MEDICAL POLICY – 2.01.503
Polysomnography and Home Sleep Study for Diagnosis of Obstructive Sleep Apnea

Effective Date: March 1, 2017
Last Revised: Oct. 6, 2017
Replaces: 2.01.18

RELATED MEDICAL POLICIES:
2.01.73 Actigraphy
2.01.99 Polysomnography for Non-Respiratory Sleep Disorders
2.01.532 Intra Oral Appliances for the Treatment of Obstructive Sleep Apnea
7.01.516 Bariatric Surgery
7.01.554 Surgical Treatment of Snoring and Obstructive Sleep Apnea Syndrome
9.02.501 Orthognathic Surgery

Select a hyperlink below to be directed to that section.

POLICY CRITERIA | CODING | RELATED INFORMATION
EVIDENCE REVIEW | REFERENCES | APPENDIX | HISTORY

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Introduction

Sleep apnea is a condition where a person does not get enough oxygen while they are sleeping. Usually this is caused by breathing problems where breathing either stops or is not deep enough to maintain oxygen in the blood. There are different types of sleep apnea, with the most common being obstructive sleep apnea (OSA). For people who have OSA, the muscles in the upper throat relax and create a blockage in your airway. Significant snoring may be one sign of sleep OSA, however snoring alone does not make the diagnosis. Daytime sleepiness is another common finding. To make the diagnosis of OSA an overnight sleep study is needed. (The technical term for this study is polysomnography.) For most people an overnight sleep study can be done in the home to see if this disorder is present. The best treatment of OSA for most people is using a positive airway pressure (PAP) device when you sleep. Again, for many people, a study of the PAP pressure device to see if it’s being effective can be done in the home. For others, or to diagnose other sleep problems, the sleep study needs to be done in a lab with a technician present. This policy outlines when lab studies are medically necessary for the diagnosis of sleep apnea or adjusting PAP pressure.
Note: The Introduction section is for your general knowledge and is not to be taken as policy coverage criteria. The rest of the policy uses specific words and concepts familiar to medical professionals. It is intended for providers. A provider can be a person, such as a doctor, nurse, psychologist, or dentist. A provider also can be a place where medical care is given, like a hospital, clinic, or lab. This policy informs them about when a service may be covered.

### Policy Coverage Criteria

<table>
<thead>
<tr>
<th>Home / Unattended Sleep Study</th>
<th>Medical Necessity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults</td>
<td>Home/unattended (unsupervised) sleep study testing (HST) may be considered medically necessary for adult patients who have symptoms suggestive of obstructive sleep apnea (OSA), when ALL of the following criteria are met:</td>
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<tr>
<td></td>
<td>• Absence of health conditions that decrease accuracy of the study including, but not limited to:</td>
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<tr>
<td></td>
<td>• Congestive heart failure</td>
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<td></td>
<td>• Hypoventilation syndrome (as evidenced by a serum bicarbonate &gt;27mmol/L or PaCO2 &gt;45mmHg)</td>
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<td>• Moderate to severe lung (pulmonary) disease</td>
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<td>• Neuromuscular disease</td>
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<td>AND</td>
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<td></td>
<td>• Absence of suspicion of other sleep disorders not related to airway obstruction including, but not limited to:</td>
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<tr>
<td></td>
<td>o Narcolepsy</td>
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<td></td>
<td>o Parasomnias</td>
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<tr>
<td></td>
<td>Notes: Suspicion of a sleep disorder not related to airway obstruction, see the is addressed in s a separate medical policy, see Related Policies.</td>
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<td>AND</td>
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<td>• The device used for HST has a minimum of 4 recording channels that includes:</td>
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<td>o Airflow</td>
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<td>o EKG or heart rate</td>
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<td>Home / Unattended Sleep Study</td>
<td>Medical Necessity</td>
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|                               | o Oxygen saturation level  
|                               | o Respiratory movement  
|                               | Testing is limited to 1 night per home based sleep testing episode if testing confirms the presence of obstructive sleep apnea. A second night of home sleep testing is allowed if technical difficulties occur. For an inconclusive HST result see criteria for Facility/Laboratory Polysomnography (PSG) Sleep Study.  
|                               | The medical professional who is interpreting a home/unattended sleep study test result should have training in sleep medicine.  
| Repeat sleep study testing    | Repeat sleep study testing in the home/unattended setting, may be considered medically necessary for any of the following:  
|                               | • To assess efficacy of surgery or an oral appliance/device for treatment of sleep apnea  
|                               | • A home sleep study with non-diagnostic results was done within the past 3 months (eg, technical complications or negative/ inconclusive test results) when the patient has a high pretest probability of OSA, and continued symptoms are suggestive of OSA  
|                               | • Failure to resolve OSA symptoms or recurrence of symptoms during treatment  
|                               | • To re-evaluate the need for continued PAP device use when health status changes have occurred (eg, a significant change in weight or a change in OSA symptoms)  
| No symptoms suggestive of obstructive sleep apnea (OSA) | A home/unattended sleep study is considered not medically necessary when there are no symptoms suggestive of obstructive sleep apnea.  

<table>
<thead>
<tr>
<th>Home / Unattended Sleep Study</th>
<th>Investigational</th>
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<tbody>
<tr>
<td>Children under 18</td>
<td>Home/unattended sleep study testing is considered investigational in children younger than 18 years of age.</td>
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<table>
<thead>
<tr>
<th>Facility / Laboratory Attended Polysomnography (PSG) Sleep Study</th>
<th>Medical Necessity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults who meet criteria for a home sleep study</td>
<td>Facility/laboratory attended PSG is considered not medically necessary when adult patients meet the criteria for an unattended home sleep study.</td>
</tr>
</tbody>
</table>
| Symptoms suggestive of OSA                                       | Facility/laboratory (attended) nocturnal polysomnography may be considered medically necessary for patients with symptoms suggestive of obstructive sleep apnea (OSA) when:  
  • A previous home/unattended sleep study was technically inadequate  
  OR  
  • A previous home/unattended sleep study failed to establish the diagnosis of OSA in a patient with a high pretest probability of OSA (see Related Information)  
  OR  
  • A home/unattended sleep study is contraindicated due to other health conditions that decrease the accuracy of the study, including but not limited to:  
    o Congestive heart failure  
      Hypoventilation syndrome (as evidenced by a serum bicarbonate >27mmol/L or PaCO2 >45mmHg  
    o Moderate to severe pulmonary disease  
    o Neuromuscular disease |
<p>| Split-night facility/laboratory attended PSG study               | A split-night facility/laboratory attended PSG study may be considered medically necessary when patients do not meet criteria for home/unattended sleep study testing as described above. |</p>
<table>
<thead>
<tr>
<th>Facility / Laboratory Attended Polysomnography (PSG) Sleep Study</th>
<th>Medical Necessity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repeat sleep study testing</td>
<td>Repeat sleep study testing in the facility/attended setting, when appropriate, may be considered medically necessary:</td>
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<tr>
<td></td>
<td>• To assess efficacy of surgery or an oral appliance/device to treat sleep apnea in a member who has contraindications to home based testing OR</td>
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<tr>
<td></td>
<td>• A home sleep study with non-diagnostic results was done within the past 3 months (negative/ inconclusive test results) when the patient has a high pretest probability of OSA, and continued symptoms are suggestive of OSA OR</td>
</tr>
<tr>
<td></td>
<td>• Failure to resolve OSA symptoms or recurrence of symptoms during treatment</td>
</tr>
<tr>
<td>No symptoms suggestive of OSA</td>
<td>A facility/laboratory attended sleep study is considered not medically necessary when there are no symptoms suggestive of obstructive sleep apnea.</td>
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</table>

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<thead>
<tr>
<th>Pap Device Initiation With Pressure Titration</th>
<th>Medical Necessity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home-based</td>
<td>Home/unattended PAP device pressure titration may be considered medically necessary for adult patients who have a diagnosis of OSA, and who do not have other health conditions, including but not limited to:</td>
</tr>
<tr>
<td></td>
<td>• Congestive heart failure</td>
</tr>
<tr>
<td></td>
<td>• Hypoventilation syndrome (as evidenced by a serum bicarbonate &gt;27mmol/L or PaCO2 &gt;45mmHg)</td>
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<td></td>
<td>• Moderate to severe pulmonary disease</td>
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<tr>
<td></td>
<td>• Neuromuscular disease</td>
</tr>
<tr>
<td>Facility-based</td>
<td>Facility/laboratory attended PAP device pressure titration may be considered medically necessary for patients when home/unattended PAP device pressure titration is contraindicated due to other health</td>
</tr>
</tbody>
</table>
### Pap Device Initiation With Pressure Titration

**Medical Necessity**

Contraindications to home/unattended PAP device pressure titration include, but are not limited to the following health conditions:

- Congestive heart failure
- Hypoventilation syndrome (as evidenced by a serum bicarbonate >27mmol/L or PaCO2 >45mmHg)
- Moderate to severe pulmonary disease
- Narcolepsy
- Neuromuscular disease
- Under 19 years of age

Facility/laboratory attended PAP device pressure titration is considered not medically necessary when adult patients meet the criteria for unattended/home-based PAP device titration.

### Initiation of PAP therapy following diagnosis

**Once the patient has been diagnosed with OSA based on the sleep study results, the initial PAP therapy and device titration could start at any time. A repeat sleep study is not required even if there is a gap of several months between the confirmatory sleep study and the start of PAP treatment. However, the home equipment supplier may require a new prescription for the PAP device if the time since the study is over 12 months.**

**Note:** (See Related Policies for PAP device trial use/rental requirement and adherence criteria.)

**Procedure**

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Investigational</th>
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<tbody>
<tr>
<td>PAP-NAP</td>
<td>The daytime PAP-NAP desensitization procedure is considered investigational.</td>
</tr>
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</table>
### Coding

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>CPT</td>
<td></td>
</tr>
<tr>
<td>94762</td>
<td>Noninvasive ear or pulse oximetry for oxygen saturation; by continuous overnight monitoring (separate procedure)</td>
</tr>
<tr>
<td>95800</td>
<td>Sleep study, unattended, simultaneous recording; heart rate, oxygen saturation, respiratory analysis (eg, by airflow or peripheral arterial tone), and sleep time</td>
</tr>
<tr>
<td>95801</td>
<td>Sleep study, unattended, simultaneous recording; minimum of heart rate, oxygen saturation, and respiratory analysis (eg, by airflow or peripheral arterial tone)</td>
</tr>
<tr>
<td>95806</td>
<td>Sleep study, simultaneous recording of ventilation, respiratory effort, ECG or heart rate, and oxygen saturation, unattended by a technologist</td>
</tr>
<tr>
<td>95807</td>
<td>Sleep study, simultaneous recording of ventilation, respiratory effort, electrocardiogram (ECG) or heart rate, and oxygen saturation, attended by a technologist</td>
</tr>
<tr>
<td>95808</td>
<td>Polysomnography; any age, sleep staging with 1-3 additional parameters of sleep, attended by a technologist</td>
</tr>
<tr>
<td>95810</td>
<td>Polysomnography; sleep staging with 4 or more additional parameters of sleep, attended by a technologist</td>
</tr>
<tr>
<td>95811</td>
<td>Polysomnography; age 6 years or older, sleep staging with 4 or more additional parameters of sleep, with initiation of continuous positive airway pressure therapy or bilevel ventilation, attended by a technologist</td>
</tr>
</tbody>
</table>

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### Related Information

#### Risk Assessment for Suspected Obstructive Sleep Apnea (OSA)

Criteria for the diagnosis of obstructive sleep apnea (OSA) are based on clinical signs and symptoms discovered during a comprehensive sleep evaluation that includes a history of sleep behavior disturbances, a general history and physical examination, and findings identified by sleep testing.

Patients with a high pretest probability for OSA include those with the following conditions:
- Atrial fibrillation
- Congestive heart failure
- Nocturnal dysrhythmias
- Obesity (defined as a BMI greater than 35 kg/m²)
- Patients being evaluated for bariatric surgery (described in another paragraph)
- Pulmonary hypertension
- Resistant hypertension (refractory to treatment)
- Stroke
- Type 2 diabetes

A routine OSA health evaluation screen should include:

- History of snoring and daytime sleepiness
- An evaluation for the presence of obesity (BMI greater than 35 kg/m²)
- Hypertension (high blood pressure)
- Retrognathia (recessed lower jaw)

Positive findings from the OSA health evaluation screen should lead to a more comprehensive physical examination and sleep oriented history that includes questions about:

- Decreased concentration and memory
- Evaluation for snoring
- Excessive sleepiness not explained by other factors, including assessment of sleepiness severity by the Epworth Sleepiness Scale (see Appendix)
- Gasping/choking episodes
- Morning headaches
- Nocturia (nighttime urination) frequency
- Sleep fragmentation/sleep maintenance insomnia
- Total sleep amount
• Witnessed cessation of breathing (apneic events) when asleep

Patients Scheduled for Bariatric Surgery

A sleep study for obstructive sleep apnea (OSA) may be part of the preoperative evaluation of patients scheduled for bariatric surgery (see Related Policies). The decision for a home based sleep study test or a facility based sleep study test is based on the criteria in the Policy section in this medical policy.

Definition of Terms

**Chronic obstructive pulmonary disease (COPD):** Characterized by airflow limitation that is usually progressive making it hard to breathe. The condition is associated with an enhanced chronic inflammatory response in the airways and the lung to irritants such as noxious particles or gases (source: Up To Date).

**Circadian rhythm:** An innate daily fluctuation of physiologic or behavior functions, including sleep-wake states, generally tied to the 24-hour daily dark-light cycle. This rhythm sometimes occurs at a measurable different periodicity (eg, 23 or 25 hours) when light-dark and other time cues are removed (AASM).

**Epworth sleepiness scale (ESS):** A short self-administered survey that asks patients how likely they are to fall asleep vs just feeling tired in 8 different situations (see Appendix).

**Excessive daytime sleepiness (EDS):** Also known as somnolence or hypersomnia. A subjective report of difficulty in maintaining the alert awake state during the day, usually accompanied by easily falling asleep when the person is sedentary. Excessive sleepiness may be due to an excessively deep or prolonged major sleep episode. It can be quantitatively measured by use of subjectively defined rating scales of sleepiness or physiologically measured by electrophysiological tests such as the multiple sleep latency tests (MSLT). Excessive sleepiness most commonly occurs during the daytime, but it may be present at night in a person, such as a shift worker who has the major sleep episode during the daytime (AASM).

**Insomnia:** Characterized by a complaint of difficulty initiating sleep, maintaining sleep, and/or nonrestorative sleep that causes clinically significant distress or impairment in social, occupational, or other important areas of functioning (AASM).
**Obesity hypoventilation syndrome (OHS):** Also known as Pickwickian syndrome, this is a breathing disorder that prevents good air/gas exchange in the lungs. Some obese people have OHS due to excess tissue in the neck area that may collapse the airway or excess abdominal fat that prevents the lungs from fully expanding with each breath. The poor breathing (hypventilation) seen in OHS results in too much carbon dioxide (hypercapnia) and too little oxygen in the blood (hypoxemia). Lab results showing a serum bicarbonate level or arterial blood gas can help with the diagnosis of OHS.

**Polysomnogram (PSG):** Also known as a “sleep study”, this is a diagnostic test for obstructive sleep apnea. The patient is connected to a variety of monitoring devices that record at least 4 physiologic variables while sleeping (eg, heart rate, sleep/wake activity, blood oxygen saturation, respiratory effort monitoring)

**Sleep apnea:** A condition where a person’s breathing frequently pauses or stops while sleeping, usually for 10 seconds or more at one time.

**Sleep disorder:** Interference in sleep continuity and central nervous system sleep/wake cycle that may be caused by respiratory and/or non-respiratory conditions.

**Titration testing (of a PAP device):** A test done to find the right airflow pressure settings of the equipment to keep the patient’s airway open while allowing the patient to sleep. The airflow pressure of the PAP device is “titrated” (increased/decreased) to discover a single fixed pressure that works for the individual. In the home setting a device is used that can perform this titration task automatically.

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**Evidence Review**

**Background**

**Description of Disease**

Obstructive sleep apnea (OSA) syndrome is characterized by repetitive episodes of upper airway obstruction due to the collapse of the upper airway during sleep. This causes a drop in blood oxygenation and a brief arousal, and can occur as frequently as every minute throughout the night. The most common signs and symptoms in adults are snoring, excessive daytime sleepiness, and hypertension. Excessive daytime sleepiness may be subjective, and is assessed by questionnaires such as the Epworth Sleepiness Scale (see **Appendix**), a short self-administered
questionnaire that asks patients how likely they are to fall asleep in different scenarios such as watching TV, sitting quietly in a car, or sitting and talking to someone. Daytime sleepiness is uncommon in young children with OSA. Symptoms in children may include disturbed sleep and daytime neurobehavioral problems. In otherwise health children, OSA is usually associated with adenotonsillar hypertrophy and/or obesity.

A hallmark sign of OSA is snoring. The snoring abruptly ceases during the apneic episodes and during the brief period of patient arousal and then resumes when the patient again falls asleep. Upper airway resistance syndrome is a variant of OSA that is characterized by a partial collapse of the airway, resulting in increased resistance to airflow. The increased respiratory effort is associated with multiple sleep fragmentations, as measured by very short alpha electroencephalographic (EEG) arousals (‘respiratory event-related arousals’[RERAs]). The sleep fragmentation associated with repeated sleep disruption can lead to impairment of daytime activity. Adult patients with OSA-associated daytime somnolence are thought to be at higher risk for accidents involving motorized vehicles, ie, cars, trucks, or heavy equipment, while OSA in children may result in neurocognitive impairment and behavioral problems.

OSA can also affect the cardiovascular and pulmonary systems. For example, apnea leads to periods of hypoxemia, alveolar hypoventilation, hypercapnia, and acidosis. This in turn can cause systemic hypertension, cardiac arrhythmias, pulmonary hypertension, and cor pulmonale. Systemic hypertension is common in patients with OSA. Severe OSA is also associated with decreased survival, presumably related to severe hypoxemia, hypertension, or an increase in automobile accidents related to daytime sleepiness. It is estimated that about 7% of adults have moderate or severe OSA, and 20% have at least mild OSA. The referral population of OSA patients represents a small proportion of patients who have clinically significant treatable disease.¹

**Diagnosis**

The gold standard diagnostic test for sleep disorders is considered to be a polysomnogram performed in a sleep laboratory.² A standard polysomnogram supervised by a sleep lab technician includes EEG, submental electromyogram (EMG) and electro-oculogram (to detect rapid eye movement [REM] sleep) for sleep staging. PSG also typically includes electrocardiography and monitoring of respiratory airflow, effort, snoring, oxygen desaturation, and sleep position.

Typically, the evaluation of OSA includes sleep staging to assess arousals from sleep and determination of the frequency of apneas and hypopneas. In adults, apnea is defined as a drop
in the peak signal excursion (airflow) by 90% or more of pre-event baseline for at least 10 seconds. Hypopnea in adults is scored when the peak signal excursions drop by at least 30% of pre-event baseline for at least 10 seconds in association with either at least 3% arterial oxygen desaturation or an arousal. The Apnea/Hypopnea Index (AHI) may also be referred to as the Respiratory Disturbance Index (RDI). The AHI is defined as the total number of events per hour of sleep. RDI may be defined as the number of apneas, hypopneas, and RERAs per hour of sleep. When sleep onset and offset are unknown, eg, in home sleep studies, the RDI may be calculated based on the number of apneas and hypopneas per hour of recording time. A diagnosis of OSA is accepted when an adult patient has an AHI greater than 5 and symptoms of excessive daytime sleepiness or unexplained hypertension. An AHI equal to or greater than 15 is typically considered moderate OSA, while an AHI greater than 30 is considered severe OSA.

Due to faster respiratory rates in children, pediatric scoring criteria define an apnea as 2 or more missed breaths, regardless of its duration in seconds. An apnea is scored when peak signal excursions (airflow) drop by at least 90% of pre-event baseline using an oronasal thermal sensor (diagnostic study), PAP device flow (titration study), or an alternative sensor. Also, the event meets duration and respiratory effort criteria for an obstructive, mixed, or central apnea. A hypopnea is scored in children when the peak signal excursions drop is at least 30% of pre-event baseline using nasal pressure (diagnostic study) PAP device flow (titration study), or an alternative sensor, for at least the duration of 2 breaths in association with either a 3% or greater oxygen desaturation or an arousal. In pediatric patients, an AHI greater than 1.5 is considered abnormal, and an AHI of 15 or greater is considered severe. Although there is poor correlation between AHI and OSA symptoms, an increase in mortality is associated with an AHI of greater than 15 in adults. Mortality has not been shown to be increased in adult patients with an AHI between 5 (considered normal) and 15.

A variety of devices have been developed specifically to evaluate OSA at home. These range from portable full PSG systems to single channel oximeters. Available devices evaluate different parameters, which may include oximetry, respiratory and cardiac monitoring, and sleep/wake activity, but the majority of portable monitors do not record EEG.

**Medical Management**

Medical management of OSA includes weight loss, oral appliances, and various types of positive airway pressure (PAP) therapy (ie, fixed/continuous positive airway pressure [CPAP], bilevel positive airway pressure [BiPAP], or auto-adjusting CPAP [APAP]). CPAP involves the administration of air, usually through the nose, by an external device at a fixed pressure to
maintain the patency of the upper airway. Medical Management of OSA using DME (CPAP, BiPAP, APAP) is covered in a separate policy (see Related Policies).

**Surgical Intervention**

Surgical management of OSA (ie, adenotonsillectomy, uvulopalatopharyngoplasty, orthognathic surgery) is discussed in separate policies (see Related Policies).

**Evidence Review**

This policy was originally created in 1998. Since that time the policy has been reviewed and updated using PubMed literature searches. The most recent search was through January 2017.

In 2011, the Agency for Healthcare Research and Quality (AHRQ) conducted a comparative effectiveness review (CER) on the diagnosis and treatment of OSA in adults. The CER found strong evidence that an AHI greater than 30 events/hour is an independent predictor of all-cause mortality, with low or insufficient evidence for an association between AHI and other clinical outcomes. The CER found moderate evidence that type 3 and type 4 monitors may have the ability to accurately predict AHI suggestive of OSA and that type 3 monitors perform better than type 4 monitors at AHI cutoffs of 5, 10, and 15 events per hour. Despite no or weak evidence for an effect of CPAP on clinical outcomes, given the large magnitude of effect on the intermediate outcomes of AHI, Epworth Sleepiness Scale (ESS), and arousal index, the strength of evidence that CPAP is an effective treatment to alleviate sleep apnea signs and symptoms was rated moderate. The strength of the evidence that mandibular advancement devices improve sleep apnea signs and symptoms was rated moderate, and there was moderate evidence that CPAP is superior to mandibular advancement devices in improving sleep study measures.

Based on the current evidence and society guidelines, portable monitoring with a minimum of 4 recording channels (including oxygen saturation, respiratory movements, airflow and electrocardiogram or heart rate) for the diagnosis of OSA in adult patients who are at high risk for OSA improves outcomes, when clinical evaluation and follow-up is conducted by a medical professional experienced in the diagnosis and treatment of sleep disorders.

The following evidence review focuses, therefore, on novel methods of diagnosis of OSA. In addition, the use of novel treatments of OSA, including expiratory positive airway pressure (EPAP) and oral pressure therapy (OPT), is reviewed.
Use of APAP for Diagnosis and Treatment with Supervision by a Sleep Specialist

Mulgrew et al. published a randomized validation study of the diagnosis and management of OSA with a single channel monitor followed by APAP. They developed a diagnostic algorithm that was found to have a 94% positive predictive value for moderate to severe OSA assessed by PSG. Patients who passed the screening (n=68) were randomized to either attended in-laboratory PSG with CPAP titration or to home monitoring with a portable APAP unit. No difference was observed between lab-PSG and home-managed patients in any of the outcome measures.

Senn et al assessed whether an empiric approach, using only a 2-week trial of APAP, could be effective for the diagnosis of OSA. Patients (n=76) were included in the study if they had been referred by primary care physicians for evaluation of suspected OSA, were habitual snorers, complained of daytime sleepiness, and had an ESS score of 8 or greater (mean of 13.6). At the end of the 2-week trial, patients were asked to rate the perceived effect of treatment and to indicate whether they had used CPAP for more than 2 hours per night and were willing to continue treatment. Patients without a clear benefit of CPAP received further evaluation including clinical assessment and PSG. Compared with PSG, patient responses showed sensitivity of 80%, specificity of 97%, and positive and negative predictive values of 97% and 78%, respectively.

Peripheral Arterial Tone

In 2009, CMS issued a coverage decision to accept use of a sleep testing device that included actigraphy, oximetry, and peripheral arterial tone to aid in the diagnosis of OSA in beneficiaries who have signs and symptoms indicative of OSA. (See Medicare National Coverage, below, along with the Coding section regarding codes for devices with this configuration of sensors.) A literature review of this technology in September 2009 identified a review of use of peripheral arterial tone for detecting sleep disordered breathing. This review includes the critical evaluation of a number of studies comparing the Watch-PAT™ with laboratory-based PSG. Relevant studies that included appropriate study populations (patients referred for evaluation of OSA or following CPAP treatment) are described below.

Berry et al randomized 106 patients who had been referred for a sleep study for suspected OSA at a local Veterans Administration center to either portable monitoring followed by APAP (PM-
APAP) or to PSG for diagnosis and treatment.⁹ Patients were screened with a detailed sleep and medical history questionnaire, and patients on alpha-blockers or not in sinus rhythm were excluded due to the type of portable monitoring device used (Watch-PAT™ 100). Of the 53 patients randomized to PSG, 6 (11%) did not have PSG-defined OSA; 43 of 49 patients (88%) with CPAP titrations started on CPAP. In the portable monitoring arm, 4 of 53 patients (8%) were found not to have OSA. Treatment outcomes were similar in the two groups, with a 7-point improvement in ESS score, 3-point improvement in the Functional Outcomes of Sleep Questionnaire, and a machine estimate of residual AHI of 3.5 in the PM-APAP group and 5.3 in the PSG group.

Pittman et al evaluated residual OSA in 70 patients who had self-reported adherence to CPAP for at least 3 months.¹⁰ Exclusion criteria for the study included use of alpha-adrenergic blockers. Compared with concurrently recorded PSG, the area under the curve (AUC) from receiver-operator characteristic (ROC) analysis for RDI greater than 15 was 0.95 (85% sensitivity and 90% specificity). Specificity decreased dramatically at lower cutoffs (67% for RDI >10 and 47% for an RDI >5). Another small study of 37 consecutive patients referred to a sleep center for OSA reported a high correlation between PSG and concurrently recorded Watch-PAT RDI (r=0.93).¹¹ (Correlation coefficients are not considered to be as meaningful as estimates of sensitivity and specificity.) Sensitivities for AHI greater than 5, 15, and 35 in this study were 94%, 96%, and 83%, respectively. Specificity was reported at 80%, 79%, and 72%, respectively, for these thresholds.

Penzel et al raised concern about the specificity of this device in an independently conducted small study of 21 patients with suspected sleep apnea.¹² The study found that for 16 of the 17 subjects with adequate recordings, the number of Watch-PAT events was greater than the number of respiratory events. The device was found to have reasonable reliability and to be very sensitive to arousal, although since arousals are not unique to apnea events, the authors concluded that the specificity of the Watch-PAT is limited. Questions also remain about the clinical utility of the indirect measure of peripheral arterial tone in place of directly measuring airflow and respiratory effort. In a 2004 report, Pittman et al noted other potential disadvantages of the Watch-PAT, including the inability to differentiate between the type of respiratory event (eg, obstructive, central, mixed, or hypopnea) or to identify body position, and susceptibility to artifact from arrhythmias.¹³ It is noteworthy that the American Academy of Sleep Medicine (AASM) has not changed their 2007 guidelines, recommending that portable monitors should minimally record airflow, respiratory effort, and blood oxygenation, using biosensors conventionally used for in-laboratory PSG.¹⁴ At this time, evidence is insufficient to support a change in the sensors required for portable monitoring.
Apnea Risk Evaluation System

In 2008, Ayappa et al reported a validation study of a small apnea monitor that is self-applied to the forehead. The device measures blood oxygen saturation and pulse rate, airflow, snoring levels, head movement, and head position. The study enrolled 80 individuals with a high likelihood of OSA and 22 with a low risk of OSA. Results of simultaneous Apnea Risk Evaluation System (ARES) recording and PSG were available for 92 individuals with a high likelihood of OSA and 22 with a low risk of OSA. When healthy subjects were excluded from analysis, sensitivity (0.91) and specificity (0.92) were relatively high, for an AHI of 15 or greater, but dropped considerably with an AHI between 5 and 15 (sensitivity, 0.97; specificity, 0.78). Five percent of the subjects could not tolerate the device and were not included in the analysis. This would not be as much of an issue with a type 3 device, particularly if the set-up was performed in the patient’s home.

Monitoring of APAP use by daily transmission to a web-based database and review by a research coordinator was shown to improve compliance to PAP therapy (191 min/d vs 105 min/d). For the telemedicine arm of this randomized trial, the research coordinator reviewed the transmitted data daily and contacted the patient if any of the following were present: mask leak greater than 40 L/min for greater than 30% of the night, less than 4 hours of use for 2 consecutive nights, machine measured AHI more than 10 events per hour, and 90th percentile of pressure greater than 16 cm H2O. Evaluation by their physician sleep specialist after 3 months of therapy showed a similar modest decrease in AHI for the 2 groups (1.6 for telemedicine, 0.7 for controls).

Section Summary

The evidence for limited channel home sleep testing includes type 4 monitors and WatchPAT in patients who have OSA includes studies on diagnostic accuracy. A number of questions remain on the ability to detect clinically significant OSA without sensors for heart rate, respiratory effort, and airflow, along with oxygen saturation.

Treatment

PAP-NAP

In 2008, Krakow et al reported use of a daytime abbreviated sleep study to acclimate patients with complex insomnia to PAP. Patients had been referred by psychiatrists or primary care
physicians for unspecified insomnia conditions, insomnia due to a mental disorder, or hypnotic
dependence. Nearly all of these patients had anxiety, fear, and/or resistance regarding PAP
therapy or the diagnosis of OSA. Thirty-nine patients who could not be persuaded to complete a
titration protocol (full-night or split-night) were offered a daytime procedure (PAP-NAP) prior to
night-time titration. The PAP-NAP protocol consisted of 5 components: pretest instructions to
maximize chances for daytime napping; introduction of PAP therapy addressing barriers to use;
type 3 monitoring hookup (10 channels without EEG leads); PAP therapy during 1 to 2 hours in
bed in which the patient has the possibility of falling asleep with the mask in place; and posttest
follow-up. Thirty-five of 39 NAP-tested patients subsequently scheduled and completed an
overnight titration or split-night study with full PSG. The effect of the PAP-NAP intervention on
compliance was compared to historical controls (n=38) with insomnia, mental health conditions,
and OSA with resistance to CPAP who completed titration. A prescription for PAP therapy was
filled by 85% of the PAP-NAP group compared with 35% of controls. Regular use during a 30-
day period was recorded by the PAP device in 67% of the intervention group compared with
23% of controls. Adherence, defined as at least 5 days per week with an average of at least 4
hours per day, was 56% in the PAP-NAP group and 17% in controls.

Practice Guidelines and Position Statements

In 2014, input was received from 7 physician specialty societies (8 reviewers) and 4 academic
medical centers (6 reviewers) while this policy was under review in 2014. The input focused on
routine screening of patients scheduled to undergo bariatric surgery. There was consensus that
routine screening is considered medically necessary in this population due to the high
prevalence of OSA in patients with a BMI greater than 40, combined with the increased rate of
peri-operative complications in patients with OSA. Input was mixed on whether the use of
portable home sleep testing was appropriate for patients scheduled for bariatric surgery.
Concerns were raised about the high prevalence of obesity hypoventilation syndrome in this
population, which is a contraindication to home sleep testing. Other reviewers considered home
sleep testing to be appropriate in patients scheduled for bariatric surgery, with the caveat that
obesity hypoventilation syndrome should be ruled out prior to home sleep testing.

American Academy of Sleep Medicine (AASM)

In 1997 the American Sleep Disorders Association (now the AASM) published practice
parameters for PSG and related procedures; these were updated in 2005.2,18
The guidelines suggested that patients had a 70% likelihood of having an AHI index of at least 10 if all of the following were present: habitual snoring, excessive daytime sleepiness, a body mass index greater than 35, and observed apnea.

AASM has also issued clinical guidelines on the evaluation, management, and long-term care of adults with obstructive sleep apnea (OSA).\(^{19}\) The levels of recommendation are “standard” (generally accepted patient-care strategy, with high degree of certainty; Level 1 to 2 evidence), ‘guideline’ (moderate degree of clinical certainty; Level 2 to 3 evidence), or “option” (uncertain clinical use; insufficient or inconclusive evidence).

AASM recommends that patients who are obese, retrognathic, hypertensive, or who complain of snoring or daytime sleepiness should be assessed for presence or absence of OSA as well as its severity using the following methods (standard):

- Sleep history assessment includes: witnessed apneas, gasping/choking at night, excessive sleepiness, total sleep amount, nocturia, morning headaches, decreased concentration, memory loss, decreased libido, and irritability.

- Physical assessment includes: evaluation of respiratory, cardiovascular, and neurologic systems; signs of upper respiratory narrowing.

- Objective testing, under an AASM accredited program, and attended by trained technical personnel. The diagnosis of OSA is confirmed if the number of obstructive events (apneas, hypopneas plus respiratory event related to arousals) is greater than 125 events/hour or greater than 5 events/hour in a patient reporting any of the following: unintentional sleep episodes during wakefulness; daytime sleepiness, unrefreshing sleep; fatigue, insomnia; waking up holding the breath, gasping, or choking; or a bed partner describing loud snoring, breathing interruptions, or both.

  - In laboratory polysomnography (PSG) (standard); records electroencephalogram, electroocculogram, chin electromyogram, airflow, oxygen saturation, respiratory effort, and heart rate.

  - Home testing with portable monitors (PM); at minimum, records air flow, respiratory effort and blood oxygenation.

AASM published evidence-based guidelines for respiratory indications for polysomnography in children in 2011.\(^{20}\) “Standard” recommendations were made for the following: PSG in children should be performed and interpreted in accordance with the AASM Manual for the Scoring of Sleep and Associated Events; PSG is indicated when the clinical assessment suggests the diagnosis of OSA in children. Children with mild OSA preoperatively should have clinical
evaluation following adenotonsillectomy to assess for residual symptoms. If there are residual symptoms of OSA, PSG should be performed. PSG is indicated following adenotonsillectomy to assess for residual OSA in children with preoperative evidence for moderate to severe OSA, obesity, craniofacial anomalies that obstruct the upper airway, and neurologic disorders. PSG is also indicated for positive airway pressure titration in children with OSA.

**The American Academy of Pediatrics (AAP)**

AAP published a 2012 guideline on the diagnosis and management of uncomplicated childhood OSA associated with adenotonsillar hypertrophy and/or obesity in an otherwise healthy child treated in the primary care setting, which updates the AAP’s 2002 guidelines.\(^{21,22}\) AAP recommended that all children/adolescents should be screened for snoring, and PSG should be performed in children/adolescents with snoring and symptoms/signs of OSA as listed in the guideline. If PSG is not available, an alternative diagnostic test or referral to a specialist may be considered (Option). The estimated prevalence rates of OSA in children/adolescents range from 1.2% to 5.7%. Adenotonsillectomy is recommended as the first line of treatment for patients with adenotonsillar hypertrophy, and patients should be reassessed clinically post-operatively to determine whether additional treatment is required. High-risk patients should be re-evaluated with an objective test or referred to a sleep specialist. CPAP is recommended if adenotonsillectomy is not performed or if OSA persists postoperatively. Weight loss is recommended in addition to other therapy in patients who are overweight or obese, and intranasal corticosteroids are an option for children with mild OSA in whom adenotonsillectomy is contraindicated or for mild postoperative OSA.

**American College of Physicians**

The 2014 guidelines on the diagnosis of OSA in adults from the American College of Physicians (ACP) recommended that clinicians should target their assessment of OSA to individuals with unexplained daytime sleepiness.\(^{23}\) ACP recommended PSG for diagnostic testing in patients suspected of OSA, and portable sleep monitors in patients without serious comorbidities as an alternative to PSG when PSG is not available for diagnostic testing (weak recommendation, moderat-quality evidence). Inconclusive areas of evidence included preoperative screening for OSA, phased testing for the diagnosis of OSA, and the utility of portable monitors for diagnosis OSA in patients with comorbid conditions.
The American Society of Metabolic and Bariatric Surgery (ASMBS)

The ASMBS Clinical Issues Committee published guidelines on the peri-operative management of obstructive sleep apnea in 2012. The guidelines were revised in October 2015 and no changes were recommended. Based on the evidence in the literature to date, the ASMBS provided the following guidelines regarding OSA in the bariatric surgery patient and its perioperative management:

- OSA is highly prevalent in the bariatric patient population. The high prevalence demonstrated in some studies suggests that consideration be given to testing all patients, and especially those with any preoperative symptoms suggesting obstructive sleep apnea.

- Patients with moderate to severe OSA should bring their CPAP machines, or at least their masks, with them at the time of surgery and use them following bariatric surgery at the discretion of the surgeon.

- Routine pulse oximetry or capnography for postoperative monitoring of patients with OSA after bariatric surgery should be utilized, but the majority of these patients do not routinely require an ICU setting.

- No clear guidelines exist upon which to base recommendations for retesting for OSA following bariatric surgery. Strong consideration should be given to retesting patients who present years after bariatric surgery with regain of weight, a history of previous OSA, and who are being reevaluated for appropriate medical and potential reoperative surgical therapy.

The American Academy of Otolaryngology – Head and Neck Surgery

The American Academy of Otolaryngology – Head and Neck Surgery published clinical practice guidelines on PSG for sleep-disordered breathing prior to tonsillectomy in children in 2011. The committee made the following recommendations:

- Before determining the need for tonsillectomy, the clinician should refer children with sleep-disordered breathing for PSG if they exhibit certain complex medical conditions such as obesity, Down syndrome, craniofacial abnormalities, neuromuscular disorders, sickle cell disease, or mucopolysaccharidoses;

- The clinician should advocate for PSG prior to tonsillectomy for sleep-disordered breathing in children without any of the comorbidities listed above for whom the need for surgery is
uncertain or when there is discordance between tonsillar size of physical examination and the reported severity of sleep-disordered breathing;

- Clinicians should communicate PSG results to the anesthesiologist prior to the induction of anesthesia for tonsillectomy;

- Clinicians should admit children with OSA documented on PSG for inpatient, overnight monitoring after tonsillectomy if they are younger than age 3 years or have severe OSA (AHI of 10 or more, oxygen saturation nadir less than 80%, or both);

- In children for whom PSG is indicated, assess sleep-disordered breathing prior to tonsillectomy and obtain laboratory-based PSG, when available.

Medicare National Coverage

In March 2009, CMS issued the following national coverage decision (CAG-00405N) for the types of sleep testing devices that would be approved for coverage.  

CMS finds that the evidence is sufficient to determine that the results of the sleep tests identified below can be used by a beneficiary’s treating physician to diagnose OSA:

- Type I PSG is covered when used to aid the diagnosis of OSA in beneficiaries who have clinical signs and symptoms indicative of OSA if performed attended in a sleep lab facility.

- A type II or type III sleep testing device is covered when used to aid the diagnosis of OSA in beneficiaries who have clinical signs and symptoms indicative of OSA if performed unattended in or out of a sleep lab facility, or attended in a sleep lab facility.

- A type IV sleep testing device measuring three or more channels, one of which is airflow, is covered when used to aid the diagnosis of OSA in beneficiaries who have signs and symptoms indicative of OSA if performed unattended in or out of a sleep lab facility, or attended in a sleep lab facility.

- A sleep testing device measuring three or more channels that include actigraphy, oximetry, and peripheral arterial tone is covered when used to aid the diagnosis of OSA in beneficiaries who have signs and symptoms indicative of OSA if performed unattended in or out of a sleep lab facility, or attended in a sleep lab facility.
References


13. Pittman SD, Ayas NT, MacDonald MM et al. Using a wrist-worn device based on peripheral arterial tonometry to diagnose obstructive sleep apnea: in-laboratory and ambulatory validation. Sleep 2004; 27(5):923-33. PMID 15453551


Appendix

Epworth Sleepiness Scale

Name: ___________________________________________________   Date:  ________________

How likely are you to doze off or fall asleep in the following situations, in contrast to feeling just tired? This refers to your usual way of life in recent times. Even if you have not done some of these things recently, try to work out how they would have affected you. Use the following scale to choose the most appropriate number for each situation:
0 = would never doze
1 = slight chance of dozing
2 = moderate chance of dozing
3 = high chance of dozing

<table>
<thead>
<tr>
<th>Situation</th>
<th>Chance for Dozing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sitting and reading</td>
<td>__________</td>
</tr>
<tr>
<td>Watching TV</td>
<td>__________</td>
</tr>
<tr>
<td>Sitting inactive in a public place (e.g., a theater or a meeting)</td>
<td>__________</td>
</tr>
<tr>
<td>As a passenger in a car for an hour without a break</td>
<td>__________</td>
</tr>
<tr>
<td>Lying down to rest in the afternoon when circumstances permit</td>
<td>__________</td>
</tr>
<tr>
<td>Sitting and talking to someone</td>
<td>__________</td>
</tr>
<tr>
<td>Sitting quietly after a lunch without alcohol</td>
<td>__________</td>
</tr>
<tr>
<td>In a car, while stopped for a few minutes in the traffic</td>
<td>__________</td>
</tr>
</tbody>
</table>

History

<table>
<thead>
<tr>
<th>Date</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>04/14/98</td>
<td>Add to Medicine Section - New Policy</td>
</tr>
<tr>
<td>06/01/99</td>
<td>Replace policy - Added information on Upper Airway Resistance Syndrome.</td>
</tr>
<tr>
<td>11/02/99</td>
<td>Replace policy - Policy Guidelines changed.</td>
</tr>
<tr>
<td>05/08/01</td>
<td>Replace policy - Policy reviewed and updated; description expanded.</td>
</tr>
<tr>
<td>09/11/01</td>
<td>Replace policy - Policy revised to include information received from Dr. Elmer on humidifiers.</td>
</tr>
<tr>
<td>02/12/02</td>
<td>Replace policy - Policy reviewed; UARS description updated.</td>
</tr>
<tr>
<td>05/14/02</td>
<td>Replace policy - Policy updated to delete the requirement for a trial of CPAP prior to</td>
</tr>
<tr>
<td>Date</td>
<td>Comments</td>
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<tr>
<td>------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>02/11/03</td>
<td>Replace policy - Policy updated to local medical practice.</td>
</tr>
<tr>
<td>06/17/03</td>
<td>Replace policy - Policy reviewed and updated, regarding surgical treatments for OSA.</td>
</tr>
<tr>
<td>06/08/04</td>
<td>Replace policy - Policy revised with code updates; no criteria changes.</td>
</tr>
<tr>
<td>07/13/04</td>
<td>Replace policy - Policy revised; no change in policy statement.</td>
</tr>
<tr>
<td>09/01/04</td>
<td>Replace policy - Policy renumbered from PR.2.01.103. No date changes.</td>
</tr>
<tr>
<td>12/14/04</td>
<td>Replace policy - Redundant information removed from the Rationale section.</td>
</tr>
<tr>
<td>05/10/05</td>
<td>Replace policy - Policy reviewed and updated regarding minimally invasive surgery for snoring, obstructive sleep apnea syndrome/upper airway resistance syndrome.</td>
</tr>
<tr>
<td>02/06/06</td>
<td>Codes updated - No other changes.</td>
</tr>
<tr>
<td>05/09/06</td>
<td>Replace policy - Policy reviewed with literature search; references updated; no change in policy statement.</td>
</tr>
<tr>
<td>12/12/06</td>
<td>Replace policy - Policy updated with literature review; policy statement updated to indicate portable home sleep studies as medically necessary when criteria are met. References added.</td>
</tr>
<tr>
<td>04/10/07</td>
<td>Replace policy - Policy updated with literature review; references added and codes updated. No change in policy statement.</td>
</tr>
<tr>
<td>03/11/08</td>
<td>Replace policy - Policy updated with literature search; no change in policy statement. References and code added.</td>
</tr>
<tr>
<td>07/08/08</td>
<td>Codes Updated - Added HCPCS codes: G0398, G0399, G0400 – retroactive to 3/13/08.</td>
</tr>
<tr>
<td>10/14/08</td>
<td>Replace policy - Policy updated with literature search, no change to the policy statement. References added.</td>
</tr>
<tr>
<td>05/12/09</td>
<td>Replace policy - Policy updated with literature search, no change to the policy statement. Policy guidelines extensively updated. Reference added.</td>
</tr>
<tr>
<td>09/15/09</td>
<td>Codes updated - Added 0203T &amp; 0204T. No other changes.</td>
</tr>
<tr>
<td>02/09/10</td>
<td>Replace policy - Policy updated with literature search; Additional policy statements re: CPAP, auto-adjusting CPAP, Bilevel positive airway pressure added as medically necessary. Additional information regarding children added.</td>
</tr>
<tr>
<td>03/09/10</td>
<td>Replace policy - Policy updated with literature search; no change to the policy statement. Minor update to Policy Guidelines section, regarding unsupervised home sleep studies limited to 1 night.</td>
</tr>
<tr>
<td>05/11/10</td>
<td>Replace policy - Policy updated with literature. Provent Device added to policy statement as investigational. Statements revised re: diagnosis of OSA. Additional high risk conditions added (Hypertension despite optimal medical management, preoperative evaluation for bariatric surgery, type 2 diabetes, nocturnal dysrhythmias, high risk driving populations, pulmonary hypertension, male gender or</td>
</tr>
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<td>Comments</td>
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<tr>
<td></td>
<td>postmenopausal females. Unsupervised sleep studies high risk conditions revised to add insomnia, parasomnias. Finally, interpretation of test results of unattended sleep studies should be validated only by sleep specialists (suggested board certification in sleep medicine or board eligible).</td>
</tr>
<tr>
<td>01/11/11</td>
<td>Replace policy - Policy updated with literature review and extensive updates and reorganization. The word “treatment” within the title has been changed to “medical management”. References have been updated, added, removed and reordered. The policy statements have been updated and organized by category: risk assessment, diagnostic testing, diagnosis criteria, titration, repeat testing, and durable medical equipment. The Policy Guidelines have been updated with CPT codes for PAP-NAP. The policy will be effective September 1, 2011, following 90-day hold for provider notification.</td>
</tr>
<tr>
<td>09/1/11</td>
<td>Policy changes of 1/1/11 are now effective.</td>
</tr>
<tr>
<td>10/11/11</td>
<td>Replace policy – Policy updated for clarification purposes: criteria for medically necessary policy statement on unattended home sleep studies modified with the inclusion of “suspicion of” as it relates to the absence of other sleep disorders, with listed examples unchanged; the criteria listed for the medically necessary policy statement on facility/laboratory sleep studies was altered to clarify the inclusion of patients with a contraindication for home sleep study due to suspicion of other sleep disorders.</td>
</tr>
<tr>
<td>01/10/12</td>
<td>Replace policy – Policy statement on multiple sleep latency test as not medically necessary removed. This test will no longer require clinical review.</td>
</tr>
<tr>
<td>04/10/12</td>
<td>Replace policy - Clarification was made within the medical necessity criteria for facility/laboratory PSG in patients with suspected OSA for whom testing is being done to rule out other sleep disorders; these patients may qualify.</td>
</tr>
<tr>
<td>10/09/12</td>
<td>Replace policy. Policy statements and rationale pertaining to DME removed and placed in new policy 1.01.524, Added references 24, 25, 26. Removed insomnia and circadian rhythm disorders from policy statements. Code 94660 removed from policy; this applies to CPAP which is now covered in a separate medical policy.</td>
</tr>
<tr>
<td>04/15/13</td>
<td>HCPCS code E0471 removed from policy; this code is for bipap with assistance (ventilator support) which does not apply to this policy.</td>
</tr>
<tr>
<td>08/12/13</td>
<td>Replace policy. Policy section updated with statement that actigraphy test is addressed in a separate policy and oral pressure therapy (OPT)-Winx system, is considered investigational. Policy Guidelines – conditions alphabetized. Rationale section updated based on literature review through June 2013. Reference 38 added; others renumbered/removed. Policy statement changed as noted.</td>
</tr>
<tr>
<td>Date</td>
<td>Comments</td>
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<td>------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>10/14/13</td>
<td>Replace policy. Added hypoventilation definition to guidelines section. Removed Medical Management and Upper Airway Respiratory Syndrome from the policy title.</td>
</tr>
<tr>
<td>12/04/13</td>
<td>Replace policy. Diagnostic criteria and definitions for other sleep disorders (central sleep apnea, narcolepsy, and PMLD) added to the Policy Guidelines section. Add ICD-10 codes.</td>
</tr>
<tr>
<td>03/10/14</td>
<td>Replace policy. Policy section updated to indicate that facility sleep testing may be considered medically necessary when there is a concern that the primary diagnosis is PLMD (periodic limb disorder movement), if obstructive sleep apnea has been ruled out.</td>
</tr>
<tr>
<td>05/12/14</td>
<td>Annual review. Facility testing for PLMD allowed as medically necessary; additional criteria stricken. Coding update: HCPCS “A” codes remove, along with E0561 – G0399 and ICD-9 / 10 diagnosis and procedure codes removed (these are not used in adjudicating the policy).</td>
</tr>
<tr>
<td>07/14/14</td>
<td>Interim review. Title changed to polysomnography and home sleep study for diagnosis of obstructive sleep apnea. Oral appliances information removed and placed in policy, 2.01.532. Nasal Expiratory Positive Airway Pressure Devices and Oral Pressure (Winx) Device information removed and placed in policy 1.01.524. Titration information removed and placed in policy 1.01.524. Added definitions for chronic pulmonary disease, circadian rhythm, excessive daytime sleepiness, insomnia, obesity hypoventilation syndrome, polysomnogram. Policy will be effective date will concur with that of 2.01.532, October 23, 2014.</td>
</tr>
<tr>
<td>09/11/14</td>
<td>Update Related Policies. Add 1.01.526.</td>
</tr>
<tr>
<td>10/23/14</td>
<td>Reissue policy with effective date 10/23/14, removing previous version.</td>
</tr>
<tr>
<td>01/13/15</td>
<td>Annual Review. Added definition for restless limb syndrome. Reference 54, 55 added.</td>
</tr>
<tr>
<td>08/11/15</td>
<td>Interim Review. Added PAP titration criteria back into policy. Added definition for titration of a PAP device back into policy. HCPCS code E0470 removed; it relates to a different medical policy.</td>
</tr>
<tr>
<td>05/01/16</td>
<td>Annual review, approved April 12, 2016. Added policy guidelines statement that OSA screening is part of the preoperative evaluation of patients scheduled for bariatric surgery; choice of a home or facility testing is based on clinical indications. Added related policy 7.01.516. HCPCS code G0400 removed; this is not reviewed at this time.</td>
</tr>
<tr>
<td>08/01/16</td>
<td>Interim Review, approved July 12, 2016. Added clarifications that lab results from a serum bicarbonate level or arterial blood gas can help with the diagnosis of hypoventilation syndrome; for an inconclusive home study use the criteria for a facility sleep study; once a patient has an OSA diagnosis a repeat sleep study is unnecessary before the first time PAP therapy is started. References 55, 56 added. Policy statements clarified, intent is unchanged.</td>
</tr>
<tr>
<td>12/01/16</td>
<td>Interim Review, approved November 8, 2016. Policy converted to new format; no</td>
</tr>
<tr>
<td>Date</td>
<td>Comments</td>
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<tr>
<td>-----------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>10/06/17</td>
<td>Minor update; clarification and formatting edits were made.</td>
</tr>
</tbody>
</table>

**Disclaimer:** This medical policy is a guide in evaluating the medical necessity of a particular service or treatment. The Company adopts policies after careful review of published peer-reviewed scientific literature, national guidelines and local standards of practice. Since medical technology is constantly changing, the Company reserves the right to review and update policies as appropriate. Member contracts differ in their benefits. Always consult the member benefit booklet or contact a member service representative to determine coverage for a specific medical service or supply. CPT codes, descriptions and materials are copyrighted by the American Medical Association (AMA). ©2017 Premera All Rights Reserved.

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  - Information written in other languages

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Email AppealsDepartmentInquiries@Premera.com

You can file a grievance in person or by mail, fax, or email. If you need help filing a grievance, the Civil Rights Coordinator is available to help you.

You can also file a civil rights complaint with the U.S. Department of Health and Human Services, Office for Civil Rights, electronically through the Office for Civil Rights Complaint Portal, available at https://ocrportal.hhs.gov/ocr/portal/lobby.jsf, or by mail or phone at:

U.S. Department of Health and Human Services
200 Independence Avenue SW, Room 509F, HHH Building
Washington, D.C. 20201, 1-800-368-1019, 800-537-7697 (TDD)
Complaint forms are available at

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Italiano (Italian):

中文 (Chinese):
本通知有重要的訊息。本通知可能有關於您透過 Premera Blue Cross 提交的申請或保險的重要訊息。本通知可能有重要的日期。您可能需要在截止日期之前採取行動，以保留您的健康保險或費用補貼。您有權利免費以您的母語得到本訊息和幫助。請撥電話 800-722-1471 (TTY: 800-842-5357).

Français (French):

Kreyòl ayisyen (Creole):

Deutsche (German):

Hmoob (Hmong):
Tsaab ntawv thiaj xo no muaj cov ntshiab lus tseem ceeb. Tej zaum tsab ntawv thiaj xo no muaj cov ntshiab lus tseem ceeb bjoog koi daim ntawv thov kev pob los yoj koy qhoq kev pob cuam los ntawm Premera Blue Cross. Tej zaum muaj cov hnub tseem ceeb uas sau rau hauv daim ntawv no. Tej zaum koi koy juay tuu uae qeem uas peb kom koi uas tsip pub nhau cov caij nyoog uas teev rau hauv daim ntawv no mas koi thiaj yuay tuu tais kev pob cuam kho mob los yoj kev pob them tej nqi kho mob ntawv. Koi muaj cai kom lawv muab cov ntshiab lus no uas tais kwu sau uaj koi hom lus pub dawb rau koi. Hu rau 800-722-1471 (TTY: 800-842-5357).

Ilokano (Ilocano):
Daytoy a Pakdaak ket naglaon iti Napateg nga Impormasion. Daytoy a pakdaak mabalib nga adda ket naglaon iti napateg nga impormasion mainjapeeg iti aplikasyon weno coverage babaen iti Premera Blue Cross. Daytoy ket mabalib dagiti importante a palsa iti daytoy a pakdaak. Mabalib nga adda rumbeg nga aramideny nga addang sakbay dagiti partikular a naituding nga ailaw tapno mapagtalaineyado ti coverage ti salun-atyo wenno tulong kadagiti gastos. Adda karbenganyo a mangala iti daytoy nga impormasion ken tulong ti bukodyo a pagasasao nga awan ti bayadan. Tumawag ti numero nga 800-722-1471 (TTY: 800-842-5357).

Italiano (Italian):

037338 (07-2016)
Este aviso contiene información importante. Es posible que este aviso contenga información importante acerca de su solicitud o cobertura a través de Premera Blue Cross. Es posible que haya fechas claves en este aviso. Es posible que deba tomar alguna medida antes de determinadas fechas para mantenerte en cobertura médica o ayuda con los costos. Usted tiene derecho a recibir esta información y ayuda en su idioma sin costo alguno. Llame al 800-722-1471 (TTY: 800-842-5357).

Tagalog (Tagalog): Ang Paunawa na ito ay naglalaman ng mahalagang impormasyon. Ang paunawa na ito ay nagamit ang Premera Blue Cross. Paunawa na ito ay talaan ang awtoridad o cahaya ng paksa sa kabuuhan ng katarungan at seguridad ng banyag. Ang Paunawa na ito ay naglalaman ng mahalagang impormasyon:

(THAI) ประกาศนี้อาจมีข้อมูลที่สําคัญเกี่ยวกับการการสมัครหรือขอบเขตประกันของคุณ. การสมัครหรือขอบเขตประกันของคุณอาจมีข้อตกลงในสาระการเงินที่ระบุไว้ในประกาศนี้. การสมัครหรือขอบเขตประกันของคุณอาจมีข้อตกลงในสาระการเงินที่ระบุไว้ในประกาศนี้.


(ESPAÑOL) Este Aviso contiene información importante. Es posible que este aviso contenga información importante acerca de su solicitud o cobertura a través de Premera Blue Cross. Es posible que haya fechas claves en este aviso. Es posible que deba tomar alguna medida antes de determinadas fechas para mantener su cobertura médica o ayuda con los costos. Usted tiene derecho a recibir esta información y ayuda en su idioma sin costo alguno. Llame al 800-722-1471 (TTY: 800-842-5357).


(UKRAINIAN) Це повідомлення містить важливу інформацію. Це повідомлення може містити важливу інформацію про Ваше звернення щодо страхувального покриття через Premera Blue Cross. Зверніть увагу на ключові дати, які можуть бути вказані у цьому повідомленні. Існує імовірність того, що Вам треба буде здійснити певні кроки у конкретні кінцеві строки для того, щоб зберегти Ваше медичне страхування або отримати фінансову допомогу. У Вас є право на отримання цієї інформації та допомоги безкоштовно на Вашій рідній мові. Зверніться за номером телефону 800-722-1471 (TTY: 800-842-5357).