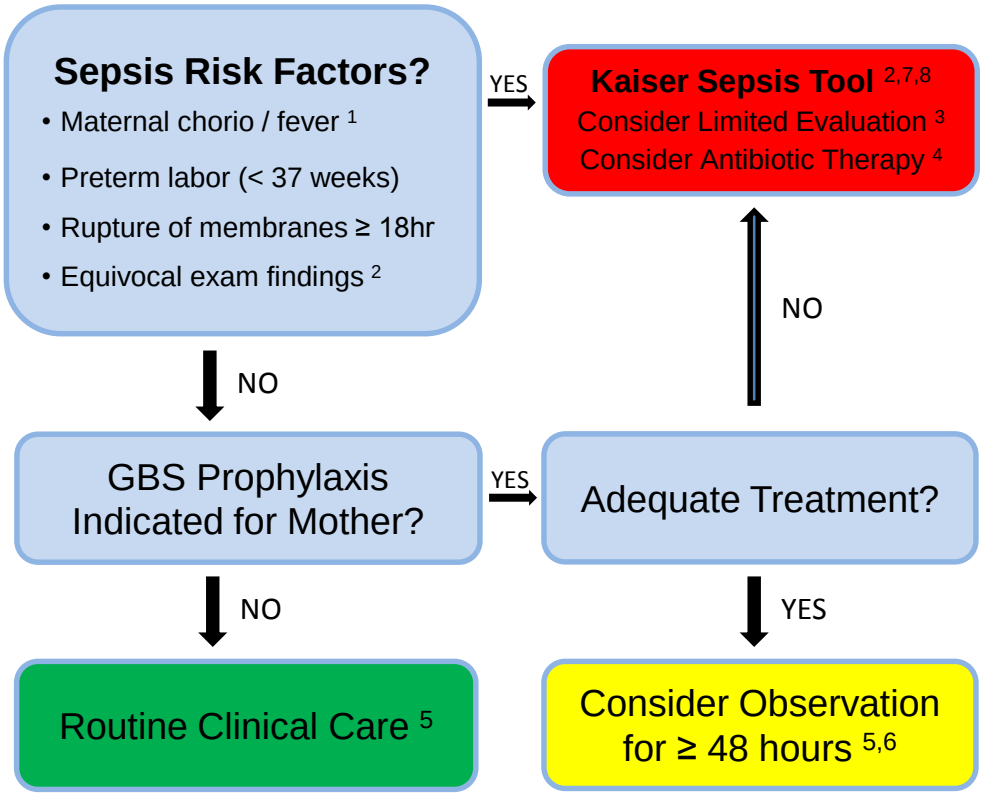
Algorithm for Prevention of Early Onset Sepsis Among Newborns Born ≥ 34 Weeks Gestation*



ANTIBIOTIC DOSING:

Birth GA	Ampicillin	Gentamicin
≥ 35 (weeks)	100 mg/kg Q12 hours IV	4 mg/kg Q24 hours IV
34 (weeks)	100 mg/kg Q12 hours IV	4.5 mg/kg Q36 hours IV

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FOOTNOTES:

* **This guideline is intended to provide guidance. Ultimately, clinicians must make their own care decisions on a case-by case basis after considering alternative factors and using clinical judgment.**

1. Consultation with obstetric providers is important to determine the level of clinical suspicion for chorioamnionitis. Chorioamnionitis is diagnosed clinically but maternal fever is an important finding.
2. https://neonatalsepsiscalculator.kaiserpermanente.org/
   Equivocal exam findings include one of the following physiologic abnormalities for ≥ 4 hrs or two or more abnormalities lasting ≥ 2 hrs
   - Tachycardia (HR ≥ 160)
   - Tachypnea (RR ≥ 60)
   - Temperature instability (≥ 100.4^0 F or < 97.5^0 F)
   - Respiratory distress (grunting, flaring, or retracting)

   Findings can be intermittent
3. *Limited evaluation* includes blood culture (at birth) and vital signs every 4 hours.
4. *Antibiotic therapy* should be directed toward the most common causes of neonatal sepsis, including intravenous ampicillin for GBS and coverage for other organisms. Start ***ampicillin and gentamicin***. Consider ***ampicillin and ceftazidime/cefepime*** if renal insufficiency is present, or suspected meningitis.
5. If signs of sepsis develop, a full diagnostic evaluation should be conducted and antibiotic therapy initiated.

   Full diagnostic evaluation includes a blood culture, a complete blood count (CBC) with differential, and chest radiograph (if respiratory distress). Consider lumbar puncture if there are signs of meningitis or cultures return positive. 15-38% of infants with early onset meningitis have sterile blood cultures, so evaluating CSF will optimize diagnostic sensitivity.
6. Observation may occur at home after 24 hours if **all** apply: ≥37 weeks gestation, other discharge criteria have been met, access to medical care is readily available, and a person who is able to comply fully with instructions for home observation will be present.
7. Some experts recommend a CBC with differential and platelets at age 6-12 hours of life, if mother did not received intravenous antibiotics for ≥4 hours prior to delivery.
8. Consider **48 hour** inpatient observation. May consider d/c after 24 hours if infant has low sepsis risk score, no clinical concerns and all criteria in footnote 6 are met.

Appendix A: Group B Strep Exposure and Disease in the Newborn:

- Group B Streptococcus is a major cause of perinatal bacterial infection, including bacteremia, meningitis, endometritis, chorioamnionitis and urinary tract infections. Early-onset disease usually occurs in the first 24 hours of life (range 0 – 6 days) and is characterized by respiratory distress, apnea, shock, pneumonia, and meningitis (5 – 10% of cases). Late-onset disease occurs after the first week of life, typically at 3 to 4 weeks of age. Late-onset disease commonly presents as occult bacteremia or meningitis. Late, late-onset disease occurs after 89 days of age in very preterm infants requiring prolonged hospitalization.
- The colonization rate in pregnant women ranges from 15 – 35%. Since the implementation of widespread maternal intrapartum prophylaxis the incidence of early-onset GBS has decreased by approximately 80% from 1-4 cases per 1000 births to 0.28 cases per 1000 live births. The use of intrapartum chemoprophylaxis has had no measurable impact on late-onset GBS disease.
- **RECOMMENDATIONS FOR ALL PREGNANT WOMEN ARE AS FOLLOWS**:
  - All pregnant women should be screened between 35 to 37 weeks' gestation for vaginal and rectal GBS colonization.
  - A patient who presents with signs and symptoms of preterm labor (< 35 weeks) should be swabbed for vaginal-rectal GBS culture and started on prophylactic antibiotics. If the patient is in true labor (meaning imminent delivery) antibiotics should be continued until delivery, if not in true labor (not delivering imminently) may discontinue antibiotics and obtain GBS culture results. If the results are positive, restart antibiotics at onset of true labor.
  - **Indications for intrapartum antibiotic prophylaxis (IAP):**
    - Previous infant born to the mother with GBS disease
    - GBS bacteriuria during any trimester of pregnancy
    - Positive GBS vaginal-rectal culture in the preceding 5 weeks prior to true labor
    - Unknown GBS status, plus one or more of the following :
      1. Delivery ≤ 37 weeks gestation
      2. Rupture of membranes ≥18 hours
      3. Intrapartum temperature ≥ 100.4˚F (38˚C)
      4. Intrapartum NAAT positive for GBS (nucleic acid amplification tests) – NAAT test optional and may not be available

ATTENTION!

All newborn infants with signs suggestive of sepsis should have a full diagnostic evaluation.

- **The definition of IAP has been clarified to be AT LEAST 4 hours of penicillin, ampicillin, or cefazolin.** Penicillin remains the agent of choice for IAP, and ampicillin is an acceptable alternative. Penicillin-allergic women who do not have a history of anaphylaxis, angioedema, respiratory distress, or urticaria after administration of penicillin or a cephalosporin should receive cefazolin. Penicillin-allergic women at high risk of anaphylaxis should receive clindamycin if their GBS isolate is susceptible or vancomycin if their GBS isolate is intrinsically resistant to clindamycin. The initial intravenous dose of penicillin is 5 million units; for ampicillin and cefazolin, the initial dose is 2 grams. All other antibiotics, doses, or durations are considered inadequate for the purposes of neonatal management

References:

American Academy of Pediatrics, Committee on Infectious Diseases and Committee on Fetus and the Newborn. (2011, September). Recommendations for the Prevention of Perinatal Group B Streptococcal (GBS) Disease Pediatrics: 128(3), pp. 611-616.

American Academy of Pediatrics. (2012). *Red Book: 2012 Report of the Committee on Infectious Diseases (29th ed.).* Elk Grove Village, IL: American Academy of Pediatrics. pp. 680-685.

Adapted with permission from Centers for Disease Control and Prevention. Prevention of perinatal group B streptococcal disease: prevention of perinatal group B streptococcal disease from CDC, 2010. MMWR Recomm Rep. 2010;59[RR-10]:1–32.

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