MASSACHUSETTS

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Medical Policy

Home Cardiorespiratory Monitoring

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Policy Number: 224

BCBSA Reference Number: 1.01.06
NCD/LCD: NA

Related Policies

- Diagnosis and Medical Management of Obstructive Sleep Apnea Syndrome, #293

Policy

Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity Medicare HMO Blue℠ and Medicare PPO Blue℠ Members

Home cardiorespiratory monitoring may be considered **MEDICALLY NECESSARY** when initiated in infants younger than 12 months of age in the following situations:

- Those who have experienced a brief resolved unexplained event (previously known as *apparent life-threatening event)* and are not considered lower risk following clinical evaluation; OR
- Those with tracheostomies or anatomic abnormalities that make them vulnerable to airway compromise; OR
- Those with neurologic or metabolic disorders affecting respiratory control, including central apnea and apnea of prematurity; OR
- Those with chronic lung disease (ie, bronchopulmonary dysplasia.

2016 Clinical Practice Guidelines from the American Academy of Pediatrics (Tieder et al, 2016) defined brief resolved unexplained event (BRUE; formerly *apparent life threatening event* [ALTE]) as: “An event occurring in an infant younger than 1 year when the observer reports a sudden, brief, and now resolved episode of ≥1 of the following:

1. cyanosis or pallor;
2. absent, decreased, or irregular breathing;
3. marked change in tone (hyper- or hypotonia); and
4. altered level of responsiveness.”

The diagnosis of bronchopulmonary dysplasia (BPD) is dependent on gestational age, and is outlined in Table PG1 based on the 2001 consensus definition from the U.S. National Institute of Child Health and Human Development (Jobe et al, 2001)

Table PG1: Diagnosis of Bronchopulmonary Dysplasia

Diagnosis		Gestational Age
	<32 wk	≥32 wk
Time point of assessment	36 wk PMA or discharge to home, whichever comes first	>28 d but <56 d postnatal age or discharge to home, whichever comes first
	36 wk PMA or discharge to home, whichever comes first	
Mild BPD	Breathing room air at 36 wk PMA or discharge, whichever comes first	Breathing room air by 56 d postnatal age or discharge, whichever comes first
Moderate BPD	Need for <30% oxygen at 36 wk PMA or discharge, whichever comes first	Need for <30% oxygen at 56 d postnatal age or discharge, whichever comes first
Severe BPD	Need for ≥ 30% oxygen and/or positive pressure at 36 wk PMA or discharge, whichever comes first	Need for ≥30% oxygen and/or positive pressure at 56 d postnatal age or discharge, whichever comes first

Home cardiorespiratory monitoring is considered **NOT MEDICALLY NECESSARY** in infants with any siblings with a history of sudden infant death syndrome, but without at least one of the indications cited.

Home cardiorespiratory monitoring in all other conditions, including but not limited to the diagnosis of obstructive sleep apnea, is considered **INVESTIGATIONAL**.

Prior Authorization Information

Pre-service approval is required for all inpatient services for all products.
See below for situations where prior authorization may be required or may not be required for outpatient services.
Yes indicates that prior authorization is required.
No indicates that prior authorization is not required.
N/A indicates that this service is primarily performed in an inpatient setting.

	Outpatient
Commercial Managed Care (HMO and POS)	No
Commercial PPO and Indemnity	No
Medicare HMO Blue℠	No
Medicare PPO Blue℠	No

CPT Codes / HCPCS Codes / ICD Codes

Inclusion or exclusion of a code does not constitute or imply member coverage or provider reimbursement. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage as it applies to an individual member.

Providers should report all services using the most up-to-date industry-standard procedure, revenue, and diagnosis codes, including modifiers where applicable.

The following codes are included below for informational purposes only; this is not an all-inclusive list.

The above medical necessity criteria MUST be met for the following codes to be covered for Commercial Members: Managed Care (HMO and POS), PPO, Indemnity, Medicare HMO Blue and Medicare PPO Blue:

CPT Codes

CPT codes:	Code Description
94772	Circadian respiratory pattern recording (pediatric pneumogram), 12–24 hour continuous recording, infant
94774	Pediatric home apnea monitoring event recording including respiratory rate, pattern and heart rate per 30-day period of time; includes monitor attachment, download of data, physician review, interpretation, and preparation of a report.
94775	Pediatric home apnea monitoring event recording including respiratory rate, pattern and heart rate per 30-day period of time; monitor attachment only (includes hook-up, initiation of recording and disconnection)
94776	Pediatric home apnea monitoring event recording including respiratory rate, pattern and heart rate per 30-day period of time; monitoring, download of information, receipt of transmission(s) and analyses by computer only
94777	Pediatric home apnea monitoring event recording including respiratory rate, pattern and heart rate per 30-day period of time; physician review, interpretation and preparation of report only

HCPCS Codes

HCPCS codes:	Code Description
A4556	Electrodes (e.g., apnea monitor), per pair
A4557	Lead wires (e.g., apnea monitor), per pair
E0618	Apnea monitor, without recording feature
E0619	Apnea monitor, with recording feature

Description

HOME CARDIORESPIRATORY MONITORING FOR APNEA MONITORING

Home cardiorespiratory monitors track respiratory effort and heart rate, and have been used to monitor central apnea of prematurity in newly discharged at-risk or high-risk premature infants (infants are at increased risk of cardiorespiratory events until 43 weeks of postconceptual age) and in other infants at risk of apnea. An alarm will sound if there is respiratory cessation (central apnea) beyond a predetermined time limit (eg, 20 seconds) or if the heart rate falls below a preset rate (bradycardia) to notify the parent that intervention (stimulation, mouth-to-mouth resuscitation, cardiac compressions) is required. Unless an oximeter is added to the 2-channel devices, home apnea monitors are not effective for detecting obstructive sleep apneas. False alarms due to movement artifact are common with pulse oximeters, and these devices are not intended for the diagnosis of sleep-disordered breathing in a child.

HOME MONITORING FOR SUDDEN INFANT DEATH SYNDROME PREVENTION

Sudden infant death syndrome (SIDS) refers to the sudden death of an infant younger than 1 year of age; the circumstances are unexplained after a thorough investigation that includes autopsy, examination of the death scene, and review of the family history. As a means to decrease the incidence of SIDS, in the 1970s, cardiorespiratory monitoring was suggested. However, clinical studies have failed to establish that the use of home monitoring reduces the incidence of SIDS. In 2011, the American Academy of Pediatrics (AAP) reiterated its recommendations that home monitoring should not be used as a strategy to prevent SIDS.[1] Instead, AAP recommended that proven practices should be promoted to reduce the incidence of SIDS, which include supine sleeping, use of a firm bed surface, routine immunizations, breast-feeding, and avoidance of exposure to tobacco smoke, alcohol, and illegal drugs. One of these proven practices (supine sleeping) has been promoted in the “Safe to Sleep” campaign (formerly called the “Back to Sleep” campaign) initiated in 1994 by AAP, as well as by the National Institute of Child Health and Development and the Maternal Child Health Bureau of Human Resources and Services Administration. The campaign is a national effort to educate health care professionals, parents, and caregivers about the significance of placing infants in the supine sleeping position to reduce SIDS.[2] The incidence of SIDS in the United

States decreased dramatically between 1992 and 2001, especially in the years after the first supine sleep position recommendations were issued.

OTHER HOME MONITORING INDICATIONS

Home cardiorespiratory monitors are used for reasons other than preventing SIDS. They include monitoring infants at high risk of respiratory compromise due to chronic ventilator or oxygen requirements, tracheostomies or anatomic abnormalities that make them vulnerable to airway compromise, and central apnea, including apnea, bradycardia, and oxygen desaturations associated with prematurity. Former premature infants with bronchopulmonary dysplasia[3] (ie, neonatal chronic lung disease), which may lead to chronic oxygen requirement, may have indications for home cardiorespiratory monitoring.

An additional potential use of home cardiorespiratory monitors is monitoring infants who have had acute events associated with apnea, color change, or loss of tone. Originally, these events were referred to as *apparent life-threatening events* (ALTEs). ALTE was defined by a 1986 National Institutes of Health Conference as "an episode that is frightening to the observer and that is characterized by some combination of apnea (central or occasionally obstructive), color change (usually cyanotic or pallid but occasionally erythematous or plethoric), marked change in muscle tone (usually marked limpness), choking, or gagging. In some cases, the observer fears that the infant has died." In 2016, AAP issued updated clinical practice guideline, which proposed a replacement of the term ALTE with the term *brief resolved unexplained event* (BRUE), which is defined as follows[4]:

"An event occurring in an infant younger than 1 year when the observer reports a sudden, brief, and now resolved episode of ≥1 of the following: (1) cyanosis or pallor; (2) absent, decreased, or irregular breathing; (3) marked change in tone (hyper- or hypotonia); and (4) altered level of responsiveness. A BRUE is diagnosed only when there is no explanation for a qualifying event after conducting an appropriate history and physical examination."

Summary

Home cardiorespiratory monitors track respiratory effort and heart rate to detect episodes of apnea. They have been used for a variety of indications that may be associated with increased risk of respiratory compromise.

For individuals who have risk of respiratory failure in infancy who receive home cardiorespiratory monitoring, the evidence includes primarily observational studies. Relevant outcomes are overall survival and morbid events. For prevention of sudden infant death syndrome, the available published literature, primarily from the CHIME study, does not support the use of monitoring. For other respiratory conditions, there is also a lack of published evidence; however, national guidelines published by the American Academy of Pediatrics (AAP) have identified specific groups of infants who might benefit from home monitoring because of other factors that increase the risk of sudden death (eg, tracheostomies, chronic lung disease). These conditions identified by AAP as benefiting from home cardiorespiratory monitoring may therefore be considered medically necessary.

Policy History

Date	Action
3/2017	BCBSA National medical policy review. Title changed. Policy statements clarified to add that monitoring should be initiated in infants under 12 months; term "apparent life threatening event" replaced with "brief resolved unexplained event. 3/1/2017.
11/2015	Added coding language.
5/2015	New references added from BCBSA National medical policy.
5/2014	BCBSA National medical policy review. Policy statement clarified. Effective 5/1/2014.
5/2013	New references from BCBSA National medical policy.
11/2011-4/2012	Medical policy ICD 10 remediation: Formatting, editing and coding updates. No changes to policy statements.

4/2011	Reviewed - Medical Policy Group - Cardiology and Pulmonology. No changes to policy statements.
6/2009	BCBSA National medical policy review. No changes to policy statements.
3/2009	Reviewed - Medical Policy Group - Allergy and ENT/Otolaryngology. No changes to policy statements.
3/2008	Reviewed - Medical Policy Group - Allergy and ENT/Otolaryngology. No changes to policy statements.

Information Pertaining to All Blue Cross Blue Shield Medical Policies

Click on any of the following terms to access the relevant information:
Medical Policy Terms of Use
Managed Care Guidelines
Indemnity/PPO Guidelines
Clinical Exception Process
Medical Technology Assessment Guidelines

References

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