



HOME APNEA MONITOR

DME101.020

BlueReview POSTED DATE: 11/17/2003

EFFECTIVE DATE: 10/24/2003

COVERAGE:

Home Apnea Monitors ordered by a physician **is considered medically necessary** for an infant up to 12 months of age who:

- Has been diagnosed by a physician as having Apnea of Infancy, a condition in which breathing stops for 20 seconds or longer or for less than 20 seconds and is associated with slowing of the heart beat (bradycardia) or bluish discoloration of the skin or mucous membranes caused by too little oxygenated hemoglobin in the bloodstream (cyanosis); or
- Has suffered an Apparent Life Threatening Event (ALTE). ALTE being defined as episode that is characterized by some combination of apnea (central or occasionally obstructive), color change (usually cyanotic or pallid), marked change in muscle tone (usually marked limpness), choking or gagging and the infant required mouth-to-mouth resuscitation or vigorous stimulation.

Coverage of parental training sessions (cardiopulmonary resuscitation [CPR] classes and/or instructions on monitor use) or additional training sessions are not reimbursed separately as these charges are considered part of the rental/purchase fee.

The following services for patients who require Home Apnea Monitoring **are considered not medically necessary** as they are considered to be convenient services. They are:

- A back-up electrical system or alterations to the living quarters required for the monitor,
- Standby medical, nursing, technical, or counseling assistance, and
- Monitor computer downloading of storage data used for the analysis of stored patterns of surrounding significant events.

DESCRIPTION:

Home Apnea Monitors must be:

- able to recognize and trigger its alarm for periods of prolonged apnea (cessation of breathing, generally greater than 20 seconds) and/or bradycardia (slowing of heart rate falling below 80 beats per minute or another preset rate);
- noninvasive;
- easy to use by the care giver, generally the infant's parents;

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- equipped with breathing and heart rate sensors/electrode belts, remote alarms, wireless intercoms, and power failure alarms; and
- capable of monitoring its own internal essential functions.

Besides monitoring both the breathing and heart rates of infants, some monitors are able to capture and store patterns of surrounding significant events for later analysis, such as identification of heart rate patterns and variability.

The brain controls breathing automatically. During sleep, when the brain is less active, breathing becomes slower and shallower. Short pauses in breathing are normal for infants. With infantile apnea these pauses may be prolonged. Periods of apnea may be a result of:

- infections, sepsis, pneumonia, or pulmonary diseases,
- seizures, intracranial hemorrhage, or other brain conditions,
- persistent low blood glucose levels,
- airway blockage,
- cardiac abnormalities,
- withdrawal from drugs (drug-abusing mothers),
- gastroesophageal reflux, and
- immature nervous system.

There are three types of infantile apnea:

- Central or diaphragmatic - the infant makes no effort to breathe, the chest is still, and no air passes through the nose or mouth,
- Obstructive - the chest is moving, but no air passes through the nose or mouth, or
- Mixed - the infant has elements of both central and obstructive all within the same event.

The variations in types of apnea complicate the function of the monitors. For that reason, effective home apnea monitors must measure the cardiorespiratory physiological function that is adversely affected within a relatively short time after the infant stops breathing. For example, if the apnea is obstructive, the chest will continue to move. If the monitor's only method of detecting breathing is chest movement, this type of apnea might go undetected unless, the monitor can also detect bradycardia (triggered by the period of apnea) and sound the alarm.

ALTE and Apnea of Infancy are serious episodes of prolonged apnea that do not result in death. If the apnea lasts beyond 20 seconds, the infant may appear blue/pale (cyanosis - excessive deoxygenated



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hemoglobin in the bloodstream), may begin to choke/gag, may go limp and the heart rate may slow below 80 beats per minute.

Home Apnea Monitors are also known as Sudden Infant Death Syndrome (SIDS) Monitors.

RATIONALE:

Apnea has long been recognized as a clinical problem in infants. Considerable investigative and clinical attention has been directed toward this condition. Although progress has been made and certain categories of apnea have been delineated, etiology remains unclear in many situations. Furthermore, the condition is common in certain populations, such as in infants born prematurely. Whether an apneic event occurs independently or in association with a pathophysiologic process such as sepsis or an environmental factor such as change in temperature, there is concern about the possible effects of interrupted breathing.

Prevention of SIDS is an emotionally charged issue. The appropriateness of home monitoring is uncertain. In deciding to monitor or not to monitor, the primary objective is to serve the best interest of the infant and therefore the decision should primarily be based on the infant's history. Monitoring is indicated for certain groups of infants at high risk for sudden death. These groups include infants with one or more severe ALTE's requiring mouth-to-mouth resuscitation or vigorous stimulation, symptomatic preterm infants, siblings of SIDS victims, and infants with compromising conditions. Monitoring is not indicated for normal risk infants.

Home Apnea Monitors facilitate measurement of normal and abnormal physiologic processes, such as breathing patterns. Use of monitors in the laboratory and hospital settings have contributed to the discovery of new information and improved management of abnormalities.

PRICING:

None

REFERENCES:

- Desch, L.W., et al. "Evaluation of changes made to an infant home apnea monitoring program in response to findings from a national consensus panel." *Journal of Perinatology* (1990 December) 10(4): 380-5
- FDA "Infant Apnea Monitors Help Parents Breathe Easy." (1991 June): 1-6. Prepared by Dori Stehlin (Web Site):

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<http://www.verity.fda.gov/search97cgi/>

- "Positioning and SIDS." *American Academy of Pediatrics - Policy Statement* (1992 June - Part One) 89(6): 1120-6. (Web site): <http://aap.org/policy/04791.html>
- Keens, T.G. and S.L. Ward. "Apnea spells, sudden death, and the role of the apnea monitor." *Pediatric Clinics of North America* (1993 October) 40(5): 897-911
- Steinschneider, A., et al. "Cost implications of event recordings in apnea/bradycardia home monitoring: a theoretical analysis." *Pediatrics* (1995 March) 95(3): 378-80
- Malloy, M.H. and B. Graubard. "Access to home apnea monitoring and its impact on re-hospitalization among very-low-birth-weight infants." *Archives of Pediatrics and Adolescent Medicine* (1995 March) 149(3): 326-32
- Hunt, C.E., et al. "Home documented monitoring of cardiorespiratory pattern and oxygen saturation in healthy infants." *Pediatric Research* (1996 February) 39(2): 216-22
- "Home Apnea Monitors." *BCBSA Consortium Health Plan Medical Policy Reference Manual* (1996 July 31) DME: 1.01.06
- Gibson, E., et al. "Documented home apnea monitoring: effect on compliance, duration of monitoring, and validation of alarm reporting." *Clinical Pediatrics (Philadelphia)* (1996 October) 35(10): 505-13
- Malloy, M.H. and H.J. Hoffman. "Home apnea monitoring and sudden infant death syndrome." *Preventive Medicine* (1996 November-December) 26(6): 645-9
- "Hospital Discharge of the High-Risk Neonate - Proposed Guidelines." *American Academy of Pediatrics - Policy Statement* (1998 August) 102(2): 411-7 (Web site): <http://aap.org/policy/re9812.html>
- Baker, L. and B. Thyer. "Promoting parental compliance with home infant apnea monitor use." *Behavior Research and Therapy* (2000 March) 38(3): 285-96
- "Changing Concepts of Sudden Infant Death Syndrome: Implications for Infant Sleeping Environment and Sleep Position." *American Academy of Pediatrics - Policy Statement* (2000 March) 105(3): 605-56 (Web site): <http://aap.org/policy/re9946.html>.
- "Obstructive sleep apnea in infants: Relation to family history of sudden infant death syndrome, apparent life-threatening events, and obstructive sleep apnea." *The Journal of Pediatrics* (2000 March) 136(3): 318-23
- "Apnea, Sudden Infant Death Syndrome, and Home Monitoring." *American Academy of Pediatrics Policy Statement* (2003 April) 111(4): 914-17.



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DISCLAIMER:

State and federal law, as well as contract language, including definitions and specific inclusions/exclusions, takes precedence over Medical Policy and must be considered first in determining coverage. The member's contract benefits in effect on the date that services are rendered must be used. Any benefits are subject to the payment of premiums for the date on which services are rendered. Medical technology is constantly evolving, and we reserve the right to review and update Medical Policy periodically.

HMO Blue Texas physicians who are contracted/affiliated with a capitated IPA/medical group must contact the IPA/medical group for information regarding HMO claims/reimbursement information and other general policies and procedures.