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## Antibiotic Stewardship/Neonatal Sepsis

### Data Dictionary

The purpose of the Data Dictionary is to develop consistency in data entry. The Data Dictionary refers to elements visible when the reporting forms are printed.

**The inclusion criteria** for this data collection set is all infants who have received any antimicrobial started within the first 48 hours of life. Infants must be born on or after February 1, 2017.

Those infants excluded from this data should be surgical infants and infants that were transferred in from another facility.

This Dictionary defines the basic elements of entries for all information

#### Part I- Admission

1. **Patient admitted to which unit.** The location of the infant is determined by the unit that is deciding overall plan of care for the at risk infant.:
  - NICU/SCN : Neonatal Intensive Care Unit/Special Care Nursery
  - NBN: Newborn Nursery
2. **Chart Number:** Please do not enter the medical record number. Please enter a number that you determine internally. If a NICU and a Newborn Nursery from the same institution are participating, please develop a naming convention to differentiate those patients (ie. NICU 1 or NBN 1).
3. **Date of birth:** Format: mm/dd/yyyy
4. **Admission Date:** The date the infant was admitted to your nursery or NICU  
Format: mm/dd/yyyy
5. **Discharge Date:** date infant completed all antimicrobials that were initiated within the first 48 hours of life. (ie. Last dose received on 12/6/16. Discharge date will therefore be 12/6/16) **OR** date infant was discharged from the hospital. Format: mm/dd/yyyy
6. **Gestational age at delivery:** The number of weeks and days of gestation an infant is born at. For example, an infant may be born at 30 weeks and 5 days gestation.
- 6a. **Kaiser Sepsis Calculator:** an interactive, risk-stratification calculator based on maternal and newborn risk factors for use in infants born at or above 34 weeks gestation. The calculator produces the probability of early-onset infection per 1000 babies by entering values for each maternal risk factor.

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(Please note: Incidence of Early-Onset Sepsis risk factor to choose is determined by each individual institution.)

**6b.  Well-Appearing:** No persistent physiologic abnormalities

**Equivocal:**

1. Persistent physiologic abnormality  $\geq 4$  hrs
  - Tachycardia (HR  $\geq 160$ )
  - Tachypnea (RR  $\geq 60$ )
  - Temperature instability ( $\geq 100.4^{\circ}\text{F}$  or  $< 97.5^{\circ}\text{F}$ )
  - Respiratory distress (grunting, flaring, or retracting) not requiring supplemental O<sub>2</sub>
2. Two or more physiologic abnormalities lasting for  $\geq 2$  hrs
  - Tachycardia (HR  $\geq 160$ )
  - Tachypnea (RR  $\geq 60$ )
  - Temperature instability
  - Respiratory distress (grunting, flaring, or retracting) not requiring supplemental O<sub>2</sub>

Note: abnormality can be intermittent

**Clinical Illness:**

1. Persistent need for NCPAP / HFNC / mechanical ventilation (outside of the delivery room)
2. Hemodynamic instability requiring vasoactive drugs
3. Neonatal encephalopathy / Perinatal depression
  - Seizure
  - Apgar Score @ 5 minutes  $< 5$
4. Need for supplemental O<sub>2</sub>  $\geq 2$  hours to maintain oxygen saturations  $> 90\%$  (outside of the delivery room)
7. Indications for prescribing antimicrobials: (able to choose more than one. You should be able to choose maternal risk factors, prematurity and abnormal CBC and CRP if all apply)
  - Maternal risk factors
    - Rupture of membranes greater than 18 hours
    - Positive or unknown GBS
    - Maternal temp greater than  $100.4^{\circ}\text{F}$
    - Preterm labor:** begins with contractions of the uterus before 37 weeks of pregnancy that cause the cervix to thin out and open up
    - Premature rupture of membranes:** is the rupture of membranes, or water breaking, before the onset of labor
    - Diagnosis of clinical chorioamnionitis:** diagnosis determined by obstetrician at delivery
  - Prematurity only:** birth occurring less than 37 0/7 weeks' gestation

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- Prematurity and respiratory distress only:** less than 37 0/7 weeks' gestation with noted grunting, flaring or retracting
  - Other signs/symptoms of sepsis
    - Tachypnea:** respiratory rates greater than 60 breaths per minute
    - Temperature instability**
    - Pallor:** pale
    - Poor perfusion:** the decrease flow of blood through blood vessels resulting in low oxygen delivery to tissues
    - Decreased level of consciousness:** poor or no respiratory effort, or poor muscle tone
    - Apnea:** A cessation of breathing for 20 seconds or longer or a shorter pause accompanied by bradycardia, cyanosis, or pallor.
    - Bradycardia:** heartrate less than 80 beats per minute
    - Metabolic acidosis:** blood gas with a low pH and a negative base excess. Specific values may vary by hospital policy. Refer to your specific hospital protocols to determine
    - Abdominal distention
  - Abnormal CBC results drawn within the first 48 hours of life (able to choose more than one)
    - Abnormal WBC count:** White Blood Cell count. Abnormal value depends on the neonate's gestational age at birth and on the postnatal age when the blood was drawn. Refer to your specific hospital policy for specific values.
    - Abnormal ANC:** Absolute neutrophil count: the real number of white blood cells (WBCs) that are neutrophils. The ANC is not measured directly. It is derived by multiplying the WBC count times the percent of neutrophils in the differential WBC count. The percent of neutrophils consists of the segmented (fully mature) neutrophils) + the bands (almost mature neutrophils). Refer to your specific hospital policy for specific values.
    - Abnormal I:T ratio:** Immature to Total Neutrophil ratio. The ratio determines the percentage of immature to total white blood cells.
  - Abnormal CRP results drawn within the first 48 hours of life:** C-reactive protein. Refer to your specific hospital policy for specific values.
  - Abnormal procalcitonin level (PCT) within the first 48 hours of life:** PCT is a blood test to evaluate early onset systemic, bacterial infections. Refer to your specific hospital policy for specific abnormal procalcitonin values.
  - None of the above risk factors present

**8. Was a blood culture drawn prior to the initiation of antibiotics?**

Vascular specimen drawn aseptically. Refer to your specific hospital protocol on how to obtain and from which sites to obtain specimen from.

- Yes
- No

8a. If yes, what was the result of the initial blood culture?

- Negative:** no growth determined by lab report
- Positive:** organism growth determined by lab report

9. According to the patient medical administration record, did the infant receive a dose (s) of any antibiotics **within** the first 48 hours of life?

**(First 48 hours of life:** Calculated 48 hours after the exact time of delivery. For example, infant born at 0610 July 6, 2016. 48 hours would be 0610 on July 8, 2016)

- Yes
- No

9a. If yes, indicate which antibiotic was administered.

- Ampicillin
- Gentamicin
- Vancomycin
- Cefotaxime
- Antifungal
- Other cephalosporin

9b. **Antibiotic start date:** date infant received first dose of antibiotic\_\_\_\_\_

9c. **Antibiotic stop date:** date infant received last dose of antibiotic\_\_\_\_\_

9d. **Exact number of doses administered from start date to stop date:** count total number of doses infant actually received\_\_\_\_\_

9e. **Dosing interval:** frequency medication was ordered and given\_\_\_\_\_

10. Was a second antibiotic administered to the infant within the first 48 hours of life?

- Yes
- No

10a. If yes, please indicate the antibiotic.

- Ampicillin
  - Gentamicin
  - Vancomycin
  - Cefotaxime
  - Antifungal
  - Other cephalosporin
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- 10b. **Antibiotic start date:** date infant received first dose of antibiotic\_\_\_\_\_
- 10c. **Antibiotic stop date:** date infant received last dose of antibiotic\_\_\_\_\_
- 10d. **Exact number of doses administered from start date to stop date:** count total number of doses infant actually received\_\_\_\_\_
- 10e. **Dosing interval:** frequency medication was ordered and given\_\_\_\_\_
11. Was any antibiotic continued past 48 hours from the initial dose despite a negative blood culture?
- Yes
  - No
- 11a. If yes, please indicate the rationale for continuing antibiotics:
- Prematurity only:** birth occurring less than 37 0/7 weeks' gestation
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12. Was parent/family education provided? (able to choose more than one)

- Written
- Verbal
- Teach back:** Parent is able to accurately verbalize information received by medical provider
- None