MEDICAL POLICY

Medical Policy Title	**Positive Airway Pressure Devices: CPAP, BPAP, APAP and Noninvasive Positive Pressure Ventilators (NIV)**
Policy Number	**1.01.06**
Current Effective Date	**January 23, 2025**
Next Review Date	**January 2026**

Our medical policies are based on the assessment of evidence based, peer-reviewed literature, and professional guidelines. Eligibility for reimbursement is based upon the benefits set forth in the member's subscriber contract. (Link to Product Disclaimer)

POLICY STATEMENT(S)

I. The following devices are **medically appropriate** for adults with obstructive sleep apnea (OSA) when the following criteria are met:

A. Continuous Positive Airway Pressure (CPAP) (HCPCS: E0601)

1. For the initial 90-day trial period, the individual must meet the following:

a. Polysomnography (PSG) or home sleep testing (HST) results documenting an apnea-hypopnea index (AHI) or respiratory disturbance index (RDI) of greater than five, and less than 15 respiratory events per hour **AND EITHER** of the following associated with symptoms;

i. symptoms of OSA (e.g., excessive daytime sleepiness, impaired cognition, insomnia); **or**

ii. documented cardiovascular diseases, including hypertension, ischemic heart disease, or history of stroke.

2. CPAP continuation after the 90-day trial is **medically appropriate** when the following have been demonstrated: (Documentation required)

a. Improved AHI and symptom resolution during trial period; **and**

b. Compliance has been demonstrated as defined by the use of the device for 70% of the nights for an average of four or more hours per 24-hour period during a consecutive 30-day period.

B. Bilevel Positive Airway Pressure (BPAP or BiPAP) (HCPCS: E0470 or E0471) with or without rate control for adults who have failed CPAP or not tolerated CPAP are **medically appropriate** when the following criteria has been met.

1. Initial 90-day trial period (Documentation required):

a. Demonstration of resolution or control of respiratory events with improved tolerance using BPAP at least two weeks after an acute episode; **and**

b. The patient is stable on current treatment.

2. Continuation of BPAP coverage after the 90-day trial period is considered **medically appropriate** when the following have been demonstrated. (Documentation required)
    a. Improved AHI and symptom resolution during trial period; **and**
    b. Compliance has been demonstrated, as defined by the use of the device for 70% of the nights, for an average of four or more hours per 24-hour period, during a consecutive 30-day period.

II. Obstructive Sleep Apnea in Children:

A. CPAP is considered **medically appropriate** for the treatment of obstructive sleep apnea in children for the following indications: (Please note that a 90-day continuation review is not required for pediatric members.)

1. Failure of adenotonsillectomy to relieve OSA symptoms;
2. A contraindication to surgical intervention; or
3. for whom there is a strong preference for a nonsurgical approach;

AND EITHER B or C:

B. Polysomnography results documenting an AHI or RDI of five (5) or greater and associated symptoms of OSA; **or**

C. Polysomnography results demonstrating an AHI or RDI within normal ranges, but the child exhibits episodes of hypercarbia based on end-tidal CO_2 measurements greater than 53 mm Hg or the end-tidal CO_2 is greater than 50 mmHg for 10 to 24% of the sleep time. The child must also exhibit associated symptoms of OSA;

III. CPAP is considered **not medically necessary** for the treatment of snoring without accompanying OSA.

IV. Central Sleep or Complex Sleep Apnea/Treatment Emergent Sleep Apnea:

A. BPAP (HCPCS: E0470 or E0471) with or without rate control is considered a **medically appropriate** treatment option for an initial 90-day trial period in adults diagnosed with central sleep or complex sleep apnea who have failed CPAP or not tolerated CPAP **AND** who meet the **ONE** of following criteria:

1. Central hypopnea/apnea greater than 50% of the total apnea hypopnea rate;
2. Central hypopnea/apnea rate/index greater than five events per hour;
3. Significant improvement of oxygenation while breathing the patient's prescribed FiO_2; **or**
4. Documentation of demonstration of resolution/control of respiratory events with improved tolerance using BiPAP at least 2 weeks after an acute episode and patient is stable on current treatment.

B. Continuation of coverage after the 90-day trial period is considered **medically appropriate** when **BOTH** of the following have been demonstrated. (Documentation is required)

1. Improved AHI and symptom resolution during trial period; **and**
2. Compliance has been demonstrated, as defined by the use of the device for 70% of the nights, for an average of four or more hours per 24-hour period, during a consecutive 30-day period.

V. BPAP for Chronic Respiratory Failure when used as noninvasive ventilatory support with or without the back-up rate feature, is considered **medically appropriate** for an initial 90-day trial period in adults who have failed CPAP **AND** who meet the following indications:

A. Restrictive thoracic disorders (e.g., neuromuscular disease, thoracic cage abnormalities), with documented:

1. Oxygen desaturations less than or equal to 88% for at least five continuous minutes during sleep oximetry (minimum recording time of two hours) while either breathing room air or prescribed FIO2 as applicable;
2. Arterial blood gas $PaCO_2$ greater than or equal to 45 mm Hg while awake and breathing either room air or prescribed FIO2 as applicable;
3. Documented decrease in forced vital capacity (FVC) or vital capacity (VC) to 50% of predicted;
4. Maximal inspiratory pressure of less than 60 cm H_2O;
5. Symptomatic respiratory disease impairing activities of daily living; **or**
6. COPD does not contribute to the patient's pulmonary limitation.

B. Severe chronic pulmonary disease with:

1. Arterial blood gas $PaCO_2$ greater than or equal to 52 mm Hg while the patient is awake and is breathing either room air or prescribed FIO_2, as applicable;
2. Oxygen saturations less than or equal to 88% for at least five continuous minutes during sleep oximetry (minimum recording time of two hours) while receiving oxygen at 2 LPM or prescribed FIO_2, whichever is higher; **and**
3. OSA and treatment with CPAP have been considered and ruled out.

C. Continuation of coverage after the 90-day trial period is considered **medically appropriate** when **BOTH** of the following have been demonstrated. (Documentation is required).

1. Improved AHI and symptom resolution during trial period; **and**
2. Compliance has been demonstrated, as defined by the use of the device for 70% of the nights, for an average of four or more hours per 24-hour period, during a consecutive 30-day period.

VI. Replacement of a positive airway pressure device with an upgraded model will be reviewed for medical necessity and eligible for coverage when **ALL** the following are met:

A. The patient is compliant with use of the device (Please refer to continuation of coverage after 90-day trial);

B. The device is malfunctioning;

C. The device has exceeded the warranty time period;

AND EITHER D or E listed below.

D. Required repairs would exceed the cost of a replacement device or the parts that need to be replaced; **or**

E. There has been irreparable change in the device's condition or in a part of the device, due to normal wear and tear.

VII. The initiation and management of continuous positive airway pressure ventilation (CPAP) (CPT: 94660) is considered **medically appropriate** when performed in-person **AND** clinical criteria for a CPAP device have been met, and the device has been approved by the Health Plan.

VIII. Intermittent non-invasive positive pressure ventilators (NIPPV)(e.g., Trilogy100 Phillips Respironics) (HCPCS: E0466) are considered **medically appropriate** for home mechanical ventilation nocturnally (during sleep) for an initial 90-day trial period when:

A. CPAP and BPAP have failed; **and**

B. In adults diagnosed with **ONE** of the following indications:

1. Neuromuscular diseases;
2. Thoracic restrictive diseases; **or**
3. Chronic respiratory failure consequent to chronic obstructive pulmonary disease with **ALL** of the following:

a. arterial blood gas $PaCO_2$ greater than or equal to 52 mm Hg while awake and breathing either breathing room air or prescribed FIO_2, as applicable;

b. oxygen saturations less than or equal to 88% for at least five continuous minutes during sleep oximetry (minimum recording time of two hours) while receiving oxygen at 2 LPM or prescribed FIO_2, whichever is higher; **and**

c. OSA and treatment with BPAP (without or with back up rate) have been trialed and failed (with documentation).

C. Continuation of coverage of the NIPPV after the 90-day trial period is considered **medically appropriate** when compliance has been demonstrated as defined by the use of the device for 70% of the nights for an average of four or more hours per 24-hour period during a consecutive 30-day period during the 90-day trial. (Documentation is required)

D. Continuation of coverage of the NIPPV after one year will be considered **medically appropriate** when compliance has been demonstrated, as defined by the use of the device for 70% of the nights, for an average of four or more hours per 24-hour period, during the most current consecutive 30-day period.

RELATED POLICIES

Corporate Medical Policy

2.01.28 Sleep Studies

7.01.41 Surgical Management of Sleep Disorders

POLICY GUIDELINE(S)

I. BPAP, CPAP with expiratory relief (e.g., C- Flex technology Respironics, Inc., Murrysville, PA), or APAP are options for patients who cannot tolerate the high constant air pressure associated with CPAP but wish to continue treatment for OSA.

II. BPAP devices may or may not include a backup rate. BPAP devices with a backup rate are timed devices that supply a breath at a specific rate per minute. These devices will deliver a breath when the minimum number of breaths per minute has not been met by the user.

III. Supplemental oxygen and/or humidification can be added to positive pressure devices to increase oxygen saturation and decrease vasomotor rhinitis.

IV. Coverage is allowed for a one-month rental when the CPAP or BPAP device is malfunctioning and out of warranty, (and not associated with a manufacturer recall) while the device is being repaired.

V. Patients who do not meet the criteria for continuation of coverage during the initial 90 day trial for continuation of coverage are eligible to re-qualify for a CPAP device, but must have a clinical re-evaluation by the treating physician to determine the etiology of the failure to respond to CPAP therapy (e.g., documentation of failure of symptoms to resolve or improper fit of device, and re-education of the patient regarding proper use of the equipment or re-fitting of masks).

VI. Common OSA symptoms in children include (but are not limited to) habitual snoring, disturbed sleep, and daytime neurobehavioral problems such as hyperactivity. Daytime sleepiness may be present but is less common in children. Children with an AHI or RDI greater than one but less than five may be considered for CPAP if significant daytime symptoms exist.

VII. The diagnostic criteria for pediatric obstructive sleep apnea (OSA) as defined by the American Academy of Sleep Medicine (AASM) and International Classification of Sleep Disorders (ICSD) is below. ALL of the following criteria should be present for a child to be diagnosed with OSA:

A. Snoring, labored breathing, or obstructed breathing during the child's sleep;

B. One or more of the following: paradoxical inward rib cage motion during inspiration, movement arousals, behavior, slow growth, morning headaches, or secondary enuresis;

C. Polysomnography reveals one or more obstructive apneas or hypopneas per hour of sleep (e.g., an apnea hypopnea index greater than one event per hour);

D. Polysomnography demonstrates either of the following:

1. frequent arousals from sleep associated with increased respiratory effort, oxyhemoglobin desaturation associated with apnea, hypercapnia during sleep, or markedly negative esophageal pressure swings; or

2. periods of hypercapnia, oxyhemoglobin desaturation, or both during sleep that are associated with snoring, paradoxical inward rib cage motion during inspiration, and either frequent arousals from sleep or markedly negative esophageal pressure swing.

VIII. The monitoring feature/device, stand-alone or integrated, any type, including all accessories, components and electronics, not otherwise classified (HCPCS: A9279) is considered inclusive to the positive airway pressure device.

IX. Devices used to clean or sanitize the CPAP or BPAP devices are considered a convenience item and are ineligible for coverage (e.g., SoClean, SoClean 2 Go).

DESCRIPTION

Obstructive sleep apnea (OSA) in an adult is defined as recurrent episodes of complete or partial obstruction of the upper airway leading to reduced or absent breathing during sleep for greater than 10 seconds. These episodes are termed "apneas" with complete or near-complete cessation of breathing, or "hypopneas" when the reduction in breathing is partial. Treatment for OSA is indicated when there is documented sleep related apnea by means of polysomnography or home sleep testing, as well as evidence of clinical impairment such as increased sleepiness or altered cardiopulmonary function. Long-term cardiovascular sequelae of untreated OSA include poorly controlled hypertension, heart failure and atrial fibrillation (even after catheter ablation) and other arrhythmias OSA also increases the risk for nonalcoholic fatty liver disease, likely due to intermittent nocturnal hypoxia and sleep disruption.

Obstructive sleep apnea in children is defined as a disorder of breathing during sleep characterized by prolonged partial upper airway obstruction and/or intermittent complete obstruction that disrupts normal ventilation during sleep and normal sleep patterns. In pediatric OSA, the cessation of airflow through the nose and mouth lasts for at least two respiratory cycles rather than a time duration of 10 seconds as in an adult. Though adenotonsillectomy is the first-line therapy for pediatric OSA, surgery alone may not be sufficient or may be contraindicated. Continuous positive airway pressure may be an option for these patients. Obstructive hypoventilation (OH) in children is asleep related breathing disorder that is considered a variation of obstructive sleep apnea. Children with OH may have an AHI within normal ranges but have episodic periods of hypercarbia as evidenced by elevated measurements in the end-tidal CO_2.

Central sleep apnea is defined as the cessation of airflow through the nose and mouth for at least 10 seconds with no respiratory effort noted. The cessation in breathing can be caused by problems involving brain mechanisms, or an obstructive component. Only approximately only 4% of patients

undergoing PSG in a sleep laboratory are diagnosed with central sleep apnea, making this an uncommon condition.

Mixed sleep apnea is a combination of obstructive and central sleep apnea. Not only does the patient have an obstruction in the airway, but the patient may have a neurological dysfunction or cardiopulmonary as well that contributes to the central apnea component.

Continuous positive airway pressure, or CPAP, supplies constant pressure throughout the respiratory cycle by raising the intraluminal upper airway pressure above the positive critical transmural pressure of the pharynx or hypopharynx. The pressure is delivered by a flow generator through either nasal mask or modified nasal prongs in order to keep the upper airway patent resulting in adequate ventilation and arterial oxygenation. The pressure used is determined individually, with a range of 3 to 20 cm. water.

Bilevel Positive Airway Pressure, or BPAP*,* is an airway support system, which provides two different levels of pressure delivered via a mask. There is a higher-pressure during inspiration and a lower pressure level during expiration. BPAP is an option for patients who cannot tolerate the high constant air pressure associated with CPAP. BPAP devices with volume and/or pressure with a back-up rate feature are types of ventilators that can be used for many applications (as described below), but have not shown effectiveness for treating OSA.

Bilevel positive pressure airflow is also used in noninvasive ventilation for patients with chronic respiratory failure. Outpatient noninvasive positive pressure ventilation has been used in the following situations:

I. at night for the management of chronic respiratory failure;

II. for the long-term management of neuromuscular disorders with respiratory involvement;

III. for patients with respiratory insufficiency due to severe kyphoscoliosis; or

IV. for the improvement of nighttime desaturation and hypoventilation in patients with chest-wall diseases.

Auto-or self-titrating positive airway pressure, or APAP*,* systems utilize an algorithm that uses a pressure transducer and microprocessor to monitor the airway for vibration patterns and then makes air pressure adjustments based on the incidence of apnea or absence of vibration. APAP devices are also referred to as demand positive airway pressure devices (DPAP).

CPAP with expiratory relief (e.g., C- Flex technology Respironics, Inc., Murrysville, PA) is designed to provide pressure relief during expiration, while maintaining optimal pneumatic splinting for effective therapy. CPAP with expiratory relief technology monitors the patient's airflow during expiration and reduces expiratory pressure proportional to expiratory flow. CPAP with C-Flex technology can increase compliance in those patients who find it difficult or uncomfortable to breathe out against the continuous positive pressure. This technology can be applied to CPAP, BPAP and APAP devices.

Most PAP machines now contain a data card that has the ability to record and transmit daily use rates of the device. In addition, most PAP machines can also be equipped with a modem (either wired or

wireless) that is capable of transmitting data on a daily basis to a manufacturer-owned database. The ability to detect disturbances in a variety of measures, including air flow, amount of time used, and mask leak, is also included in most commercially available PAP machines.

Non-invasive positive pressure ventilation involves the delivery of oxygen into the lungs via positive pressure without the need for endotracheal intubation. It is used in both acute and chronic respiratory failure but requires careful monitoring and titration to avoid complications. NIPPV is a type of mechanical ventilation that can be used at home to assist with taking a full breath and maintaining adequate oxygen supply in the body, especially while sleeping.

Intermittent positive pressure reduces the work of breathing through three different methods. By applying positive end-expiratory pressure (PEEP) through expiratory positive airway pressure (EPAP), positive pressure ventilation allows the body to overcome the dynamic intrinsic positive end-expiratory pressure threshold required to initiate a breath, as well as increasing lung compliance.

SUPPORTIVE LITERATURE

CPAP is effective in the treatment of adult patients with documented obstructive sleep apnea (OSA). The symptoms associated with OSA, such as excessive daytime sleepiness, impaired cognition, and mood disorders are reduced or eliminated with the consistent use of CPAP. CPAP is not indicated in individuals with simple snoring that is not associated with pauses in respirations. Treatment recommendations for obstructive sleep apnea are based primarily on the respiratory disturbance index (RDI) or the apnea hypopnea index (AHI), the severity of the presenting symptoms and the existence and severity of co-morbid conditions. The RDI is defined as the total number of obstructive apneas, hypopneas, and respiratory event-related arousals per hour; the AHI is defined as the total number of apneas and hypopneas per hour.

Current studies conclude that the extent of improvement in excessive daytime sleepiness is similar between CPAP and APAP. There is no clinical evidence that supports the use of APAP without the results of polysomnography or the use of APAP while waiting for polysomnography to be completed.

Comparative studies of CPAP and CPAP-C-Flex have demonstrated similar outcomes in the improvement of OSA. The addition of C-Flex can result in increased comfort and improved compliance in patients who are intolerant of the constant expiratory pressure of traditional CPAP.

Obstructive sleep apnea in children is a common condition that can result in severe complications if left untreated. Complications may include growth abnormalities, neurologic disorders, and cor pulmonale, especially in severe cases. Polysomnography is the best diagnostic technique shown to quantitate the sleep abnormalities associated with sleep disordered breathing, but there is an absence of widely accepted normative data for AHI/RDI in children. Adenotonsillectomy may be a surgical option for children with OSA. For those patients with specific surgical complications, minimal adeno-tonsillar tissue or persistent OSA after adenotonsillectomy, CPAP, observation, medications and additional upper airway surgeries are treatment options.

Noninvasive ventilation is increasingly being used to treat patients with chronic respiratory failure, including neuromuscular diseases, restrictive thoracic disorders, obstructive lung diseases, and other hypoventilation conditions.

Wang et al., (2019) conducted a systematic review to assess the effectiveness of home noninvasive positive pressure ventilation (NIPPV) (home mechanical ventilation (HMV), BPAP, or CPAP devices) in adults with chronic respiratory failure. 68 studies evaluating 53,733 patients were included. In patients with COPD, home BPAP (compared to no device) was associated with lower mortality, decreased need for intubations and hospital admissions, but no change in quality of life. In patients with COPD, HMV (compared individually with BPAP, CPAP, or no device) was associated with fewer hospital admissions. In patients with thoracic restrictive diseases, HMV (compared to no device) was associated with lower mortality. In patients with neuromuscular diseases, home BPAP (compared to no device) was associated with lower mortality and better quality of life. In patients with obesity hypoventilation syndrome, home HMV/BPAP (compared to no device) was associated with lower mortality. Current evidence was not available to assess the comparative effectiveness of many device capabilities on patient outcomes. Criteria to initiate home NIPPV and home respiratory services varied and were not validated in comparative studies.

PROFESSIONAL GUIDELINE(S)

N/A

REGULATORY STATUS

NIV support is used as a long-term treatment option for patients with chronic respiratory failure with hypercapnia. Many ventilator devices have obtained clearance from the U.S. Food and Drug Administration (FDA) as class II devices used to provide ventilator support for a variety of conditions. The Trilogy100 Ventilatory Support System (Philips Healthcare, Andover MA; formerly Respironics, Inc., Monroeville, PA), a portable ventilator device, obtained FDA 510(k) clearance in 2009. Trilogy100 is intended for pediatric and adult weighing at least 5 kg (11 lbs.). The device is intended to be used in home, institution or hospital, and has portable applications.

According to the Center for Medicare and Medicaid (CMS) under the Durable Medical Equipment benefit respiratory assist devices (RAD) are covered by the carrier policy for durable medical equipment (DME MAC). RADs are BPAP devices that are used for restrictive thoracic disorders, neuromuscular diseases, COPD, other hypoventilation conditions, and central sleep apnea. Respiratory assistance provided by a respiratory assist device, (a ventilator), may be applied to assist insufficient respiratory efforts in the treatment of conditions that may involve sleep-associated hypoventilation.

CODE(S)

- Codes may not be covered under all circumstances.
- Code list may not be all inclusive (AMA and CMS code updates may occur more frequently than policy updates).

- (E/I)=Experimental/Investigational
- (NMN)=Not medically necessary/appropriate

CPT Codes

Code	Description
94660	Continuous positive airway pressure ventilation (CPAP), initiation and management

HCPCS Codes

Code	Description
A7027-A7039	Accessories/supplies, code range for positive pressure airway devices (code range)
A7044-A7046	Accessories/supplies, code range for positive pressure airway devices (code range)
A9279	Monitoring feature/device, stand-alone or integrated, any type, includes all accessories, components and electronics, not otherwise classified
E0466	Home ventilator, any type, used with noninvasive interface, (e.g., mask, chest shell)
E0470	Respiratory assist device, bi-level pressure capability, without back-up rate feature, used with noninvasive interface, e.g., nasal or facial mask (intermittent assist device with continuous positive airway pressure device)
E0471	Respiratory assist device, bi-level pressure capability, with backup rate feature, used with noninvasive interface, e.g., nasal or facial mask (intermittent assist device with continuous positive airway pressure device)
E0472	Respiratory assist device, bi-level pressure capability, with backup rate feature, used with invasive interface, e.g., tracheostomy tube (intermittent assist device with continuous positive airway pressure device)
E0561	Humidifier, nonheated, used with positive airway pressure device
E0562	Humidifier, heated, used with positive airway pressure device
E0601	Continuous airway pressure (CPAP) device

ICD10 Codes

Code	Description
E66.2	Morbid (severe) obesity with alveolar hypoventilation

Code	Description
G35	Multiple sclerosis
G47.00	Insomnia, unspecified
G47.10	Hypersomnia, unspecified
G47.20	Circadian rhythm sleep disorder, unspecified type
G47.30	Sleep apnea, unspecified
G47.33	Obstructive sleep apnea (adult) (pediatric)
G47.35	Congenital central alveolar hypoventilation syndrome
G47.8	Other sleep disorders
G47.9	Sleep disorder, unspecified
I50.9	Heart failure, unspecified
J39.8	Other specified diseases of upper respiratory tract
J44.1	Chronic obstructive pulmonary disease with (acute) exacerbation
J44.9	Chronic obstructive pulmonary disease, unspecified
J95.2	Acute pulmonary insufficiency following nonthoracic surgery
J96.00-J96.02	Acute respiratory failure (code range)
J96.10-J96.12	Chronic respiratory failure (code range)
J96.20-J96.22	Acute and chronic respiratory failure (code range)
J96.90-J96.92	Respiratory failure, unspecified, unspecified whether with hypoxia or hypercapnia (code range)
J98.4	Other disorders of lung
J98.8	Other specified respiratory disorders

REFERENCES

*Alajmi M, et al. Impact of continuous positive airway pressure therapy on blood pressure in patients with obstructive sleep apnea hypopnea: a meta-analysis of randomized controlled trials. Lung 2007 Mar-Apr;185(2):67-72.

*American Academy of Pediatrics. Clinical practice guideline: Diagnosis and management of childhood obstructive sleep apnea syndrome. Pediatrics 2002;109(4):704-712.

*American Academy of Sleep Medicine. Practice parameters for the use of auto-titrating continuous positive airway pressure devices for titrating pressures and treating adult patients with obstructive sleep apnea. Sleep 2002;25(2):143-147.

*American Thoracic Society. Cardiorespiratory sleep studies in children. Establishment of normative data and polysomnographic predictors of morbidity. Am J Respir Crit Care Med 1999 Oct;160(4):1381-1387.

*Barnes M, et al. A randomized controlled trial of continuous positive airway pressure in mild obstructive sleep apnea. Am J Respir Crit Care Med 2002 Mar 15;165(6):773-80.

Benjafield, Adam V et al. Estimation of the global prevalence and burden of obstructive sleep apnoea: a literature-based analysis. The Lancet Respiratory Medicine 2019 Aug;7(8): 687 – 698.

*Chervin RD, et al. Inattention, hyperactivity, and symptoms of sleep-disordered breathing. Pediatrics 2002 Mar;109(3):449-456.

*Chai CL, et al. Continuous positive airway pressure delivery interfaces for obstructive sleep apnea. Cochrane Database Syst Rev. 2006 Oct 18;(4):CD005308.

Chang, H-P, et al. Obstructive sleep apnea treatment in adults. The Kaohsiung Journal of Medical Sciences 2019 Sept 7-12.

*Chervin RD, et al. Hyperactivity and polysomnographic findings in children evaluated for sleep-disordered breathing. Sleep 2001 May 1;24(3):313-320.

Cistulli P, et al. Short-term CPAP adherence in obstructive sleep apnea: a big data analysis using real world data. Sleep Medicine 2019 Jul;59:114-116.

*Downey R, et al. Nasal continuous positive airway pressure use in children with obstructive sleep apnea younger than 2 years of age. Chest 2000 Jun;117(6):1608-1612.

Faccenda JF, et al. Randomized placebo-controlled trial of continuous positive airway pressure on blood pressure in the sleep apnea-hypopnea syndrome. Am J Crit Care Med 2001;163:344-348.

Food and Drug Administration (FDA) 510(k) Premarket Notification Database. Trilogy100 Ventilatory System. Respironics, Inc. Monroeville, PA. No. K083526. March 13, 2009. Rockville, MD: FDA. [accessed 2024 Dec 24]. Available from: https://www.accessdata.fda.gov/cdrh_docs/pdf8/K083526.pdf

*Giles TL, et al. Continuous positive airway pressure for obstructive sleep apnea. Cochrane Database Syst Rev 2006 Jul 19;3:CD001106.

Hady KK, et al. Positive airway pressure therapy for pediatric obstructive sleep apnea. Children 2021 Nov;8(11):979.

*Henke KG, et al. Effect of nasal continuous positive airway pressure on neuropsychological function in sleep apnea-hypopnea syndrome. Am J Crit Care Med 2001;163:911-917.

*Hudgel DW, et al. A long-term randomized, cross-over comparison of auto-titrating and standard nasal continuous airway pressure. Sleep 2000;23(5):645-648.

*Kushida CA, et al. Practice parameters for the use of continuous and bilevel positive airway pressure devices to treat adult patients with sleep-related breathing disorders. Sleep 2006 Mar 1;29(3):375-381.

Macrea M, et al. Long-term noninvasive ventilation in chronic stable hypercapnic chronic obstructive pulmonary disease: an official American Thoracic Society clinical practice guideline. Am J Respir Crit Care Med 2020 Aug 15;202(4):e74-e87.

*Marcus CL, et al. Use of nasal continuous positive airway pressure as treatment of childhood obstructive sleep apnea. J Pediatr 1995 Jul;127(1):88-94.

*Massa E, et al. The use of nasal continuous positive airway pressure to treat obstructive sleep apnea. Arch Dis Child 2002 Nov;87(5):438-443.

*McNicholas. Compliance with nasal CPAP therapy for obstructive sleep apnoea: how much is enough? Eur Respir J 1997;10:969-970.

*Morgenthaler TI, et al. Practice parameters for the medical therapy of obstructive sleep apnea. Sleep 2006 Aug 1;29(8):1031-1035.

*Nieminen P, et al. Snoring and obstructive sleep apnea in children. A 6-month follow-up study. Arch Otolaryngol Head Neck Surg 2000;126(4):481-486.

Patil SP, et al. Treatment of adult obstructive sleep apnea with positive airway pressure: An American Academy of Sleep Medicine Clinical Practice Guideline. J Clin Sleep Med 2019 Feb 15;15(2):335-343.

*Pieters TH, et al. Acceptance and long-term compliance with nCPAP in patients with obstructive sleep apnoea syndrome. Eur Respir J 1996;9:939-944.

*Randerath W, et al. Autoadjusting CPAP therapy based on impedance efficacy, compliance, and acceptance. Am J Respir Care Med 2001;163:652-657.

*Sin DD, et al. Can continuous positive airway pressure therapy improve the general health status of patients with obstructive sleep apnea? A clinical effectiveness study. Chest 2002 Nov;122(5):1679-1685.

*Sin DD, et al. Long-term compliance rates to continuous positive airway pressure in obstructive sleep apnea. A population-based study. Chest 2002 Feb;121(2):430-5.

Strohl, Kingman. Obstructive Sleep Apnea. Merck Manual 2020 Sept.

Wang Z, et al. Noninvasive Positive Pressure Ventilation in the Home [Internet]. Rockville (MD): Agency for Healthcare Research and Quality (US); 2019 Mar 14. PMID: 32101390.

*Waters KA, et al. Obstructive sleep apnea: the use of nasal CPAP in 80 children. Am J Respir Crit Care Med 1995 Aug;152(2):780-785.

Weiss MR, et al. Defining the patterns of pap adherence in pediatric obstructive sleep apnea: a clustering analysis using real world data. Journal of Clinical Sleep Medicine 2020 May;17 (5):1005-1013.

*White J, et al. Continuous positive airway pressure for obstructive sleep apnea. Cochrane Database Syst Rev 2002;(2):CD001106.

*Veasey SC, et al. Medical therapy for obstructive sleep apnea: a review by the Medical Therapy for Obstructive Sleep Apnea Task Force of the Standards of Practice Committee of the American Academy of Sleep Medicine. Sleep 2006 Aug 1;(29(8):1036-1044.

SEARCH TERMS

BPAP, BiPap, C-Flex, Demand, DPAP, Obstructive sleep apnea, OSA, noninvasive positive pressure ventilation

CENTERS FOR MEDICARE AND MEDICAID SERVICES (CMS)

LCD - Respiratory Assist Devices (L33800) [accessed 2024 Dec 19].

LCD - Positive Airway Pressure (PAP) Devices for the Treatment of Obstructive Sleep Apnea (L33718) [accessed 2024 Dec 19].

NCD - Durable Medical Equipment Reference List (280.1) [accessed 2024 Dec 19].

PRODUCT DISCLAIMER

- Services are contract dependent; if a product does not cover a service, medical policy criteria do not apply.
- If a commercial product (including an Essential Plan or Child Health Plus product) covers a specific service, medical policy criteria apply to the benefit.
- If a Medicaid product covers a specific service, and there are no New York State Medicaid guidelines (eMedNY) criteria, medical policy criteria apply to the benefit.
- If a Medicare product (including Medicare HMO-Dual Special Needs Program (DSNP) product) covers a specific service, and there is no national or local Medicare coverage decision for the service, medical policy criteria apply to the benefit.
- If a Medicare HMO-Dual Special Needs Program (DSNP) product DOES NOT cover a specific service, please refer to the Medicaid Product coverage line.

POLICY HISTORY/REVISION

Committee Approval Dates

01/17/02, 02/20/03, 12/18/03, 01/20/05, 04/21/05, 03/16/06, 04/26/07, 06/26/08, 02/26/09, 04/28/11, 04/26/12, 04/25/13 - 04/28/16, 04/27/17, 08/25/17, 04/26/18, 06/27/19, 06/25/20, 07/15/21, 03/24/22, 01/19/23, 01/18/24, 01/23/25

Date	Summary of Changes
01/23/25	Annual policy review, formatting changes, no new criteria
01/01/25	Summary of changes tracking implemented.
07/02/99	Original effective date