CLINICAL PRACTICE GUIDELINE
Guideline coverage includes NICU KEMH, NICU PMH and NETS WA

Sepsis: Septic Calculator - Assessment of Early-Onset Sepsis in Infants > 35 Weeks

This document should be read in conjunction with the Disclaimer

Neonatal Sepsis Calculator

- Neonatal Early-Onset Sepsis Calculator.
- Set incidence to the **KEMH rate of 0.4/1000 live births.**

Key Points

- This guideline applies to all infants born at ≥ 35 weeks and cared for at KEMH and covers early-onset sepsis (EOS) risk with any bacteria.
- Three categories of infants require a blood culture and antibiotic treatment without delay:
  - Unwell appearing infants.
  - Infants whose sibling had EOS.
  - Infants whose mother currently has Group A Streptococcal infection (GAS disease).
- Contact the on-call paediatric staff for any queries or concerns about an infant.

Definitions and Parameters used for Assessment of Risk for Neonatal Sepsis

Maternal Risk Factors:

- Gestational age (in weeks and days).
- Highest maternal **antepartum** temperature (in decimal degrees Celsius; **for the purpose of this guideline, antepartum maternal temperature refers to any maternal temperature prior to birth, i.e. antepartum and intrapartum maternal temperature**).
- Rupture of membranes (in hours).
- GBS status (positive, negative, unknown).
- Maternal intrapartum antibiotics (type of antibiotic, time interval to delivery in hours).

  Classification of maternal intravenous antibiotics:
  - GBS IAP: Penicillin, Ampicillin, Amoxicillin, Clindamycin, Erythromycin, Cefazolin, Vancomycin.
  - Broad-spectrum antibiotics: other Cephalosporins, Fluoroquinolone, Piperacillin/Tazobactam, Meropenem or any combination of antibiotics that includes an Aminoglycoside or Metronidazole.

Newborn Clinical Presentation:

The EOS risk score then incorporates the clinical presentation of the infant to determine the appropriate management plan. The newborn clinical presentation is assessed as:

- Well appearing.
- Equivocal signs.
- Clinical illness.

Definition of Equivocal Clinical Signs

Clinical Parameters Assessed	Equivocal Signs
Heart rate > 160/min Respiratory rate > 60/min Temperature > 38.0°C or < 36.4°C Respiratory distress (grunting, nasal flaring or costal recessions)	2 clinical parameters abnormal for >2hrs **or** 1 clinical parameter abnormal for 4hrs

- Any infant with abnormal clinical parameters requires urgent paediatric review.
- Any infant with equivocal signs requires observation in the neonatal unit.

Clinical Illness

- Unwell babies will be managed in the neonatal unit.

How to Use the Sepsis Calculator

- Neonatal Early-Onset Sepsis Calculator.
- Set incidence to the **KEMH rate of 0.4/1000 live births.**
- Enter all required parameters and calculate EOS risk score.

Interpretation of EOS Risk Score Results and Infant Management

Management Plan for GREEN Group:

- Routine care.
- Early discharge possible.

Management Plan for YELLOW Group:

- Require: **BLOOD CULTURE AND OBSERVATION.**
- No routine full blood count or CRP.
- Infants with **equivocal signs** require observation in the **neonatal unit**; when signs have normalised.
- Observations (3 hourly vital signs) may continue on the postnatal wards until blood culture result available.
- Infants with **medium risk, but normal exam** may be observed (3 hourly vital signs) on postnatal wards until blood culture result available.
- If abnormal clinical parameters develop, the infant requires urgent paediatric review.

- If equivocal signs develop, infant requires transfer to neonatal unit.

Management Plan for RED Group:

- **TAKE BLOOD CULTURE AND TREAT WITH EMPIRIC ANTIBIOTICS.**
- for details, see sepsis treatment guideline and antibiotic monographs.
- With the blood culture, take full blood count and CRP.
- Repeat CRP next morning (usually no earlier than 8-12 hours after first CRP).
- Unwell infants and those with equivocal signs will be treated in the neonatal unit until stable and may then continue treatment and observation on the postnatal wards.
- Well infants requiring antibiotics may be treated on the postnatal wards and require 3 hourly vital signs until blood culture result available.

Documentation of EOS Risk and Clinical Assessment in Medical Notes

- The EOS risk score should be documented on the neonatal history sheet by the staff attending the delivery (midwife, nurse or doctor).
- The **EOS Risk score after Clinical Exam** should be calculated as early as possible after delivery, when a set of neonatal observations are available.
- Documentation of the **EOS Risk score after Clinical Exam** should be on the front of the neonatal history sheet under ‘Complications of this pregnancy’. Document:
  - Date/time.
  - ‘EOS risk score: [**insert calculated score**]’.
  - Management category, i.e. green, yellow or red based on baby’s clinical condition.
- If the EOS risk score was not completed in the birth room/theatre, then this should be performed at the earliest opportunity and the result documented as above.
- If the infant displays abnormal clinical signs at any point within the first 24 hours, a complete newborn assessment needs to be documented in the medical notes.
- Infant management plan, based on the EOS risk score and current clinical presentation needs to be documented in the medical notes.
- If baby’s clinical presentation changes, the overall EOS risk score and the appropriate management plan may change and needs to be documented in the medical notes.

Related WNHS policies, procedures and guidelines

Neonatal Early-Onset Sepsis Calculator

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