

PROTOCOL FOR: Apnea / Bradycardia / Periodic Breathing

DESIRED PATIENT

- OUTCOMES:
1. Episodes of apnea/periodic breathing will be readily identified and treated.
  2. Adequate oxygenation will be maintained.
  3. Adverse effects of hypoxemia will be eliminated or minimized.

CLINICAL  
ASSESSMENTS AND

- CARE:
1. Assess events associated with apnea/bradycardia/periodic breathing (refer to Apnea/Bradycardia Flowsheet):
    - a. heart rate
    - b. respiration
    - c. oxygen saturation and/or TcCO<sub>2</sub>
    - d. duration episode of desatuation and/or apnea bradycardia
    - e. color
    - f. activity/state
    - g. relationship to feeding/stooling
    - h. position/posture
    - i. secretions
    - j. abnormal temps - axillary or environmental
    - k. abnormal glucometer reading
      - 1) Report initial apneic episode.
      - 2) Report increased frequency, severity, change in character of apnea/bradycardia episodes.
    - l. Clinical findings that give the impression of reflux: formula in mouth, "wet patch" on linens, grimacing, squirming, swallowing.
  2. Interventions for apnea/bradycardia/periodic breathing. If no spontaneous recovery:
    - a. Provide gentle tactile stimulation and assess response.
    - b. Reposition.
    - c. Suction if secretions/formula present.
    - d. If infant resumes spontaneous respirations, but is cyanotic, give blow-by oxygen.

**PROTOCOL FOR: Apnea / Bradycardia / Periodic Breathing**

- e. If apneic/bradycardic after intervention and blow-by oxygen, begin positive pressure ventilation and CPR as warranted.
- 3. Administer supplemental oxygen as ordered.
- 4. Maintain neutral thermal environment.
- 5. Prevent airway obstruction related to position - use neck rolls.
- 6. Keep cardiorespiratory monitor on with alarm limits set at:

ALL INFANTS	INFANTS ≥ 34 WEEKS	PREMATURE INFANTS
Respiration High = 100	*High Heart Rate = 180	*High Heart Rate = 180
Apnea Delay = 20 seconds	Low Heart Rate = 80	Low Heart Rate = 100 (for infants < 34 weeks)

- 7. Make sure bag and mask is attached to flowmeter and set at liter flow that is recommended by the manufacturer (e.g., 8L/minute for Ventlab Bags). Keep flowmeter turned on at all times with Eliminator for NICU patients.
- 8. If on respiratory stimulants such as caffeine:
  - a. monitor BP every 8 hours
  - b. check HR before administering dose
  - c. assess for signs of GI irritation
    - 1) Report sustained tachycardia (>180 unless other parameters or as per infant's baseline HR) or signs of GI bleeding or irritation.

- DOCUMENTATION:**
- 1. Document on NICU/NBN Apnea/Bradycardia Flowsheet:
    - a. Apnea episodes longer than 20 seconds duration. Shorter periods of apnea (> 5 seconds) that are associated with bradycardia or cyanosis should be documented.
    - b. Bradycardia episodes longer than 5 seconds duration.
    - c. Oxygen desaturation episodes longer than 15 seconds duration.
    - d. Counting alarm rings may help to quantify the duration of the episode; more than 5 alarm rings is considered significant. This is roughly 4 to 5 seconds for a heart rate in the 75-85 range. (Keep in mind that the rate of alarm rings increases with the severity of the alarm state).
  - 2. For infants on apnea/bradycardia episodes "countdowns" prior to discharge, if the nature/severity of the episode cannot be adequately described in the flowsheet, a progress note is required. This will assist in appropriate discharge planning.

PROTOCOL FOR: Apnea / Bradycardia / Periodic Breathing

APPROVAL: Nursing Standards Committee

EFFECTIVE DATE: 12/92

REVISION DATES: 2/95, 5/97, 9/99, 10/01, 10/03, 2/06, 12/08

REVIEWED DATES: 11/07