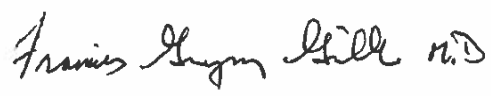


**Prior Authorization Review Panel**

**CHC-MCO Policy Submission**

A separate copy of this form must accompany each policy submitted for review.  
Policies submitted without this form will not be considered for review.

<b>Plan: PA Health &amp; Wellness</b>	<b>Submission Date: 03/01/19</b>
<b>Policy Number: PA.CP.MP.82</b>	<b>Effective Date: 02/2019</b> <b>Revision Date:</b>
<b>Policy Name: NICU Apnea Bradycardia Guidelines</b>	<b>HC Approval Date:</b>
<p><b>Type of Submission – Check all that apply:</b></p> <p><input checked="" type="checkbox"/> <b>New Policy</b></p> <p><input type="checkbox"/> <b>Revised Policy*</b></p> <p><input type="checkbox"/> <b>Annual Review – No Revisions</b></p> <p><input type="checkbox"/> <b>Attestation of HC PARP Policy</b> – <i>This option should only be used during Readiness Review for Community HealthChoices. The policy must be identical to the PARP approved policy for the HealthChoices Program, with the exception of revisions/clarifications adding the term “Community HealthChoices” to the policy.</i></p>	
<p><b>*All revisions to the policy <u>must</u> be highlighted using track changes throughout the document.</b></p> <p><b>Please provide any changes or clarifying information for the policy below:</b></p> <p><b>Policy Developed</b></p>	
<p><b>Name of Authorized Individual (Please type or print):</b></p> <p>Francis G. Grillo, MD</p>	<p><b>Signature of Authorized Individual:</b></p> 

## Clinical Policy: NICU Apnea Bradycardia Guidelines

Reference Number: CP.MP.82

Last Review Date: 02/19

[Revision Log](#)

### Description

The purpose of this guideline is to assist with continuing care, discharge planning, and the transition to outpatient and home care of babies affected by ongoing neonatal apnea and bradycardia events. It will also serve as a guideline for the approval of continued stay for neonatal admissions. The recommendations below are based primarily off meta-analyses and practice patterns, as there are few controlled trials in this area.

### Guidelines

Infants **may** be considered ready for discharge from inpatient care for cardiorespiratory events or caffeine administration when meeting the guidelines in I, II, and/or III, as applicable.

- I. **Discharge from inpatient care for significant cardiorespiratory events**, all of the following:
  - A. Infant demonstrates maturity of respiratory control and one of the following:
    1. Infant has had no **clinically significant** cardiorespiratory events (apnea and bradycardia) for 5 days prior to discharge, or up to 7 days prior to discharge for preterm infants born at <32 weeks gestation, all of the following:
      - a. No apnea  $\geq$  20 seconds;
      - b. No apnea < 20 seconds with bradycardia of < 80 beats per minute (may consider using a heart rate decrease > 33.3% below baseline for older, more mature infants or those with a lower baseline heart rate);
      - c. No apnea < 20 seconds with valid, prolonged oxygen desaturations < 85% (excludes transient oxygen desaturation < 85% unless requiring supplemental oxygen to resolve);
      - d. No bradycardia < 70 beats per minute (unrelated to feedings);
      - e. No events requiring stimulation, artificial ventilation (bagging or intubation), or supplemental oxygen support to restore normal breathing, heart rate, and oxygenation;
    2. Significant events (as defined in I.A.1) continue to near-term or longer and all of the following:
      - a. Cardiorespiratory events appear, after evaluation for potential causes of apnea, to be associated with gastro-esophageal reflux;
      - b. Appropriate anti-reflux measures appear to resolve bradycardia or apnea (note: 5 days of observation may not be required in this case);
    3. The infant is having non-clinically significant, self-limited apnea spells (without color change or severe bradycardia) and all of the following:
      - a. Does not require stimulation to breathe again;
      - b. Will be discharged to home with a cardiorespiratory monitor (meeting criteria in section III);
  - B. If nasal cannula airflow is introduced to address apnea/bradycardia events, the infant should be free of clinically significant events for 5 days on the same level of support contemplated for the child's discharge;

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- C. Infant has not received caffeine citrate for at least 7 days prior to planned discharge;
- D. Infant has no other condition(s) requiring inpatient care;
- E. An assessment of cardiorespiratory stability in a car seat is recommended prior to discharge for infants born at < 37 weeks gestation or with other risk factors for respiratory compromise (e.g. neuromuscular, orthopedic problems);
- F. Parents or caregivers are encouraged to attend an infant CPR class.

Note: Cardiorespiratory events associated with feeding are not uncommon in premature infants due to incoordination of sucking, swallowing and breathing. The significance of these events needs to be assessed individually (e.g., severity of bradycardia, degree of desaturation, intervention(s) required, etc.). Episodes associated with oral feedings may not be the same as episodes recorded while sleeping. Parents should be instructed in the technique of identifying feeding problems and correcting them.

Note: Caffeine has a relatively long half-life and levels may be therapeutic in preterm infants for as long as 7 days or more after discontinuation. It is appropriate to observe an infant for 7 days after the withdrawal of caffeine, but since the discontinuation often occurs well before discharge, a “caffeine countdown” should not typically prolong the date of discharge;<sup>1, 6</sup>

#### **II. Discharge to home with cardiorespiratory monitoring**, all of the following:

- A. Infant has an ongoing medical condition that increases risk for apnea, airway obstruction, or hypoxemia. Such conditions include, but are not limited to, the following:
  - 1. Pharmacological treatment of respiratory immaturity or continued apnea at term or near-term gestation (apnea of prematurity or apnea of infancy);
  - 2. Need for home oxygen therapy (may require the need for home pulse oximetry monitoring);
  - 3. Tracheostomy or other risk of airway obstruction;
  - 4. Need for other technology associated with cardiorespiratory impairment such as mechanical ventilation;
- B. The infant has no other condition requiring inpatient care;
- C. An assessment has been completed to determine which type of home monitoring system is appropriate (pulse oximetry monitor vs. cardiorespiratory monitor);
- D. Parents or caregivers have been encouraged to room-in overnight in order to familiarize themselves with the baby’s habits on the monitor the evening before discharge home;
- E. Parents or caregivers have attended infant CPR training;
- F. An assessment of cardiorespiratory stability in a car seat is recommended prior to discharge for infants born at < 37 weeks gestation or with other risk factors for respiratory compromise (e.g. neuromuscular, orthopedic problems).

#### **Background**

Apnea of prematurity is a common condition of premature infants, often closely associated with bradycardia. The condition often results in prolonged lengths of stay in the neonatal intensive

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care units, as well as considerable parental anxiety. There is little objective evidence to recommend one

The Committee on Fetus and Newborn has defined apnea of prematurity as a cessation of breathing that lasts for at least 20 seconds or is of shorter duration but accompanied by bradycardia, cyanosis or pallor in an infant younger than 37 weeks' gestational age. The majority of preterm infants often cease to have apnea by 37 weeks' post-conceptual age, however infants born at 24 to 28 weeks gestation have frequently been found to have apnea that persists longer, often to 44 weeks post-conceptual age.

Episodes of bradycardia may be associated with oral feedings and also with apnea events that occur while sleeping. Bradycardia associated with feeding that resolves with interruption of feeding is generally not regarded as a reason to delay discharge. Pathologic bradycardia (not associated with feeding) may be treated with pharmacologic or non-pharmacologic therapy. Non-pharmacologic measures include supplemental oxygen, artificial ventilation and physical stimulation.

When considering pharmacologic treatment, the most common agent used today is caffeine citrate. Loading doses of 20mg/kg have been used based on current references. Because of the relatively long half-life of caffeine citrate, as much as 87 hours in infants of < 33 weeks' gestation, caffeine citrate has been ideal for once a day dosing in most babies. Also, because of the relatively large therapeutic index, the drug has been found to be relatively safe. Maintenance dosing begins 24 hours after the loading dose at 5-8 mg/kg daily. If there is no clinical improvement in the number of significant events, then a caffeine level may be obtained. The therapeutic trough serum concentration is 5 to 25 mg/L.<sup>6</sup>

Reviews, Revisions, and Approvals	Date	Approval Date
Policy Developed	02/19	

### References

1. Alere. Neonatal clinical management guideline. Eighth edition. American Academy of Pediatrics Committee on Fetus and Newborn. Hospital discharge of the high-risk neonate. *Pediatrics* 2008; 122:1119.3.
2. Darnall RA, Kattwinkel J, Nattie C, Robinson M. Margin of safety for discharge after apnea in preterm infants. *Pediatrics*. 1997; 100:795–801.
3. Eichenwald EC, Abimbola A, Stark AR. Apnea Frequency Persists Beyond Term Gestation in Infants Delivered, at 24 to 28 Weeks. *Pediatrics* 1997; 100:3 354-359.
4. Eichenwald EC and COMMITTEE ON FETUS AND NEWBORN, Apnea of prematurity, *Pediatrics*, originally published online December 1, 2015; DOI: 10.1542/peds.2015-3757
5. Loch SA, Srinivasan L, Escobar GJ. Epidemiology of Apnea and Bradycardia Resolution in Premature Infants. *Pediatrics*. 2011; 182(2):e366-e373.
6. Martin, Richard. Management of apnea of prematurity. In: UpToDate, Kim, ME (Ed), UpToDate, Waltham, MA. Accessed May 14, 2018.
7. National Institutes of Health, Consensus Development Conference on Infantile Apnea and Home Monitoring, Sept 29 to Oct 1, 1986. *Pediatrics*.1987; 79:292.