For Consultation/Transfer, MFM via ONE CALL: (207) 662 - 6632
NL-EMMC OB via Northern Light Health Integrated Transfer Center (207) 973 - 9000

Algorithm for patient presenting with pre-term labor signs/symptoms

PERFORM initial assessment upon admission

° **DETERMINE** presence/frequency of contractions (palpation and external monitor), and other signs/symptoms of PTL (a)
° **DETERMINE** whether there is uterine bleeding (suggesting placental abruption, placenta previa).
° **Check** fetal well-being with electronic fetal monitor.
° **SEND** urine for urinalysis with reflex to urine culture if positive.
° **PERFORM** sterile speculum exam: Visually inspect for PROM, umbilical cord prolapse, or fetal prolapse; if between 24 -34 weeks, *obtain and hold fetal fibronectin* (fFN) (c) and GBS culture before digital exam (if PCN-allergic, request sensitivities at time of culture); assess cervical dilation visually.

if PROM:
→ See addendum for **PPROM protocol link**

If evident intrauterine infection, placental abruption or fetal compromise:
→ **DELIVERY** may be warranted, consider **CONSULT** MFM

TVU readily available?

yes → **PERFORM** transvaginal ultrasound (TVU)
° **TRIAGE** based on cervical length (CL).
° **DETERMINE** risk of Preterm Birth (PTB).

- **Low RIsk** (CL ≥ 30 mm) → **DISCARD** fFN
- **Medium RIsk** (CL 20 - 29 mm) → **SEND** fFN (c)
- **High RIsk** (CL <20 mm) → **DISCARD** fFN

negative fFN → **DISCHARGE** home, and **FOLLOW UP** for PTL* (b)

positive fFN → **ADMIT** for inpatient management
1. **TRANSFER** to tertiary care center as per leveling criteria and **shared-decision making** with patient/family.
2. **CONSULT/NOTIFY** MFM, neonatology, pediatrics.
3. **GIVE** IVF hydration.
4. **SEND** GBS culture and CBC.

GIVE medications for: see Medications box (d)
° **Fetal benefit** (betamethasone to lower risk of RDS; magnesium sulfate for neuroprotection).
° **Tocolysis** (for short-term pregnancy prolongation).
° **GBS prophylaxis** (per Perinatal GBS algorithm).

PERFORM key tasks at delivery
° **PERFORM** delayed cord clamping (recommended for all vigorous term and preterm infants x 30 - 60 seconds after delivery).
° **OBTAIN** cord gases.

→ **MOVE** infant to Newborn/NICU and **INTIATE** postpartum care for mother

no → **PERFORM** digital exam
° **TRIAGE** based on cervical dilation.

≥ 2 cm or ≥ 80% effaced → **DISCARD** fFN

< 2cm dilated or <80% effaced → **MONITOR** cervical change, reasses at 2 hours, or PRN

Cervical change?
- yes → **DISCARD** fFN
- no → **DISCHARGE** home, and FOLLOW UP for PTL (b)

This document is a compilation of Maine Health MFM guidelines and does not substitute for clinical decision making or consult with MFM, OBGYN or Midwifery services. Please refer to guidelines for details and references.

See addendum for notes (a), (b), (c), and (d)

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Links to MFM Obstetric Guidelines and Protocols

- MFM Preterm Labor Guideline
- MFM PPROM Protocol
- MFM Corticosteroid for Fetal Lung Maturity Guideline
- MFM GBS Early Onset Prevention Guideline
- MFM Maternal Fetal Transport Guidelines
- MFM Magnesium Sulfate for Neuroprotection Guideline

All MFM Obstetrical & Perinatal Guidelines
https://www.mainehealth.org/Healthcare-Professionals/Clinical-Resources-Guidelines-Protocols/Obstetrical-Perinatal-Guidelines

Maine Perinatal Outreach website: www.mmc.org/perinatal-outreach

(a) Preterm Labor Signs/Symptoms and Diagnosis

° menstrual-like cramping, low back pain
° uterine contractions
° vaginal discharge

The diagnosis of preterm labor is based upon the presence of regular uterine contractions accompanied by a change in cervical dilation, effacement, or both, or initial presentation with regular contractions and cervical dilation of at least 2 cm. (ACOG Practice Bulletin No. 171. Management of preterm labor. October 2016.)

(b) Follow-up after Evaluation for PTL and discharge

° Instruct patient to call with additional signs or symptoms of PTL
° Schedule a Prenatal visit within 1 - 2 weeks
° If started, complete 48-hour steroid window as an outpatient, see Medication box (d)

(c) Fetal Fibronectin Criteria

If the fetal fibronectin enzyme immunoassay kit is to be used the following criteria should be met:

1. Amniotic membranes are intact.
2. Cervical dilation is minimal (< 3 cm).
3. Sampling is performed no earlier than 24 weeks, 0 days and no later than 34 weeks, 6 days of gestation.
   a. The test is not recommended for routine screening of the general obstetric population.
   b. Although a negative test appears to be useful in ruling out preterm delivery that is imminent (ie, within 2 weeks), the clinical implications of a positive result have not been evaluated fully.
4. No bleeding, intercourse, vaginal examinations for **at least 24 hours** prior to sampling.

Fetal Fibronectin Collection

1. Perform sterile speculum exam and rotate the provided Dacron swab across posterior fornix for 10 seconds to absorb cervicovaginal secretions. Subsequent attempts may invalidate the test. (Use only the Hologic Collection kit).
2. Remove swab and immerse Dacron tip into buffer solution. Break shaft at score mark.
3. Align shaft with cap and push down tightly.
4. Label specimen with patient's name, DOB, and collection date and time.
5. If not immediately sent to lab, specimen must be refrigerated after collection. It is ideal to transport the specimens refrigerated, however specimen integrity is maintained at **room temperature for 8 hours.**

Medications

(d) Preterm Labor and Preterm Birth (PTB) Medication Considerations

Use in PTL	Recommendations
Fetal Benefit	To lower risk of respiratory distress syndrome, intraventricular hemorrhage, necrotizing enterocolitis, and neonatal death, give a **corticosteroid course** to all patients 24 - 34 weeks gestation: ° Betamethasone: 12mg IM every 24 hours x 2 doses. - if betamethasone unavailable, may use: ° Dexamethasone: 6mg IM every 12 hours x 4 doses. **Note: After MFM/NICU consult, timing of administration at periviabilty (20+0 - 25+6 wks) should be guided by the family's decision regarding neonatal resuscitation.* (Periviable birth. Obstetric Care Consensus No. 6. American College of Obstetricians and Gynecologists. Obstet Gynecol 2017;130:e187–99.) **Rescue Corticosteroid Course for Patients < 34 0/7 Weeks:** If a patient has received a previous corticosteroid course > 14 days previously (though can be provided as early as 7 days from prior dose), AND at risk of delivery within the next 7 days AND < 34 0/7 weeks, give corticosteroid course. **Note: Repeat courses or serial courses (more than two) are not recommended. Whether to administer a repeat course of corticosteroids with preterm, premature rupture of membranes is controversial, and there is insufficient evidence to make a recommendation for or against.* **Because corticosteroid treatment for < 24 hours is still associated with reduction in neonatal morbidity and mortality, the first dose of corticosteroids should be administered even if the ability to give the second dose is thought to be unlikely (e.g., PPROM with suspected early labor).* **Patients Between 34 0/7 and 36 6/7 Weeks** Antenatal corticosteroids may be of benefit to infants born in the late preterm period. A steroid course is recommended for patients who are considered at high risk of delivery within 7 days and who **have not received a previous course** of antenatal steroids.
	For neuroprotection at < 32 weeks gestation, give: ° Magnesium sulfate 4 gram bolus, followed by 1 gram/hour for up to 24 hours
Tocolysis Use for short-term pregnancy prolongation (to allow time for patient transfer, medications administration for fetal benefit); give a tocolytic for up to 48 hrs.	**First Line: ≤ 32 weeks, give ONE of the following:** ° Indomethacin: 50-100 mg by mouth loading dose followed by 25-50 mg by mouth every 6-8 hours, not to exceed 48 hours total treatment. ° Nifedipine: 20-30 mg by mouth loading dose, then 10-20 mg by mouth every 6-8 hours **First Line: 32 - 34 weeks, give:** ° Nifedipine: 20-30 mg by mouth loading dose, then 10-20 mg by mouth every 6-8 hours **Note: Tocolysis is contraindicated when risks of use outweigh potential benefits (e.g., in case of nonreassuring fetal status, severe preeclampsia or eclampsia, maternal bleeding with hemodynamic instability, chorioamnionitis, PPROM, or agent-specific maternal contradictions).*
GBS prevention	**Follow MMC GBS Early-Onset Prevention Guideline. For all patients, as needed, give either:** ° Penicillin G: 5 million units IV initial dose; then, 2.5 –3.0 million units every 4 hours until delivery. ° Ampicillin: 2 g IV initial dose; then, 1 g every 4 hours until delivery or the threat of PTB is low. **If penicillin allergy, low risk** (e.g., isolated maculopapular rash without urticaria or pruritus): ° Cefazolin: 2 g IV initial dose; then, 1 g every 8 hours until delivery. **If penicillin allergy, high risk** (e.g., anaphylaxis, angioedema, respiratory distress, urticaria): ° Clindamycin: 900mg IV every 8 hours until delivery. ° If sensitivities unavailable, then give vancomycin (1 gram IV initial dose every 12 hours until delivery). If isolate susceptible to clindamycin and erythromycin, they give clindamycin (900mg IV initial dose every 8 hours until delivery).