| PHP_1.01.06 | Home Cardiorespiratory Monitoring | | |
|---|---|---|---|
| **Original Policy Date:** | December 1, 2025 | **Effective Date:** | June 1, 2026 |
| **Section:** | 1.0 Durable Medical Equipment | **Page:** | Page 1 of 13 |

## State Guidelines

As of the publication of this policy, there are no applicable Medi-Cal guidelines (Provider Manual or All Plan Letter). Please refer to the Policy Statement section below.

## Policy Statement

In the absence of any State Guidelines, please refer to the criteria below.

I. Home cardiorespiratory monitoring may be considered **medically necessary** when initiated in infants younger than 12 months of age in **any** of the following situations (see Policy Guidelines):
   A. Those with tracheostomies or anatomic abnormalities that make them vulnerable to airway compromise
   B. Those with neurologic or metabolic disorders affecting respiratory control, including central apnea and apnea of prematurity
   C. Those with chronic lung disease (i.e., bronchopulmonary dysplasia; see Policy Guidelines)

II. Home cardiorespiratory monitoring is considered **investigational** when used as a strategy to reduce the risk of Sudden Infant Death Syndrome (SIDS).

III. Home cardiorespiratory monitoring is considered **investigational** when used for cardiopulmonary evaluation in lower-risk infants following a brief resolved unexplained event (BRUE), which was previously known as an apparent life threatening event (ALTE) (see Policy Guidelines for further discussion of BRUE risk).

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

## Policy Guidelines

This policy does not address the use of an unattended (unsupervised) home sleep study for the diagnosis and management of obstructive sleep apnea.

This policy applies only to the use of U.S. Food and Drug Administration (FDA) approved home monitoring systems. Various commercially available infant monitoring devices are marketed to parents for monitoring infants' sleep, breathing, and behavior. Although some of the devices include pulse oximetry, they are not sold as medical devices and are therefore not cleared for marketing by the FDA. Home monitors should be equipped with an event recorder.

### Age Limits

Upon initiation of home cardiorespiratory monitoring in infants, the physician should establish a review of the problem, a plan of care, and a specific plan for periodic review and termination. Clear documentation of the reasons for continuing monitoring is necessary should monitoring beyond 43 weeks of postmenstrual age be recommended. Home cardiorespiratory monitoring for apnea is

generally not considered appropriate for infants older than 1 year of age. There may be a subset of young children who require cardiorespiratory monitoring beyond 1 year of age, such as certain individuals with home noninvasive or invasive ventilator use or chronic lung disease.

### Bronchopulmonary Dysplasia

The diagnosis of bronchopulmonary dysplasia (BPD) depends 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 & Bancalari, 2001).

**Table PG1. Diagnosis of Bronchopulmonary Dysplasia**

| Diagnosis | Gestational Age | |
|---|---|---|
| | <32 Weeks | ≥32 Weeks |
| Time point of assessment | 36 weeks PMA or discharge to home, whichever comes first | >28 days but <56 days postnatal age or discharge to home, whichever comes first |
| | Treatment with oxygen >21% for at least 28 days plus | |
| Mild BPD | Breathing room air at 36 weeks PMA or discharge, whichever comes first | Breathing room air by 56 days postnatal age or discharge, whichever comes first |
| Moderate BPD | Need for <30% oxygen at 36 weeks PMA or discharge, whichever comes first | Need for <30% oxygen at 56 days postnatal age or discharge, whichever comes first |
| Severe BPD | Need for ≥30% oxygen and/or positive pressure at 36 weeks postnatal age or discharge, whichever comes first | Need for ≥30% oxygen and/or positive pressure at 56 days postnatal age or discharge, whichever comes first |

Adapted from Jobe & Bancalari (2001).
BPD: bronchopulmonary dysplasia; PMA: postmenstrual age.

### Brief Resolved Unexplained Event Risk Assessment: Lower-versus-Higher-Risk of a Repeat Event or a Serious Underlying Disorder

The 2016 clinical practice guideline from the American Academy of Pediatrics reported by Tieder et al (2016) on BRUE and evaluation of lower-risk infants identified the following patient factors as determining a lower risk:

- Age >60 days
- Prematurity: gestational age ≥32 weeks and postconceptional age ≥45 weeks
- First BRUE: no previous BRUE ever and not occurring in clusters
- Duration of event <1 minute
- No cardiopulmonary resuscitation (CPR) required by trained medical provider
- No concerning historical features as detailed in Table 2 of the 2016 AAP guideline (e.g., considerations for possible child abuse, history of the event, recent history, past medical history, family history, environmental history, social history)
- No concerning physical examination findings as detailed in Table 3 of the 2016 AAP guideline (e.g., general appearance, growth variables, vital signs, skin, head, eyes, ears, nose and mouth, neck, chest, heart, abdomen, genitalia, extremities, neurologic)

### Higher Risk

The guidelines committee was not able to establish a definition of higher risk BRUE. "Outcomes data from ALTE studies in the heterogenous high risk population are unclear and preclude the derivation of evidence based recommendations regarding management", which would require further research. However no such trials are listed in clinicaltrials.gov.

### Coding

See the Codes table for details.

## Description

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.

### Summary of Evidence

For individuals with risk of respiratory failure in infancy who receive home cardiorespiratory monitoring for prevention of sudden infant death syndrome (SIDS), the evidence includes a systematic review and large epidemiological studies, including the CHIME study. Relevant outcomes are overall survival and morbid events. The systematic review and epidemiological studies consistently found that the use of home cardiorespiratory monitors did not decrease the incidence of SIDS. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

For individuals with risk of respiratory failure in infancy who receive home cardiorespiratory monitoring for other respiratory conditions, the evidence includes a systematic review and several observational cohort studies. Relevant outcomes are overall survival and morbid events. For lower-risk infants following a brief resolved unexplained event (BRUE), which was previously known as an apparent life threatening event (ALTE), the systematic review and observational cohort studies found no significant differences between infants with and without respiratory abnormalities in the frequency of respiratory pauses and bradycardia identified by home cardiorespiratory monitors. There is a lack of published evidence for other respiratory conditions, which is likely due to small numbers of patients and the difficulty of enrolling infants with respiratory conditions. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

### Additional Information

Clinical input obtained in 2017 and national guidelines published by the American Academy of Pediatrics have identified specific groups of infants who might benefit from home monitoring because of other factors that increase the risk of sudden death (e.g. tracheostomies, chronic lung disease). These conditions identified by the Academy as benefiting from home cardiorespiratory monitoring may, therefore, be considered medically necessary.

## Related Policies

- N/A

## Benefit Application

Blue Shield of California Promise Health Plan is contracted with L.A. Care Health Plan for Los Angeles County and the Department of Health Care Services for San Diego County to provide Medi-Cal health benefits to its Medi-Cal recipients. In order to provide the best health care services and practices, Blue Shield of California Promise Health Plan has an extensive network of Medi-Cal primary care providers and specialists. Recognizing the rich diversity of its membership, our providers are given training and educational materials to assist in understanding the health needs of their patients as it could be affected by a member's cultural heritage.

The benefit designs associated with the Blue Shield of California Promise Medi-Cal plans are described in the Member Handbook (also called Evidence of Coverage).

## Regulatory Status

A number of infant apnea/cardiorespiratory monitors have been cleared for marketing by the U.S. Food and Drug Administration (FDA) through the 510(k) process. This includes the SmartMonitor 2 Apnea Monitor (Circadiance, formerly Philips Respironics), which is intended for continuous monitoring of respiration, heart rate, and pulse oximetry of infant patients in a hospital or home environment. FDA product code: NPF and DQA.

## Health Equity Statement

Blue Shield of California Promise Health Plan's mission is to transform its health care delivery system into one that is worthy of families and friends. Blue Shield of California Promise Health Plan seeks to advance health equity in support of achieving Blue Shield of California Promise Health Plan's mission.

Blue Shield of California Promise Health Plan ensures all Covered Services are available and accessible to all members regardless of sex, race, color, religion, ancestry, national origin, ethnic group identification, age, mental disability, physical disability, medical condition, genetic information, marital status, gender, gender identity, or sexual orientation, or identification with any other persons or groups defined in Penal Code section 422.56, and that all Covered Services are provided in a culturally and linguistically appropriate manner.

## Rationale

### Background

### Home Cardiorespiratory 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 sounds if there is respiratory cessation (central apnea) beyond a predetermined time limit (e.g., 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.

### Sudden Infant Death Syndrome

The American Academy of Pediatrics (AAP) defines Sudden Unexpected Infant Death (SUID), also known as Sudden Unexpected Death In Infancy (SUDI) as "any sudden and unexpected death, whether explained or unexplained" that occurs during infancy. Sudden Infant Death Syndrome (SIDS) is a subcategory of SUID/SUDI, which is defined as the sudden death of an infant younger than 1 year of age whereby 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. The American Academy of Pediatrics (AAP) recommends 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 U.S. decreased dramatically between 1992 and 2001, especially in the years after the first supine sleep position recommendations were issued.

### Brief Resolved Unexplained Event

The 2016 AAP clinical practice guideline published by Tieder et al[3] 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:

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

### Infants With Special Health Care Needs or Dependence on Home Technological Support

According to AAP's 2008 Policy Statement on Hospital Discharge of the High-Risk Neonate reported by Stark et al (Reaffirmed in 2018),[4] there has been recent increases in discharge of infants dependent on some form of supportive technology due to special health care needs or unresolved medical problems. Conditions that may necessitate use of technological support include apnea of prematurity and bronchopulmonary dysplasia for preterm infants, and upper airway anomalies, central nervous system disorders, and neuromuscular disorders for term infants.[5] For example, home ventilation can be required for infants with tracheostomy for upper airway abnormalities or who cannot be weaned from assisted ventilation prior to discharge. Additionally, to avoid the potential risks of growth failure and cor pulmonale resulting from marginal oxygenation, discharge with home oxygen therapy has been used for infants with bronchopulmonary dysplasia. In both of these cases, home cardiorespiratory monitoring is recommended to accompany the supportive technology for use in detecting airway obstructions or dislodging of the oxygen.

### Literature Review

Evidence reviews assess the clinical evidence to determine whether the use of technology improves the net health outcome. Broadly defined, health outcomes are the length of life, quality of life, and ability to function including benefits and harms. Every clinical condition has specific outcomes that are important to patients and managing the course of that condition. Validated outcome measures are necessary to ascertain whether a condition improves or worsens; and whether the magnitude of that change is clinically significant. The net health outcome is a balance of benefits and harms.

To assess whether the evidence is sufficient to draw conclusions about the net health outcome of technology, 2 domains are examined: the relevance, and quality and credibility. To be relevant, studies must represent 1 or more intended clinical use of the technology in the intended population and compare an effective and appropriate alternative at a comparable intensity. For some conditions, the alternative will be supportive care or surveillance. The quality and credibility of the evidence depend on study design and conduct, minimizing bias and confounding that can generate incorrect findings. The randomized controlled trial (RCT) is preferred to assess efficacy; however, in some circumstances, nonrandomized studies may be adequate. Randomized controlled trials are rarely large enough or long enough to capture less common adverse events and long-term effects. Other types of studies can be used for these purposes and to assess generalizability to broader clinical populations and settings of clinical practice.

### Home Cardiorespiratory Monitoring for Prevention of Sudden Infant Death Syndrome

#### Clinical Context and Therapy Purpose

The purpose of home cardiorespiratory monitoring is to provide a treatment option that is an alternative to or an improvement on existing therapies, such as standard care without monitoring, in individuals with risk of respiratory failure in infancy.

The following PICO was used to select literature to inform this review.

*Populations*
The relevant population of interest is individuals with risk of respiratory failure in infancy.

*Interventions*
The therapy being considered is home cardiorespiratory monitoring for sudden infant death syndrome (SIDS) prevention.

*Comparators*
Comparators of interest include standard care without monitoring. Standard care includes blood pressure support, involuntary nervous system blockers, and antiarrhythmics.

*Outcomes*
The general outcomes of interest are overall survival and morbid events.

**Study Selection Criteria**
Methodologically credible studies were selected using the following principles:

- To assess efficacy outcomes, comparative controlled prospective trials were sought, with a preference for RCTs;
- In the absence of such trials, comparative observational studies were sought, with a preference for prospective studies.
- To assess long-term outcomes and adverse events, single-arm studies that capture longer periods of follow-up and/or larger populations were sought.
- Studies with duplicative or overlapping populations were excluded.

**Review of Evidence**
**Systematic Reviews**
In a 2022 literature review that supported the American Academy of Pediatrics' (AAP) 2022 Policy Statement on SIDS, Moon et al (2022) identified 4 large epidemiological studies conducted between 1986 and 2001 which found that the use of home cardiorespiratory monitors did not decrease the incidence of SIDS.[6] Among those 4 studies is the Collaborative Home Infant Monitoring Evaluation (CHIME) study, a longitudinal cohort study conducted from 1994 to 1998, which was designed to address whether severe episodes of apnea and bradycardia occur more commonly in infants considered at higher risk for SIDS.[7] The study included 1079 infants, both healthy and at high-risk for SIDS based on a history of an apparent life-threatening event (ALTE), siblings with SIDS, and preterm gestation, who were observed with home cardiorespiratory monitoring for the first 6 months after birth. Monitor alarms were set off frequently across all risk groups, occurring in 41% of all subjects. So-called "extreme" events occurred in all groups but preterm infants were at higher risk until 43 weeks postconceptual age. The authors concluded that episodes of prolonged apnea or bradycardia primarily occurred before the developmental age when most SIDS deaths occurred. In a subsequent multivariate logistic regression analysis of the CHIME study data, Hoppenbrouwers et al (2008) found that extreme events were not significantly associated with any known SIDS risk factors.[7]

Findings from a prior systematic review of the literature on the impact of home monitoring (apnea monitoring, respiratory monitoring, or cardiorespiratory monitoring) published by Strehle et al (2012)[8] are consistent with the 2022 AAP literature review.[6] The systematic review by Strehle et al (2012) searched the literature through June 2010 and included 1 pilot study that assessed the feasibility of an RCT to evaluate home monitoring (level I evidence) and 10 unique case series (level III evidence). The body of case series evidence included the CHIME study. Reviewers concluded that there was a lack of high-level evidence that home monitoring would be beneficial in preventing SIDS.

### Section Summary: Home Cardiorespiratory Monitoring for Prevention of Sudden Infant Death Syndrome (SIDS)

Evidence for the use of home cardiorespiratory monitoring for prevention of SIDS consists of a systematic review and large epidemiological studies, including the CHIME study. These studies consistently found that the use of home cardiorespiratory monitors did not decrease the incidence of SIDS.

### Home Cardiorespiratory Monitoring for Other Respiratory Conditions

### Clinical Context and Therapy Purpose

The purpose of home cardiorespiratory monitoring is to provide a treatment option that is an alternative to or an improvement on existing therapies, such as standard care without monitoring, in individuals with risk of respiratory failure in infancy.

The following PICO was used to select literature to inform this review.

#### *Populations*

The relevant population of interest is individuals with various respiratory conditions and who are at risk of respiratory failure in infancy.

#### *Interventions*

The therapy being considered is home cardiorespiratory monitoring for other respiratory conditions.

#### *Comparators*

Comparators of interest include standard care without monitoring. Treatment includes blood pressure support, involuntary nervous system blockers, and antiarrhythmics.

#### *Outcomes*

The general outcomes of interest are overall survival and morbid events.

### Study Selection Criteria

Methodologically credible studies were selected using the following principles:

- To assess efficacy outcomes, comparative controlled prospective trials were sought, with a preference for RCTs;
- In the absence of such trials, comparative observational studies were sought, with a preference for prospective studies.
- To assess long-term outcomes and adverse events, single-arm studies that capture longer periods of follow-up and/or larger populations were sought.
- Studies with duplicative or overlapping populations were excluded.

### Review of Evidence

### Brief Resolved Unexplained Event

### Systematic Reviews

In a 2016 systematic review that supported the AAP's 2016 Clinical Practice Guideline on BRUE, Tieder et al (2016) assessed studies relevant to use of home cardiorespiratory monitoring in infants presenting with a lower-risk BRUE.[3] Based on searches of numerous bibliographic databases through December 31, 2014, this systematic review identified several studies published between 1986 and 2008 demonstrating that the frequency of respiratory pauses and bradycardia identified by home cardiorespiratory monitors is similar in infants with and without respiratory abnormalities. In addition, the review noted that other studies have shown no improvements in outcomes or SIDS prevention with home apnea monitors, and "a lack of correlation between ALTEs [now referred to as BRUE] and SIDS."

### Observational Studies

In addition to the studies summarized in the 2016 AAP systematic review, an observational cohort study by Mittal et al (2013)[9] reported on 4-week follow-up outcomes for 300 infants seen in an emergency department with a diagnosis of apparent life threatening event (ALTE). Of the 228 patients admitted, 110 (48.2%) had in-hospital pneumography (101 with esophageal pH monitoring, 9 without esophageal pH monitoring). Of those with pneumography, 33 patients had apnea, with or without evidence of gastroesophageal reflux. There was no significant association between positive findings on pneumography and recurrent ALTE in the 4 weeks after hospitalization. Study limitations included nonstandardized evaluation of patients with ALTE and whether results of an in-hospital pneumography study translate to the home setting.

### Infants With Special Health Care Needs or Dependence on Home Technological Support

#### Case Series

Home apnea monitors are sometimes used in neonates with apnea, bradycardia, and oxygen desaturation events. Apnea of prematurity is extremely common in preterm infants but may also occur in late preterm infants. In many cases, infants with these events are observed in the hospital until a "safe" period without an event occurs, but some infants are discharged to home with a home monitor. For example, in a 3-center, 5-year case series reporting on the evaluation and management of apnea, bradycardia, and oxygen desaturation events in infants born at 34 or more weeks of gestational age, Veit et al (2016) reported that 4.5% of infants were discharged to home with a monitor.[10] However, there is a lack of evidence on the effectiveness of home cardiorespiratory monitors in these conditions. For many conditions, trials would be difficult to perform due to small numbers of patients and logistic difficulties for these conditions that would make trial enrollment difficult. As a result, the best available recommendations for treatment currently rely on expert consensus.

### Section Summary: Use of Home Cardiorespiratory Monitors in Other Respiratory Conditions

Evidence for the use of home cardiorespiratory monitoring for lower-risk BRUE consists of a systematic review and several observational cohort studies. These studies found no significant differences between infants with and without respiratory abnormalities in the frequency of respiratory pauses and bradycardia identified by home cardiorespiratory monitors. There is a lack of published evidence for other respiratory conditions, which is likely due to small numbers of patients and the difficulty of enrolling infants with respiratory conditions.

## Supplemental Information

The purpose of the following information is to provide reference material. Inclusion does not imply endorsement or alignment with the evidence review conclusions.

### Clinical Input From Physician Specialty Societies and Academic Medical Centers

While the various physician specialty societies and academic medical centers may collaborate with and make recommendations during this process, through the provision of appropriate reviewers, input received does not represent an endorsement or position statement by the physician specialty societies or academic medical centers, unless otherwise noted.

In response to requests, input was received from 2 specialty societies and 2 academic medical centers while this policy was under review in 2017. There was general agreement with the existing medically necessary statements, including those that addressed use for tracheostomies or anatomic abnormalities that make them vulnerable to airway compromise; those with neurologic or metabolic disorders affecting respiratory control, including central apnea and apnea of prematurity; or those with chronic lung disease (i.e., bronchopulmonary dysplasia).

### Practice Guidelines and Position Statements

Guidelines or position statements will be considered for inclusion in 'Supplemental Information' if they were issued by, or jointly by, a U.S. professional society, an international society with U.S.

representation, or National Institute for Health and Care Excellence (NICE). Priority will be given to guidelines that are informed by a systematic review, include strength of evidence ratings, and include a description of management of conflict of interest.

### American Academy of Pediatrics

### Sudden Infant Death Syndrome

In 2016, the American Academy of Pediatrics (AAP) (reported by Moon et al) issued a policy statement on sudden infant death syndrome (SIDS) and other sleep-related infant deaths,[11] which addressed the use of home cardiorespiratory monitors. Based on a literature review that identified evidence from 4 large epidemiological studies conducted between 1986-2001, this Policy Statement issued an A-level recommendation against the use of home cardiorespiratory monitoring as a SIDS-prevention strategy. The recommendation stated "Do not use home cardiorespiratory monitors as a strategy to reduce the risk of SIDS." The A-level recommendation indicates that "there is good-quality, patient-oriented evidence" based on the strength-of-recommendation taxonomy. Conflict of interest management was described as including authors filing conflict of interest statements with the AAP and resolution of any conflicts through a process approved by the Board of Directors. A 2022 update to the AAP policy statement included no additional evidence regarding cardiorespiratory monitoring and maintained an A-level recommendation against the use of home cardiorespiratory monitoring as a SIDS-prevention strategy.[1]

### Brief Resolved Unexplained Events

In 2016, the AAP issued clinical practice guidelines on brief resolved unexplained events (BRUE), which addressed the use of home cardiorespiratory monitoring for low-risk infants.[3,12] This clinical practice guideline was based on a systematic review with searches through December 31, 2014 and the evidence and strength of the recommendations were formally rated using a well-described approach. As with the AAP SIDS Policy Statement described above, conflict of interest management was described as including authors filing conflict of interest statements with the AAP and resolution of any conflicts through a process approved by the Board of Directors. The recommendation stated "Clinicians should not initiate home cardiorespiratory monitoring for cardiopulmonary evaluation." The evidence quality was rated as B, which indicates it was based on "Trials or diagnostic studies with minor limitations; consistent findings from multiple observational studies." The strength of the recommendation was moderate, indicating that "A particular action is favored because anticipated benefits clearly exceed harms (or vice versa) and the quality of evidence is good but not excellent (or is unobtainable). Clinicians would be prudent to follow a moderate recommendation but should remain alert to new information and sensitive to patient preferences."

### Infants with Special Health Care Needs or Dependence on Home Technological Support

The AAP (2008, reaffirmed in 2018) also published a Policy Statement by Stark et al on the hospital discharge of high-risk neonates that addressed the role of home apnea monitors for preterm and otherwise high-risk infants.[4] This Policy Statement was not clearly based on a systematic review, strength of the policy statements was not formally rated, and clear documentation of conflict of interest management is lacking. Relevant statements include:

- **Hospitalized infants still at risk of apnea:** "Home monitors are rarely indicated for detection of apnea solely because of immature respiratory control, in part because infants with immature respiratory control, in general, are still hospitalized until they are no longer at risk of apnea of prematurity. Use of a home monitor does not preclude the need for demonstrated maturity of respiratory control before discharge and should not be used to justify discharge of infants who are still at risk of apnea. Home monitors are not indicated for prevention of sudden infant death syndrome (SIDS) in preterm infants, although preterm infants are at increased risk of SIDS."
- **Bronchopulmonary dysplasia:** "Home oxygen therapy for infants with bronchopulmonary dysplasia has been used as a means of achieving earlier hospital discharge while avoiding the risks of growth failure and cor pulmonale resulting from marginal oxygenation." "Infants who are discharged on supplemental oxygen are often also discharged on a

cardiorespiratory monitor or pulse oximeter in case the oxygen should become dislodged or the supply depleted."

- **Tracheostomy: "**Tracheostomy is sometimes required for neonates with upper airway abnormalities or occasionally for infants who cannot be weaned from assisted ventilation. Good parental teaching and coordinated multidisciplinary follow-up care are essential for these infants. Infants who require home ventilation should also be on a cardiorespiratory monitor in case the airway should become obstructed, but the home ventilator should also have a disconnect alarm to alert caregivers to ventilator disconnection. Home ventilation requires qualified personnel to provide bedside care; in most cases, home-nursing support will be needed for at least part of the day.**"**

### U.S. Preventive Services Task Force Recommendations

Not applicable.

### Medicare National Coverage

There is no national coverage determination. In the absence of a national coverage determination, coverage decisions are left to the discretion of local Medicare carriers.

### Ongoing and Unpublished Clinical Trials

A search of ClinicalTrials.gov in April 202 5 did not identify any ongoing or unpublished trials that would likely influence this review.

## References

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7. Hoppenbrouwers T, Hodgman JE, Ramanathan A, et al. Extreme and conventional cardiorespiratory events and epidemiologic risk factors for SIDS. J Pediatr. May 2008; 152(5): 636-41. PMID 18410765
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9. Mittal MK, Donda K, Baren JM. Role of pneumography and esophageal pH monitoring in the evaluation of infants with apparent life-threatening event: a prospective observational study. Clin Pediatr (Phila). Apr 2013; 52(4): 338-43. PMID 23393308
10. Veit L, Amberson M, Freiberger C, et al. Diagnostic Evaluation and Home Monitor Use in Late Preterm to Term Infants With Apnea, Bradycardia, and Desaturations. Clin Pediatr (Phila). Nov 2016; 55(13): 1210-1218. PMID 26957524

11. Moon RY, Darnall RA, Feldman-Winter L, et al. SIDS and Other Sleep-Related Infant Deaths: Evidence Base for 2016 Updated Recommendations for a Safe Infant Sleeping Environment. Pediatrics. Nov 2016; 138(5). PMID 27940805
12. AAP Publications Reaffirmed and Retired. Pediatrics. August 1 2012;130(2):e467-e468.

## Documentation for Clinical Review

**Please provide the following documentation:**

- History and physical and/or consultation notes including:
  - Discharge summary or progress notes including a plan of care, and specific plan for periodic review and termination of the apnea monitor
- Prescription for home apnea monitor

**Post Service (in addition to the above, please include the following):**

- Results/reports of tests performed

## Coding

*The list of codes in this Medical Policy is intended as a general reference and may not cover all codes. Inclusion or exclusion of a code(s) does not constitute or imply member coverage or provider reimbursement policy.*

| Type | Code | Description |
|---|---|---|
| CPT® | 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, review, interpretation, and preparation of a report by a physician or other qualified health care professional |
| | 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; review, interpretation and preparation of report only by a physician or other qualified health care professional |
| HCPCS | 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 |

## Policy History

This section provides a chronological history of the activities, updates and changes that have occurred with this Medical Policy.

| Effective Date | Action |
|---|---|
| 12/01/2025 | New policy. |
| 06/01/2026 | Administrative update. Definitions of Decision Determinations section updated. |

## Definitions of Decision Determinations

**Healthcare Services**: For the purpose of this Medical Policy, Healthcare Services means procedures, treatments, supplies, devices, and equipment.

**Medically Necessary** or **Medical Necessity** means reasonable and necessary services to protect life, to prevent significant illness or significant disability, or alleviate severe pain through the diagnosis or treatment of disease, illness, or injury, as required under W&I section 14059.5(a) and 22 CCR section 51303(a). Medically Necessary services must include services necessary to achieve age-appropriate growth and development, and attain, maintain, or regain functional capacity.

For Members less than 21 years of age, a service is Medically Necessary if it meets the Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) standard of Medical Necessity set forth in 42 USC section 1396d(r)(5), as required by W&I sections 14059.5(b) and 14132(v). Without limitation, Medically Necessary services for Members less than 21 years of age include all services necessary to achieve or maintain age-appropriate growth and development, attain, regain or maintain functional capacity, or improve, support, or maintain the Member's current health condition. Contractor must determine Medical Necessity on a case-by-case basis, taking into account the individual needs of the Child.

### Criteria Determining Experimental/Investigational Status

Below is an excerpt of the language taken from California Children's Services Numbered Letter 05-1020.*

*Department of Healthcare Services Numbered Letter 05-1020. Accessed April 21, 2026, from https://www.dhcs.ca.gov/services/ccs/Documents/CCS-NL-05-1020-Experimental-and-Investigational-Services.pdf

### Policy

A. The California Children's Services (CCS) Program and the Genetically Handicapped Persons Program (GHPP) will not provide coverage for experimental services unless specifically authorized by law.
B. The CCS Program and GHPP may provide coverage for an investigational service if:
    1. It is approved by the FDA under any Investigational New Drug (IND) Application; or
    2. It is authorized for use under the State of California's Right to Try Act; and
    3. Its use is consistent with its FDA-approved IND Application or the State of California's Right to Try Act;
C. Additional criteria that will be considered in the adjudication process include:
    1. Conventional therapy will not adequately treat the intended patient's condition;
    2. Conventional therapy will not prevent progressive disability or premature death;
    3. The provider of the proposed service has a record of safety and success with it or equivalent to that of other providers of the investigational services;
    4. Other criteria (e.g., cost and availability) may be considered in the adjudication of a given request in cases in which more than one investigational service is available;
    5. There is reasonable expectation that the investigational service will significantly prolong the patient's life or will maintain or restore a range of physical and social function suited to activities of daily living; and
    6. The service is not being performed as part of a research study protocol. For a beneficiary with cancer who participates in a clinical trial for cancer, California Health and Safety Code (HSC) § 1370.6 requires that all routine patient care costs related to the clinical trial

be covered if the beneficiary's CCS-paneled treating physician recommends participation in the clinical trial after determining that participation in the clinical trial has a meaningful potential to benefit the enrollee. The coverage does not include investigational services that have not been approved by the FDA and that are associated with the clinical trial.

## Feedback

Blue Shield of California Promise Health Plan is interested in receiving feedback relative to developing, adopting, and reviewing criteria for medical policy. Any licensed practitioner who is contracted with Blue Shield of California Promise Health Plan is welcome to provide comments, suggestions, or concerns. Our internal policy committees will receive and take your comments into consideration. Our medical policies are available to view or download at www.blueshieldca.com/en/bsp/providers.

For medical policy feedback, please send comments to: MedPolicy@blueshieldca.com

Questions regarding the applicability of this policy should be directed to the Blue Shield of California Promise Health Plan Prior Authorization Department at (800) 468-9935, or the Complex Case Management Department at (855) 699-5557 (TTY 711) for San Diego County and (800) 605-2556 (TTY 711) for Los Angeles County or visit the provider portal at www.blueshieldca.com/en/bsp/providers.

*Disclaimer: Blue Shield of California Promise Health Plan may consider published peer-reviewed scientific literature, national guidelines, and local standards of practice in developing its medical policy. Federal and state law, as well as member health services contract language, including definitions and specific contract provisions/exclusions, take precedence over medical policy and must be considered first in determining covered services. Member health services contracts may differ in their benefits. Blue Shield of California Promise Health Plan reserves the right to review and update policies as appropriate.*