Clinical Policy Bulletin:
Obstructive Sleep Apnea in Children

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Policy

I. Diagnosis

A. Aetna considers nocturnal polysomnography (NPSG) for children and adolescents younger than 18 years of age with habitual snoring during sleep medically necessary when performed in a healthcare facility to differentiate primary snoring versus obstructive sleep apnea syndrome (OSAS). Note: In addition to obstructive sleep apnea, other medically necessary indications for NPSG in children include hypersomnia, suspected narcolepsy, suspected parasomnia, suspected restless leg syndrome, suspected periodic limb movement disorder, suspected congenital central alveolar hypoventilation syndrome, and suspected sleep related hypoventilation due to neuromuscular disorders or chest wall deformities.

B. Aetna considers NPSG for children medically necessary when performed in a healthcare facility after an adenotonsillectomy or other pharyngeal surgery for OSAS when any of the following is met (study should be delayed 6 to 8 weeks post-operatively):

1. Age younger than 3 years; or
2. Cardiac complications of OSAS (e.g., right ventricular hypertrophy); or
3. Craniofacial anomalies; or
4. Failure to thrive; or
5. Neuromuscular disorders; or
6. Obesity; or
7. Prematurity; or
8. Recent respiratory infection; or
9. Severe OSAS was present on pre-operative PSG (a
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respiratory disturbance index of 19 or greater); or


C. Aetna considers the use of abbreviated or screening techniques, such as videotaping, nocturnal pulse oximetry, daytime nap PSG, measurements of circulating adropin concentrations, plasma pentraxin-3 and TREM-1 levels, or unattended home PSG, experimental and investigational for diagnosis of OSAS in children because their effectiveness for this indication has not been established.

II. Treatment

Aetna considers the following treatments for OSAS in children with habitual snoring medically necessary when the apnea index is greater than 1 on a NPSG.

A. Aetna considers adenoidectomy and/or tonsillectomy medically necessary for treatment of OSAS in children. Childhood OSAS is usually associated with adenotonsillar hypertrophy, and the available medical literature suggests that the majority of cases will benefit from adenotonsillectomy.

B. Aetna considers continuous positive airway pressure (CPAP) medically necessary for treatment of OSAS in children when any of the following is met:

1. Adenoidectomy or tonsillectomy is contraindicated; or
2. Adenoidectomy or tonsillectomy is delayed; or
3. Adenoidectomy or tonsillectomy is unsuccessful in relieving symptoms of OSAS.

Aetna considers CPAP medically necessary for treatment of tracheomalacia.

C. Aetna considers oral appliances or functional orthopedic appliances medically necessary in the treatment of children with craniofacial anomalies with signs and symptoms of OSAS.

D. Aetna considers oral appliances or functional orthopedic appliances experimental and investigational for treatment of OSAS in otherwise healthy children. There is insufficient evidence that oral appliances or functional orthopedic appliances are effective in the treatment of OSAS in healthy children.

E. Aetna considers the following interventions experimental and investigational for obstructive sleep apnea in children because their effectiveness for this indication has not been established:

1. Cautery-assisted palatal stiffening procedure (CAPSO);
2. Chiropractic/osteopathic manipulation;
3. Expansion sphincter pharyngoplasty;
4. Flexible positive airway pressure;
5. Injection snoreplasty;
6. Laser-assisted uvuloplasty (LAUP);
7. Lingual tonsillectomy;
8. Mandibular distraction osteogenesis;
9. Maxillary expander;
10. Midline/partial glossectomy;
11. Nasal surgery;
12. Pillar palatal implant system;
13. Repose system;
14. Somnoplasty or Coblation;
15. Transpalatal advancement pharyngoplasty;
16. Uvulectomy.

See also CPB 0004 - Obstructive Sleep Apnea in Adults, CPB 0330 - Multiple Sleep Latency Test (MSLT), CPB 0452 - Noninvasive Positive Pressure Ventilation, and CPB 0549 - Distraction Osteogenesis for Craniofacial Defects.

Background

Obstructive sleep apnea syndrome (OSAS) is a disorder of breathing in which prolonged partial upper airway obstruction and/or intermittent complete obstruction occurs during sleep disrupting normal ventilation and normal sleep patterns. The signs and symptoms of OSAS in children include habitual snoring (often with intermittent pauses, snorts, or gasps) with labored breathing, observed apneas, restless sleep, and daytime neurobehavioral problems. Nocturnal enuresis, diaphoresis, cyanosis, mouth breathing, nasal obstruction during wakefulness, adenoidal facies, and hyponasal speech may also be present. Daytime sleepiness is sometimes reported but hyperactivity can frequently occur. Case studies report that OSAS in children can lead to behaviors easily mistaken for attention-deficit/hyperactivity disorder as well as behavioral problems and poor learning; however, most case studies have relied on histories obtained from parents of snoring children without objective measurements, control groups, or sleep studies. Severe complications of untreated OSAS in children include systemic hypertension, pulmonary hypertension, failure to thrive, cor pulmonale, and heart failure.

History and physical examination have been shown to be sensitive but not specific for diagnosing OSAS in children. Primary snoring is often the presenting symptom reported by parents, and should warrant careful screening for OSAS. Primary snoring is defined as snoring without obstructive apnea, frequent arousals from sleep or abnormalities in gaseous exchange. It is estimated that 3 % to 12 % of children are habitual snorers but only 2 % will be diagnosed with OSAS. Although surgical treatment has been shown to improve quality of life, it is not without risks (e.g., bleeding, velopharyngeal insufficiency, post-obstructive pulmonary edema). Thus, clinicians must be able to distinguish between primary snoring and OSAS.
Primary snoring among children without obstructive sleep apnea is usually considered a benign condition although this has not been well evaluated.

Nocturnal polysomnography (NPSG) remains the gold standard diagnostic test to differentiate primary snoring from OSAS in children. It is the only diagnostic technique that is able to quantitate the ventilatory and sleep abnormalities associated with sleep-disordered breathing and can be performed in children of any age. It should be noted that interpretation of NPSG values in children with OSAS is not unanimously agreed upon in the literature (Sargi and Younis, 2007) and only a limited number of studies designed to establish normal values for sleep-related respiratory variables in children have been reported. However, based on normative data, an obstructive apnea index of 1 is frequently chosen as the threshold of normality. Other normative values reported in the literature for children aged 1 to 15 years include: central apnea index 0.9; oxygen desaturation, 89 %; baseline saturation, 92 %; and PETCO2 (end-tidal carbon dioxide pressure) greater than 45 mm Hg for less than 10 % of total sleep time (Verhulst, 2007; Ulil, 2004; Schechter, 2002).

Studies have shown that abbreviated or screening techniques, such as videotaping, nocturnal pulse oximetry, and daytime nap PSG tend to be helpful if results are positive but have a poor predictive value if the results are negative. Unattended home PSG in children was evaluated by 1 center (Jacob, 1995) and produced similar results to laboratory studies; however, the equipment was relatively sophisticated and included respiratory inductive plethysmography, oximeter pulse wave form and videotaping. Unattended home studies in children using commercially available 4- to 6-channel recording equipment has not been studied. Portable monitoring based only on oximetry is inadequate for identifying OSAS in otherwise healthy children (Kirk, 2003).

Treatment of OSAS in children depends on the severity of symptoms and the underlying anatomic and physiologic abnormalities. Childhood OSAS is usually associated with adenotonsillar hypertrophy, and the available medical literature suggests that the majority of cases (75 % to 100 %) will benefit from adenotonsillectomy (the role of adenoidectomy alone is unclear). Other causes of pediatric OSAS include obesity, craniofacial anomalies, and neuromuscular disorders. Obese children may have less satisfactory results with adenotonsillectomy, but it is generally considered the first-line therapy for these patients as well. If the patient is not a candidate for adenotonsillectomy, other treatment options include weight loss (if patient is obese) and continuous positive airway pressure (CPAP). Nocturnal masks for CPAP or procedures for mask respiration are effective in children, but are only used in exceptional cases, such as when adenotonsillectomy is delayed, contraindicated, or when symptoms of OSAS remain after surgery. Severely affected children may require uvulopalatopharyngoplasty (UPPP) or tracheostomy to relieve their obstruction; however, neither have been well studied in children and is rarely indicated. The success of pharmacological treatment of OSAS in children has not been evaluated in controlled clinical trials (Erler and Paditz, 2004).

A Cochrane review (2007) on oral appliances and functional orthopedic appliances for OSA in children 15 years old or younger reported that there is insufficient evidence to state that oral appliances or functional orthopedic appliances are
effective in the treatment of OSAS in children. Oral appliances or functional orthopedic appliances may be helpful in the treatment of children with craniofacial abnormalities that are risk factors of apnea.

According to the American Academy of Pediatrics guideline on the diagnosis and management of childhood OSAS (2002), complex high-risk patients should be referred to a specialist with expertise in sleep disorders. These patients include infants and children with any of the following: craniofacial disorders, Down syndrome, cerebral palsy, neuromuscular disorder, chronic lung disease, sickle cell disease, central hypoventilation syndrome, and genetic/metabolic/storage diseases.

Indications for a repeat NPSG after an adenotonsillectomy or other pharyngeal surgery for OSAS include (i) high-risk children, or (ii) if symptoms of OSAS persist after treatment. High-risk children include those of age younger than 3 years, severe OSAS was present on pre-operative PSG (a respiratory disturbance index of 19 or greater), cardiac complications of OSAS (e.g., right ventricular hypertrophy), failure to thrive, obesity, prematurity, recent respiratory infection, craniofacial anomalies, and neuromuscular disorders. Patients with mild to moderate OSAS who have complete resolution of signs and symptoms do not require repeat NPSG (AAP, 2002).

In a meta-analysis of mandibular distraction osteogenesis, Ow and Cheung (2008) concluded that mandibular distraction osteogenesis is effective in treating craniofacial deformities, but further clinical trials are needed to evaluate the long-term stability and to compare the treatment with conventional treatment methods, especially in cases of OSA or class II mandibular hypoplasia.

Pang and Woodson (2007) evaluated the effectiveness of a new method (expansion sphincter pharyngoplasty [ESP]) to treat OSA. A total of 45 adults with small tonsils, body mass index (BMI) less than 30 kg/m2, of Friedman stage II or III, of type I Fujita, and with lateral pharyngeal wall collapse were selected for the study. The mean BMI was 28.7 kg/m2. The apnea-hypopnea index (AHI) improved from 44.2 +/- 10.2 to 12.0 +/- 6.6 (p < 0.005) following ESP and from 38.1 +/- 6.46 to 19.6 +/- 7.9 in the uvulopalato-pharyngoplasty group (p < 0.005). Lowest oxygen saturation improved from 78.4 +/- 8.52 % to 85.2 +/- 5.1 % in the ESP group (p = 0.003) and from 75.1 +/- 5.9 % to 86.6 +/- 2.2 % in the uvulopalato-pharyngoplasty group (p < 0.005). Selecting a threshold of a 50 % reduction in AHI and AHI less than 20, success was 82.6 % in ESP compared with 68.1 % in uvulopalato-pharyngoplasty (p < 0.05). The authors concluded that ESP may offer benefits in a selected group of OSA patients. These findings need to be validated by studies with larger sample sizes and long-term follow-up.

In a retrospective institutional review board-approved analysis, Wootten and Schott (2010) described their experience of treating retroglossal and base-of- tongue collapse in children and young adults with OSA using combined genioglossus advancement (Repose THS; MedtronicENT, Jacksonville, FL) and radiofrequency ablation of the tongue base. A total of 31 patients with a mean age of 11.5 years (range of 3.1 to 23.0) were included in this analysis. Pre-operative and post-operative polysomnographic data were evaluated for each patient. Success of surgery was determined using the criteria of a post-operative AHI of 5 or fewer events per hour, without evidence of hypoxemia (oxygen saturation as
measured by pulse oximetry), and without prolonged hypercarbia (end-tidal carbon dioxide). Nineteen (61%) of the 31 subjects had Down syndrome. The overall success rate was 61% (19 of 31) (58% [12 of 19] success among patients with Down syndrome and 66% [7 of 12] success among patients without Down syndrome). Overall, the mean AHI improved from 14.1 to 6.4 events per hour (p < 0.001); the mean nadir oxygen saturation as measured by pulse oximetry during apnea improved from 87.4% to 90.9% (p = 0.07). The authors concluded that pediatric OSA refractory to adenotonsillectomy that is due to retroglossal and base-of-tongue collapse remains difficult to treat. However, most patients in this analysis benefited from combined genioglossus advancement and radiofrequency ablation. The findings of this small, retrospective study need to be validated by well-designed studies. Furthermore, these findings are confounded by the combinational use of the Repose system and radiofrequency ablation of the tongue base. It should be noted that the European Respiratory Society's task force on non-CPAP therapies in sleep apneas (Randerath et al, 2011) stated that nasal surgery, radiofrequency tonsil reduction, tongue base surgery, uvulopalatal flap, laser midline glossectomy, tongue suspension and genioglossus advancement can not be recommended as single interventions.

Tracheomalacia is a disorder of the large airways where the trachea is deformed or malformed during respiration. It is associated with a wide spectrum of respiratory symptoms from life-threatening recurrent apnea to common respiratory symptoms such as chronic cough and wheeze. Current practice following diagnosis of tracheomalacia include medical approaches aimed at reducing associated symptoms of tracheomalacia, ventilation modalities of CPAP and bilevel positive airway pressure (BiPAP) as well as surgical interventions aimed at improving the caliber of the airway.

In a prospective, randomized, controlled study, Essouri et al (2005) evaluated the efficacy of CPAP ventilation in infants with severe upper airway obstruction and compared CPAP to BiPAP ventilation. A total of 10 infants (median age of 9.5 months, range of 3 to 18) with laryngomalacia (n = 5), tracheomalacia (n = 3), tracheal hypoplasia (n = 1), and Pierre Robin syndrome (n = 1) were included in this analysis. Breathing pattern and respiratory effort were measured by esophageal and trans-diaphragmatic pressure monitoring during spontaneous breathing, with or without CPAP and BiPAP ventilation. Median respiratory rate decreased from 45 breaths/min (range of 24 to 84) during spontaneous breathing to 29 (range of 18 to 60) during CPAP ventilation. All indices of respiratory effort decreased significantly during CPAP ventilation compared to un-assisted spontaneous breathing (median, range): esophageal pressure swing from 28 to 10 cm H(2)O (13 to 76 to 7 to 28), esophageal pressure time product from 695 to 143 cm H(2)O/s per minute (264 to 1,417 to 98 to 469), diaphragmatic pressure time product from 845 to 195 cm H(2)O/s per minute (264 to 1,417 to 159 to 1,183). During BiPAP ventilation a similar decrease in respiratory effort was observed but with patient-ventilator asynchrony in all patients. The authors concluded that this short-term study showed that non-invasive CPAP and BiPAP ventilation are associated with a significant and comparable decrease in respiratory effort in infants with upper airway obstruction. However, BiPAP ventilation was associated with patient-ventilator asynchrony.
An UpToDate review on "Tracheomalacia and tracheobronchomalacia in adults" (Ernst et al, 2012) states that "[c]ontinuous positive airway pressure (CPAP) can maintain an open airway and facilitate secretion drainage. This is often initiated in the hospital during an acute illness. The patient initially receives continuous CPAP and is gradually transitioned to intermittent CPAP as tolerated. Patients may use intermittent CPAP as long-term therapy. However, CPAP does not appear to have a long-term impact on dyspnea or cough. Positive airway pressure other than CPAP (e.g., bilevel positive airway pressure) may be used instead if hypercapnic respiratory failure exists".

An eMedicine article on "Tracheomalacia Treatment & Management" (Schwartz) stated that "[s]upportive therapy is provided to most infants. Most respond to conservative management, consisting of humidified air, chest physical therapy, slow and careful feedings, and control of infection and secretions with antibiotics. The use of continuous positive airway pressure (CPAP) has been recommended in patients having respiratory distress and may be successful in patients requiring a short-term intervention as the disorder spontaneously resolves". http://emedicine.medscape.com/article/426003-treatment.

The American Academy of Pediatrics’ practice guideline on “Diagnosis and management of childhood obstructive sleep apnea syndrome” (Marcus et al, 2012) focused on uncomplicated childhood OSAS, that is, OSAS associated with adenotonsillar hypertrophy and/or obesity in an otherwise healthy child who is being treated in the primary care setting. Of 3,166 articles from 1999 to 2010, 350 provided relevant data. Most articles were level II to IV. The resulting evidence report was used to formulate recommendations. The following recommendations were made: (i) All children/adolescents should be screened for snoring. (ii) Polysomnography should be performed in children/adolescents with snoring and symptoms/signs of OSAS; if polysomnography is not available, then alternative diagnostic tests or referral to a specialist for more extensive evaluation may be considered, (iii) Adenotonsillectomy is recommended as the first-line treatment of patients with adenotonsillar hypertrophy, (iv) High-risk patients should be monitored as inpatients post-operatively, (v) Patients should be re-evaluated post-operatively to determine whether further treatment is required. Objective testing should be performed in patients who are high-risk or have persistent symptoms/signs of OSAS after therapy, (vi) CPAP is recommended as treatment if adenotonsillectomy is not performed or if OSAS persists post-operatively, (vii) Weight loss is recommended in addition to other therapy in patients who are overweight or obese, and (viii) Intra-nasal corticosteroids are an option for children with mild OSAS in whom adenotonsillectomy is contraindicated or for mild post-operative OSAS. The updated guideline did not mention the use of lingual tonsillectomy as a management tool for OSA in children and adolescents.

Kim and colleagues (2013) noted that OSA is a common health problem in children and increases the risk of cardiovascular disease (CVD). Triggering receptor expressed on myeloid cells-1 (TREM-1) plays an important role in innate immunity and amplifies inflammatory responses. Pentraxin-3 is predominantly released from macrophages and vascular endothelial cells, plays an important role in atherogenesis, and has emerged as a biomarker of CVD risk. Thus, these researchers hypothesized that plasma TREM-1 and pentraxin-3 levels would be
elevated in children with OSA. A total of 106 children (mean age of: 8.3 ± 1.6 yrs) were included after they underwent over-night polysomnographic evaluation and a fasting blood sample was drawn the morning after the sleep study. Endothelial function was assessed with a modified hyperemic test after cuff-induced occlusion of the brachial artery. Plasma TREM-1 and pentraxin-3 levels were assayed using commercial enzyme-linked immunosorbent assay kits. Circulating microparticles (MPs) were assessed using flow cytometry after staining with cell-specific antibodies. Children with OSA had significantly higher TREM-1 and pentraxin-3 levels (versus controls: p < 0.01, p < 0.05, respectively). Plasma TREM-1 was significantly correlated with both BMI-z score and the obstructive AHI in uni-variate models. Pentraxin-3 levels were inversely correlated with BMI-z score (r = -0.245, p < 0.01), and positively associated with endothelial MPs and platelet MPs (r = 0.230, p < 0.01 and r = 0.302, p < 0.01). Both plasma TREM-1 and pentraxin-3 levels were independently associated with AHI in multi-variate models after controlling for age, sex, race, and BMI-z score (p < 0.001 for TREM-1 and p < 0.001 for pentraxin-3). However, no significant associations emerged between TREM-1, pentraxin-3, and endothelial function. The authors concluded that plasma TREM-1 and pentraxin-3 levels were elevated in pediatric OSA, and may play a role in modulating the degree of systemic inflammation. Moreover, they stated that the short-term and long-term significance of elevated TREM-1 and pentraxin-3 in OSA-induced end-organ morbidity remains to be defined.

Gozal and associates (2013) tested the hypothesis that concentrations of adropin, a recently discovered peptide that displays important metabolic and cardiovascular functions, are lower in OSA, especially when associated with endothelial dysfunction. Age-, sex-, and ethnicity-matched children (mean age of 7.2 ± 1.4 years) were included into 1 of 3 groups based on the presence of OSA in an overnight sleep study, and on the time to post-occlusive maximal re-perfusion (Tmax greater than 45 seconds) with a modified hyperemic test. Plasma adropin concentrations were assayed using a commercial enzyme-linked immunosorbent assay kit. Among controls, the mean morning adropin concentration was 7.4 ng/ml (95 % CI: 5.2 to 16.3 ng/ml). Children with OSA and abnormal endothelial function (EF) (OSA+/EF+ group) had significantly lower adropin concentrations (2.7 ± 1.1 ng/ml; n = 35) compared with matched controls (7.6 ± 1.4 ng/ml; n = 35; p < 0.001) and children with OSA and normal EF (OSA+/EF- group; 5.8 ± 1.5 ng/ml; n = 47; p < 0.001). A plasma adropin concentration less than 4.2 ng/ml reliably predicted EF status, but individual adropin concentrations were not significantly correlated with age, BMI z-score, obstructive AHI, or nadir oxygen saturation. Mean adropin concentration measured after adenotonsillectomy in a subset of children with OSA (n = 22) showed an increase in the OSA+/EF+ group (from 2.5 ± 1.4 to 6.4 ± 1.9 ng/ml; n = 14; p < 0.01), but essentially no change in the OSA+/EF- group (from 5.7 ± 1.3 to 6.4 ± 1.1 ng/ml; n = 8; p > 0.05). The authors concluded that plasma adropin concentrations were reduced in pediatric OSA when endothelial dysfunction is present, and returned to within normal values after adenotonsillectomy. They stated that assessment of circulating adropin concentrations may provide a reliable indicator of vascular injury in the context of OSA in children. These preliminary findings need to be validated by well-designed studies.

Posadzki and colleagues (2013) critically evaluated the effectiveness of osteopathic manipulative treatment (OMT) as a treatment of pediatric conditions.
A total of 11 databases were searched from their respective inceptions to November 2012. Only randomized clinical trials (RCTs) were included, if they tested OMT against any type of control in pediatric patients. Study quality was critically appraised by using the Cochrane criteria. A total of 17 trials met the inclusion criteria; 5 RCTs were of high methodological quality. Of those, 1 favored OMT, whereas 4 revealed no effect compared with various control interventions. Replications by independent researchers were available for 2 conditions only, and both failed to confirm the findings of the previous studies. Seven RCTs suggested that OMT leads to a significantly greater reduction in the symptoms of asthma, congenital nasolacrimal duct obstruction (post-treatment), daily weight gain and length of hospital stay, dysfunctional voiding, infantile colic, otitis media, or postural asymmetry compared with various control interventions. Seven RCTs indicated that OMT had no effect on the symptoms of asthma, cerebral palsy, idiopathic scoliosis, obstructive apnea, otitis media, or temporo-mandibular disorders compared with various control interventions. Three RCTs did not perform between-group comparisons. The majority of the included RCTs did not report the incidence rates of adverse effects. The authors concluded that the evidence of the effectiveness of OMT for pediatric conditions remains unproven due to the paucity and low methodological quality of the primary studies.

There is also a lack of evidence regarding the clinical effectiveness of chiropractic manipulation for the treatment of sleep apnea.

The evidence on the use of midline/partial glossectomy for the treatment of OSA is not RCT-based; the data are mostly from case-series studies.

The Adult Obstructive Sleep Apnea Task Force of the American Academy of Sleep Medicine's clinical guideline on "The evaluation, management and long-term care of obstructive sleep apnea in adults" (Epstein et al, 2009) stated that "

Tracheostomy can eliminate OSA but does not appropriately treat central hypoventilation syndromes (Consensus). Maxillary and mandibular advancement can improve PSG parameters comparable to CPAP in the majority of patients (Consensus). Most other sleep apnea surgeries are rarely curative for OSA but may improve clinical outcomes (e.g., mortality, cardiovascular risk, motor vehicle accidents, function, quality of life, and symptoms) (Consensus). Laser-assisted uvulopalatoplasty is not recommended for the treatment of obstructive sleep apnea (Guideline)". This guideline does not mention the use of midline glossectomy.

The American Sleep Disorders Association's practice parameters on "The surgical modifications of the upper airway for obstructive sleep apnea in adults" (Aurora et al, 2010) did not mention midline/partial glossectomy as a therapeutic option.

The European Respiratory Society task force on non-CPAP therapies in sleep apnea (Randerath et al, 2011) noted that "Nasal surgery, radiofrequency tonsil reduction, tongue base surgery, uvulopalatal flap, laser midline glossectomy, tongue suspension and genioglossus advancement cannot be recommended as single interventions".

Furthermore, an UpToDate review on "Management of obstructive sleep apnea in children" (Paruthi, 2014) states that "Tongue reduction surgery has been proposed for the management of OSA related to macroglossia (e.g., Beckwith-Wiedemann
syndrome, Down syndrome). Additional studies are needed to determine the efficacy of this procedure in such patients, especially since a case series of 13 patients with Beckwith-Wiedemann syndrome found that adenotonsillectomy was more effective than tongue reduction in relieving upper airway obstruction”.

**CPT Codes / HCPCS Codes / ICD-9 Codes**

**Diagnosis:**

**CPT codes covered if selection criteria are met:**

95782
95783
95808
95810
95811

**CPT codes not covered for indications listed in the CPB:**

76120 -
76125
95800
95801
95806
95807
94762

**Other CPT codes related to the CPB:**

42700 -
42999

**HCPCS codes not covered for indications listed in the CPB:**

E0445  Oximeter device for measuring blood oxygen levels non-invasively [nocturnal]

G0398  Home sleep study test (HST) with type II portable monitor, unattended; minimum of 7 channels: EEG, EOG, EMG, ECG/heart rate, airflow, respiratory effort and oxygen saturation

G0399  Home sleep test (HST) with type III portable monitor, unattended; minimum of 4 channels: 2 respiratory movement/airflow, 1 ECG/heart rate and 1 oxygen saturation
G0400 Home sleep test (HST) with type IV portable monitor, unattended; minimum of 3 channels

**ICD-9 codes covered if selection criteria are met:**

327.23 Obstructive sleep apnea (adult) (pediatric) [OSAS]
786.09 Other dyspnea and respiratory abnormality [habitual snoring during sleep]

**Other ICD-9 codes related to the CPB:**

034.0 Streptococcal sore throat
079.6 Respiratory syncytial virus (RSV)
278.00 - Overweight and obesity
278.02
358.00 - Myoneural disorders
358.9
429.3 Cardiomegaly
460 - 466.19 Acute respiratory infections
487.0 - 488 Influenza
756.0 Anomalies of skull and face bones
765.00 - Extreme immaturity and other preterm infants
765.19
780.50 - Sleep disturbances
780.59
783.41 Failure to thrive

*Treatment: tonsils & adenoids:*

**CPT codes covered if selection criteria are met:**

42820 -
42821

**ICD-9 codes covered if selection criteria are met:**

474.02 Chronic tonsillitis and adenoiditis
474.10 Hypertrophy of tonsils and adenoids

*Treatment: CPAP:*

**CPT codes covered if selection criteria are met:**

94660
CPT codes not covered for indications listed in the CPB:

20692 -
20697
30000 -
30999
30801
30802
41512
41530
42140
42145
42160
42870
42890
42950

HCPCS codes covered if selection criteria are met:

A7027 Combination oral/nasal mask, used with continuous positive airway pressure device, each
A7028 Oral cushion for combination oral/nasal mask, replacement only, each
A7029 Nasal pillows for combination oral/nasal mask, replacement only, pair
A7030 Full face mask used with positive airway pressure device, each
A7031 Face mask interface, replacement for full face mask, each
A7032 Cushion for use on nasal mask interface, replacement only, each
A7033 Pillow for use on nasal cannula type interface, replacement only, pair
A7034 Nasal interface (mask or cannula type) used with positive airway pressure device, with or without head strap
A7035 Headgear used with positive airway pressure device
A7036 Chinstrap used with positive airway pressure device
<table>
<thead>
<tr>
<th>Code</th>
<th>Item Description</th>
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</thead>
<tbody>
<tr>
<td>A7037</td>
<td>Tubing used with positive airway pressure device</td>
</tr>
<tr>
<td>A7038</td>
<td>Filter, disposable, used with positive airway pressure device</td>
</tr>
<tr>
<td>A7039</td>
<td>Filter, non-disposable, used with positive airway pressure device</td>
</tr>
<tr>
<td>A7044</td>
<td>Oral interface used with positive airway pressure device, each</td>
</tr>
<tr>
<td>A7045</td>
<td>Exhalation port with or without swivel used with accessories for positive airway devices, replacement only</td>
</tr>
<tr>
<td>A7046</td>
<td>Water chamber for humidifier, used with positive airway pressure device, replacement, each</td>
</tr>
<tr>
<td>E0470</td>
<td>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)</td>
</tr>
<tr>
<td>E0472</td>
<td>Respiratory assist device, bi-level pressure capability, with back-up rate feature, used with invasive interface, e.g., tracheostomy tube (intermittent assist device with continuous positive airway pressure device)</td>
</tr>
<tr>
<td>E0485</td>
<td>Oral device/appliance used to reduce upper airway collapsibility, adjustable or non-adjustable, prefabricated, includes fitting and adjustment [covered for children with craniofacial anomalies only]</td>
</tr>
<tr>
<td>E0486</td>
<td>Oral device/appliance used to reduce upper airway collapsibility, adjustable or non-adjustable, custom fabricated, includes fitting and adjustment [covered for children with craniofacial anomalies only]</td>
</tr>
<tr>
<td>E0561</td>
<td>Humidifier, non-heated, used with positive airway pressure device</td>
</tr>
<tr>
<td>E0562</td>
<td>Humidifier, heated, used with positive airway pressure device</td>
</tr>
<tr>
<td>E0601</td>
<td>Continuous positive airway pressure (CPAP) device</td>
</tr>
</tbody>
</table>

**HCPCS codes not covered for indications listed in the CPB:**

- C9727  Insertion of implants into the soft palate; minimum of three implants
- S2080  Laser-assisted uvulopalatoplasty (LAUP)

**ICD-9 codes covered if selection criteria are met:**

- 327.23 Obstructive sleep apnea (adult) (pediatric) [OSAS]
- 519.19 Other diseases of trachea and bronchus [tracheomalacia]
Primary apnea of newborn

Other ICD-9 codes related to the CPB:

- 748.3 Other anomalies of larynx, trachea, and bronchus [congenital tracheomalacia]
- 756.0 Anomalies of skull and face bones
- 780.50 - 780.59 Sleep disturbances

The above policy is based on the following references:


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