preconception [14,15]

2.1.2 Smoking cessation interventions reduce PTL rate by 18%[19]

2.1.3 Optimization of control of underlying chronic diseases reduces risk[21]

2.1.4 Lifestyle modifications (e.g. balanced diet, activity limitations, and stress management

2.2 Bacterial Vaginosis (MQE, GPS)

2.2.1 Women with previous PTL may benefit from routine screening and treatment of BV[19]

2.2.2 The following is suggested to treat bacterial vaginosis after the first trimester of pregnancy. All regimens have equal effectiveness: [22,23]

iii. Local vaginal application of 500–1000 mg metronidazole suppository for 7 days.

iv. Oral clindamycin 2 × 300 mg/day for 7 days

v. Intravaginal application of 5 g of 2 % clindamycin vaginal cream for 7 days

2.3 Urinary Tract Infections (HQE, STRONG)

2.3.1 Screen and recommend treatment for urinary tract infections (asymptomatic bacteriuria, cystitis, pyelonephritis)

2.3.2 Empirical antimicrobial treatments for asymptomatic bacteriuria will be required using an antibiotic regimen with either Nitrofurantoin (100 mg three times daily), amoxycillin (500 mg three times daily) for a week or Fosfomycin 3 grams orally as a single dose with 3 glasses of water. Treatment should be re-evaluated once culture and sensitivity results are available. [13,24]

2.4 Cervical Length Measurement (MQE, GPS)

2.4.1 Recommend routine cervical length measurement to women during the mid-trimester morphology (18–20 weeks) ultrasound scan with the cervical length documented in medical records[25-27]

2.4.2 Consider serial transvaginal cervical length (TVCL) measurement for high-risk women with prior PTL (From 14–24 weeks gestation, serial TVCL every two weeks may be appropriate) [28,29].

2.5 Progesterone Therapy (MQE, STRONG)

2.5.1 For singleton pregnancies recommend vaginal progesterone 200 mg by night from 16–36 weeks gestation for women with: [26].

- An incidentally diagnosed shortened cervix (less than or equal to 25 mm) on TVCL between 16–24 weeks, OR[30].
- A prior spontaneous PTL or mid-trimester miscarriage between 20–36 weeks+6days (with or without preterm prelabor rupture of membranes) [31].

2.1. Cervical Cerclage For Risk Reduction

3.1 Cervical cerclage may be indicated (individualize decisions) for women with history of either: **(MQE, CONDITIONAL)**

- One or more prior spontaneous PTL and/or second-trimester loss related to painless cervical dilation and in the absence of labor or abruptio placentae, or[32].
- Prior cerclage due to painless cervical dilation in second trimester[32].
- TVCL less than 25 mm before 24 weeks if: [5].
  - Prior spontaneous PTL (or a PPROM) before 34 weeks gestation and
  - Current singleton pregnancy

3.2 There is limited data about the effectiveness of rescue cerclage particularly beyond 24 weeks of gestation therefore individualize decisions

3.3 Multiple dilation and evacuations or cervical surgery (e.g. cone biopsy, large loop excision of the transformation zone, laser ablation, diathermy) or other abnormalities (e.g. Mullerian anomaly) are not themselves an indication for cerclage

3.4 Cerclage is Not recommended for women with:

- Funneling of the cervix in the absence of cervical shortening to 25 mm or less[33].
- An incidentally identified short cervix without a history of spontaneous PTL or second trimester loss [5].
- Multiple pregnancy (and may be detrimental) [34].

3.5 If prophylactic cervical cerclage is used, ensure that a plan is in place for removal of the suture. [5].

2.2. Diagnosis of PTL in Women with Intact Membranes

4.1 Identifying and treating women with symptoms of preterm labor, provides the opportunity to utilize interventions to minimize the impact of PTL. Only around 10% of women who present with symptoms of preterm labor (contractions) will deliver preterm[35] **(MQE, GPS)**

In a patient presenting with symptoms of suspected preterm labor:

4.2. Review history: Medical, Surgical, Obstetric, Psychosocial and Lifestyle (Refer to section 1. Risk Assessment for Preterm Labor)

4.3. Assess Symptoms of uterine contractions: in a single phrase[36].

- Pelvic pressure
- Lower abdominal cramping
- Lower back pain
- Vaginal loss (mucous, blood or fluid)
- Regular uterine activity

4.4. Perform Physical examination

- Vital signs
- Abdominal palpation to assess uterine tone, contractions, fetal size and presentation

- Sterile speculum examination to:
  - Confirm/exclude rupture of membranes
  - Visualize cervix/membranes
  - Assess liquor in case of PPROM (e.g. clear, meconium stained, bloody)
- Sterile digital vaginal examination
  - Assess cervical dilatation and effacement by sterile digital vaginal examination unless confirmed by speculum examination or contraindicated due to ruptured membranes or suspected placenta previa
- Fetal surveillance
  - Monitor and document Fetal heart rate (FHR by clinical or electronic monitoring if available)

5. Indications Of Admission in Women with Intact Membranes

5.1 Admit the patient If: **(HQE, STRONG)**

- Gestational age less than 30 weeks
- Membranes ruptured
- A cervical cerclage has been performed
- Cervical dilation (painless or painful)
- Cervical change over 2–4 hours
- Contractions are regular and painful
- Further observation or investigation indicated
- TVCL changes and/or less than 25 mm (if available)
- Other maternal or fetal concerns

5.2 If the clinical assessment suggests that the woman is in suspected preterm labor and she is 29+6 weeks pregnant or less, advise treatment as diagnosed preterm labor as described in the sections on tocolysis and maternal corticosteroids.

5.3 If the clinical assessment suggests that the woman is in suspected preterm labor and she is 30+0 weeks pregnant or more, consider transvaginal ultrasound measurement of cervical length as a diagnostic test to determine likelihood of birth within 48 hours.

6. Criteria For Discharge in Women With Intact Membranes

6.1. A woman with suspected preterm labor may be discharged home If all the following criteria are fulfilled: [5] **(HQE, GPS)**

- Maternal vital signs within normal parameters
- Normal fetal heart rate (FHR) and/or CTG relevant to gestational age
- No signs of chorioamnionitis
- Contractions infrequent/irregular
- No/minimal cervical change with cervical length >25 mm (if measured)

6.2. Women should be informed about:

- Signs and symptoms of preterm Labor

- Risk reduction measures appropriate to the circumstances
- Follow-up as indicated

7. Management Of Women with Suspected PTL And PPROM

7.1. Admission for reassessment and/or therapeutic interventions

7.1.1. offer admission for reassessment and/or therapeutic interventions for women with suspected PTL and diagnosed PPROM

7.2. Antenatal prophylactic antibiotics for women with PPROM [5]. (HQE, STRONG)

7.2.1. Offer women with PPROM oral erythromycin 250 mg 4 times a day for a maximum of 10 days or until the woman is in established labor (whichever is sooner). [5].

7.2.2. For women with PPROM who cannot tolerate erythromycin or in whom erythromycin is contraindicated, or if not available consider one of the oral penicillins for a maximum of 10 days or until the woman is in established labor (whichever is sooner). [5].

7.2.3. Do not offer women with PPROM co-amoxiclav as prophylaxis for intrauterine infection. [5].

7.3. Identifying infection in women with PPROM

7.3.1. Use a combination of clinical assessment and tests (C-reactive protein, white blood cell count and measurement of fetal heart rate) to diagnose intrauterine infection in women with PPROM every 48 hours. Do Not use any of these tests in isolation to confirm or exclude intrauterine infection. [5] **(HQE, GPS)**

7.3.2. If the results of the clinical assessment or any of the tests are not consistent with each other, continue to observe the woman and consider repeating the tests. [5] **(HQE, GPS)**

7.4. Chorioamnionitis

7.4.1. Suspect Intra-amniotic infection in presence of: [37] **(HQE, STRONG)**

- Maternal fever greater than 38 °C (present in 95–100% of cases) in presence of 2 or more of the following:
  - Maternal tachycardia greater than 100 beats per minute (bpm) (present in 50–80% of cases)
  - Fetal tachycardia greater than 160 bpm (present in 40–70% of cases)
  - Uterine tenderness
  - Offensive smelling vaginal discharge
  - Increased white cell count (greater than $15x10^9$/L)

Management of Preterm labor with PPROM and suspected infection (HQE, STRONG)

7.4.2. Do not inhibit labor, but consider hastening birth under broad spectrum intravenous antibiotic cover

7.4.3. Suspect chorioamnionitis in women with PPROM if Labor ensues

7.4.4. The optimal antibiotic suggested regimen to cover Gram negative and positive and anaerobic microorganisms is combination of: [38]

- Ampicillin (or amoxycillin) 2 g IV every 6 hours AFTER sensitivity testing, and,
- Tobramycin 5 mg/kg IV daily (preferred) or gentamicin 1.5-2mg/kg/day in 3 divided doses (every 8 hours) and,
- Metronidazole 500 mg IV every 12 hours (rectal may be considered if IV is not available).

7.4.4. Continue oral ampicillin and metronidazole treatment after birth for 7 – 10 days, plus IV tobramycin or IM gentamycin for 5 days maximum.

8. Management Of Diagnosed Preterm Labor With Intact Membranes

8.1. General Rules[9] (MQE, GPS)

8.1.1. Tocolysis and steroids are the main strategies to manage preterm labor.

8.1.2. Consider in-utero transfer to a center with higher neonatal service capabilities.

8.1.3. Discuss with the women and family the conditions of transfer including limited resuscitation if birth occurs in the route.

8.1.4. Adequate assessment of the women should be done before transfer.

8.1.5. Transfer decisions should be coordinated between obstetric and neonatology teams on both sides.

8.2. Tocolysis

8.2.1. Tocolysis is recommended to give time for a course of corticosteroid therapy or to allow in-utero transfer to an obstetric center with higher-level neonatal care[5] **(HQE, STRONG)**

8.2.2. Criteria for tocolysis:

1. Woman is in suspected or diagnosed preterm labor with intact membranes
2. No other clinical features that may suggest that stopping labor is contraindicated
3. Gestational age at presentation < 37 weeks

8.2.3. It is NOT recommended to use tocolysis for > 48 hours

8.2.4. Nifedipine is the recommended tocolytic of choice[39,40] **(HQE, STRONG)**

8.2.5. Nifedipine is administered according to this protocol: [41] **(HQE, STRONG)**

- Nifedipine 20 mg oral (2 of 10 mg capsules)
- If contractions persist after 30 minutes repeat Nifedipine 20 mg oral
- If contractions persist after a further 30 minutes repeat Nifedipine 20 mg oral
- If BP is stable, give Nifedipine 20 mg oral every 6 hours for 48 hours
- Further maintenance therapy is ineffective[42]
- Maximum dose is 160 mg/day[41]
- Do not use sustained release formulation or sublingual route.

8.2.6. On Nifedipine, observe: BP, pulse and respiratory rate every thirty minutes for the first hour, then hourly for four hours (Review frequency in accordance with clinical circumstances), and measure temperature every four hours[41,42]

8.2.7. Nifedipine is contraindicated in: [41] **(HQE, STRONG)**

- Maternal hypotension
- Maternal cardiac disease (preload-dependent cardiac lesions)
- Previous adverse reaction to calcium channel blockers.
- Concomitant use with Magnesium Sulfate may increase effects of nifedipine and the risk of hypotension so use cautiously with Magnesium Sulfate

8.2.8. If there are contraindications to Nifedipine, use an alternative tocolytic as indomethacin

8.2.9. Inhibitors of prostaglandin synthesis (Indomethacin) may be used with the following conditions fulfilled: [43,44] **(LQE, STRONG)**

- There is failure to achieve tocolysis with Nifedipine or Nifedipine is contraindicated
- Only before 32 weeks of gestation (indomethacin is a potential option for use in conjunction with magnesium sulfate).
- Maximum duration is 48 hours to avoid risks for the fetus and neonate
- Ensuring close monitoring of fetal wellbeing

8.2.10. Betamimetics are not recommended for tocolysis[45,46] **(HQE, STRONG)**

8.2.11. Magnesium Sulfate is not recommended for the sole purpose of tocolysis[47,48] **(HQE, STRONG)**

8.3. Corticosteroids

8.3.1. Corticosteroids are administered according to ONE of the following protocols: [49] **(HQE, STRONG)**

- **Betamethasone: two 12-mg** doses of betamethasone I.M. **24 hours** apart
  OR
- **Dexamethasone**: **four 6-mg** doses of dexamethasone I.M. at **12 hours** intervals

Repeat Dose of Corticosteroids

8.3.2. Do not routinely administer scheduled serial or weekly courses of antenatal corticosteroids

Rational: Do not routinely administer further repeat courses. Before repeat treatment, consider current gestational age, probability and expected timing of birth, fetal growth, previous cumulative corticosteroid exposure, maternal diabetes or infection, and the balance between reduced neonatal respiratory morbidity and the small adverse effect on fetal growth.(49,5) **(HQE, CONDITIONAL)**

8.3.3. Consider one repeat course of antenatal corticosteroids for a woman at less than **34+0 weeks of gestation** who received an initial course **at least seven days** previously and who, following **renewed clinical assessment, has a high likelihood of preterm birth within the next seven days**. (49-52) **(HQE, CONDITIONAL)**

8.3.4. In women with diabetes mellitus, blood sugar levels should be monitored during the intake of corticosteroids.

8.4. Antibiotics

. Routine administration of prophylactic antibiotics to women in threatened preterm labor with intact membranes and without evidence of infection is not recommended (53-3) **(HQE, GPS)**

. When preterm labor starts, give intrapartum antibiotic prophylaxis for prevention of early onset Group B-streptococcal disease **irrespective of GBS status or membrane status:** [3] **(HQE, STRONG)**

- Benzylpenicillin (Penicillin G): After a sensitivity test; give 3 gm (5 million units) IV be given as soon as possible after the onset of labor (the first dose should be given at least 4 hours prior to delivery of baby) and then 1.5 gm (2.5- 3 million units) every 4 hours.
- Alternatives (any of):
  - Amoxicillin 2 gm IV initial dose then 1 gm every 4 hours or 2 gm every 6 hours
  - Ampicillin 2 gm IV initial dose then 1 gm every 4 hours or 2 gm every 6 hours
  - Cefuroxime 1.5 g loading dose then 750 mg every 8 hours
  - Cephazolin 2gm IV initial dose then, 1 gm every 8 hours **until delivery**
- If allergic to penicillin ➔ either of:
  - Vancomycin IV 1 gm every 12 hours, or
  - Clindamycin 900 mg every 8 hours

8.5. Magnesium Sulfate for Neuroprotection [53] **(HQE, STRONG)**

8.5.1. Offer intravenous magnesium sulfate for neuroprotection of the baby to women between **26+0 and 33+6 weeks** of pregnancy who are in established preterm labor or having a planned preterm birth within 24 hours

8.5.2. When birth is planned, commence magnesium sulfate administration 4-6 hours prior to birth for best effect.

8.5.3. If birth is expected to occur within four hours, commence MgSO4 immediately, as there may still be benefit from administration.

8.5.4. In situations where urgent birth is necessary, do not delay birth to administer MgSO4

8.5.5. Give 4 gm intravenous bolus of magnesium sulfate over 15 minutes, followed by an intravenous infusion of 1 gm per hour until the birth or for 24 hours (whichever is sooner).

8.5.6. If birth does not occur after giving MgSO4 and PTL (less than 30 weeks' gestation) again appears imminent (planned or expected within 24 hours), a repeat dose of MgSO4 may be considered.

8.6. Observations and fetal surveillance Intrapartum

8.6.1. Use of intermittent auscultation is recommended as there is absence of evidence that using cardiotocography improves the outcomes of preterm labor compared with intermittent auscultation. [5] **(HQE, GPS)**

8.7. Mode of Preterm Birth

8.7.1. There is insufficient high-quality evidence about whether mode of birth affects neonatal morbidity and outcomes. [55,56] **(HQE, STRONG)**

8.7.2. For Singleton Vertex presentation: Vaginal birth is recommended unless there are specific contraindications to vaginal birth or maternal conditions necessitating CS. [55] **(HQE, STRONG)**

8.7.3. For Breech Presentation: [55]

- ≥ 26+0 weeks: The evidence regarding optimal mode of birth for preterm breech is conflicting and unclear due to a lack of high-quality studies **(LQE, GPS)**
  - Base decisions on individual circumstances and maternal preferences
  - CS is not generally recommended where vaginal birth is imminent.

8.7.4. Consider that Preterm CS is usually technically more difficult to perform and is not without risks to the baby [57]

The lower segment is usually not well formed (upper segment incision) with risks to future pregnancies including scar dehiscence, uterine rupture, placental adherence and maternal death

8.7.5. Timing of cord clamping for preterm babies (born vaginally or by caesarean section): [58] **(MQE, GPS)**

- Delayed cord clamping is recommended for 60 to 120 seconds because it decreases newborn mortality and morbidity and improves hematological outcomes after the newborn period.
- Absolute contraindications to delayed cord clamping are
  - fetal hydrops,
  - the need for immediate resuscitation of mother or infant
  - disrupted utero-placental circulation (e.g., bleeding vasa previas), and
  - known twin-to-twin transfusion syndrome or twin anemia polycythemia sequence **(HQE, STRONG)**
- Relative contraindications to delayed cord clamping are few but include (in term infants) risk factors for significant hyperbilirubinemia (e.g., significant polycythemia, severe intrauterine growth restriction, pregestational diabetes), and cases where maternal antibody titers are high or when the first infant in a pair of monochorionic twins is delivered. In all these circumstances, immediate cord clamping should be considered. **(CONDITIONAL, LQE).**
- Umbilical cord milking:
  - Umbilical cord milking is not recommended in very preterm infants <32 weeks, due to increased risk for severe intraventricular hemorrhage **(HQE, STRONG)**
  - Delayed cord clamping should be performed instead of umbilical cord milking **(HQE, STRONG)**

Research Needs

- Individuals, organizations, and governing bodies should work to ensure that research is conducted to provide better knowledge base to guide decisions regarding prevention and improvement of outcomes of preterm labor.
- Research questions have been identified:
    a. Is a single repeat dose or a single repeat course (2 doses) of maternal corticosteroids more effective than a single course for preterm neonatal outcomes and longer-term outcomes for babies and children, and what is the optimal time interval between completing the initial course (2 doses) and the repeat dose or course?
    b. Does progesterone reduce the risk of preterm birth in women who have risk factors for preterm birth, but do not have a short cervix (cervical length of more than 25 mm) Does progesterone reduce the risk of preterm birth in women who have a short cervix (cervical length of 25 mm or less), but do not have other risk factors for preterm birth?
    c. At what gestation should treatment with prophylactic vaginal progesterone for the prevention of preterm birth be started and stopped?
    d. What is the clinical effectiveness of prophylactic cervical cerclage alone compared with prophylactic vaginal progesterone alone and with both strategies together for preventing preterm birth in women with a short cervix and a history of spontaneous preterm birth?

Implications For Practice

This guideline supports a standardized, evidence-based approach to the diagnosis and management of suspected preterm labor. Accurate assessment of the likelihood of preterm birth is essential to avoid both unnecessary intervention and missed opportunities for effective treatment.
Women at significant risk of preterm birth should receive timely gestational age–appropriate follow-up and interventions, including antenatal corticosteroids, magnesium sulfate for fetal neuroprotection, and tocolysis when indicated, together with referral or in-utero transfer to an appropriate facility when required.

Clinical Quality Standards for Monitoring

➢	Cervical Length Measurement
QS.1	Recommend routine cervical length measurement to women during the mid-trimester morphology (18–20 weeks) ultrasound scan with the cervical length documented in medical records
QM.1	**Numerator:** number of women who had cervical length measured and recorded in the mid-trimester morphology (18–20 weeks) ultrasound scan. **Denominator:** total number of women who had the mid-trimester morphology (18–20 weeks) ultrasound scan.

➢	Vaginal Progesterone Prescription
QS.2	For singleton pregnancies recommend vaginal progesterone 200 mg by night from 16–36 weeks gestation for women with an incidentally diagnosed shortened cervix (less than or equal to 25 mm) on TVCL between 16–24 weeks.
QM.2	**Numerator:** number of women with an incidentally diagnosed shortened cervix (less than or equal to 25 mm) on TVCL between 16–24 weeks who were prescribed vaginal progesterone 200 mg by night from 16–36 weeks gestation. **Denominator:** total number of women who were incidentally diagnosed with short cervix (less than or equal to 25 mm) on TVCL between 16–24 weeks.

➢	Oral Erythromycin for PPROM
QS.3	Offer women with PPROM oral erythromycin 250 mg 4 times a day for a maximum of 10 days or until the woman is in established labor (whichever is sooner).
QM.3	**Numerator:** number of with PPROM who were prescribed oral erythromycin 250 mg 4 times a day for a maximum of 10 days or until the woman is in established labor (whichever is sooner). **Denominator:** total number of women with PPROM.

➢	Identifying infection in women with PPROM
QS.4	Use a combination of clinical assessment and tests (C-reactive protein, white blood cell count and measurement of fetal heart rate) to diagnose intrauterine infection in women with PPROM every 48 hours. Do Not use any of these tests in isolation to confirm or exclude intrauterine infection.
QM.4	**Numerator:** number of women with PPROM who were assessed clinically and with C-reactive protein, white blood cell count and measurement of fetal heart rate to diagnose intrauterine infection in women with PPROM. **Denominator:** total number of women with PPROM.

➢	Tocolysis for Diagnosed PTL
QS.5	Tocolysis is recommended to give time for a course of corticosteroid therapy or to allow in-utero transfer to an obstetric center with higher-level neonatal care.
QM.5	**Numerator:** number of women diagnosed with preterm labor who received tocolysis. **Denominator:** total number of women diagnosed with preterm labor.

➢	Corticosteroids for Diagnosed PTL
QS.6	Corticosteroids are administered to women with diagnosed PTL according to ONE of the following protocols: • Betamethasone: two 12-mg doses of betamethasone I.M. 24 hours apart OR • Dexamethasone: four 6-mg doses of dexamethasone I.M. at 12 hours intervals
QM.6	**Numerator:** number of women diagnosed with preterm labor who received corticosteroids according to the protocol **Denominator:** total number of women diagnosed with preterm labor.

Updating of the guideline

This guideline will be updated whenever there is new evidence.

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