Name of Policy:  
Polysomnography for Respiratory Sleep Disorders Testing

Policy #: 305  
Category: Medicine  
Latest Review Date: October 2016  
Policy Grade: C

Background/Definitions:  
As a general rule, benefits are payable under Blue Cross and Blue Shield of Alabama health plans only in cases of medical necessity and only if services or supplies are not investigational, provided the customer group contracts have such coverage.

The following Association Technology Evaluation Criteria must be met for a service/supply to be considered for coverage:

1. The technology must have final approval from the appropriate government regulatory bodies;  
2. The scientific evidence must permit conclusions concerning the effect of the technology on health outcomes;  
3. The technology must improve the net health outcome;  
4. The technology must be as beneficial as any established alternatives;  
5. The improvement must be attainable outside the investigational setting.

Medical Necessity means that health care services (e.g., procedures, treatments, supplies, devices, equipment, facilities or drugs) that a physician, exercising prudent clinical judgment, would provide to a patient for the purpose of preventing, evaluating, diagnosing or treating an illness, injury or disease or its symptoms, and that are:

1. In accordance with generally accepted standards of medical practice; and  
2. Clinically appropriate in terms of type, frequency, extent, site and duration and considered effective for the patient’s illness, injury or disease; and  
3. Not primarily for the convenience of the patient, physician or other health care provider; and  
4. Not more costly than an alternative service or sequence of services at least as likely to produce equivalent therapeutic or diagnostic results as to the diagnosis or treatment of that patient’s illness, injury or disease.
**Description of Procedure or Service:**

Obstructive sleep apnea syndrome (OSA) is characterized by repetitive episodes of upper airway obstruction due to the collapse and obstruction of the upper airway during sleep. Obstruction anywhere along the upper airway can result in apnea, including the nasal cavity (nose), oropharynx (palate), and hypopharynx (tongue base). In patients with OSA, the normal pharyngeal narrowing is accentuated by anatomic factors, such as a short, fat “bull” neck, or large tonsillar pillars with redundant lateral pharyngeal wall mucosa. Furthermore, OSA may be associated with a wide variety of craniofacial abnormalities, including micrognathia, retrognathia, or maxillary hypoplasia. In addition, OSA is associated with obesity.

The hallmark clinical symptom of OSA is excessive 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. Sleep fragmentation associated with repeated arousal during sleep causes excessive daytime sleepiness that can lead to impairment of almost any daytime activity. For example, patients with OSA associated daytime somnolence are thought to be at a higher risk for accidents involving motorized vehicles, i.e., cars, trucks, or heavy equipment. In addition, excessive daytime sleepiness indirectly affects the cardiovascular and pulmonary systems. For example, apnea leads to periods of hypoxia, alveolar hypoventilation, hypercapnia, and acidosis. This in turn can cause systemic hypertension, cardiac arrhythmias, 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.

Excessive daytime sleepiness is predominantly a subjective symptom. The Epworth Sleepiness Scale (ESS) is a popular, quick, and easy self-administered questionnaire that asks patients their likelihood of falling asleep in 8 situations ranked from 0 (would never doze) to 3 (high chance of dozing). The numbers are then added together to give a global score between 0 and 24. A value of 10 or below is considered normal. The 8 situations are as follows:

1. Sitting and reading
2. Watching TV
3. As a passenger in a car for one hour without a break
4. Sitting inactive in a public place, i.e., theater
5. Lying down to rest in the afternoon when circumstances permit
6. Sitting and talking with someone
7. Sitting quietly after lunch without alcohol
8. In a car, while stopped for a few minutes in traffic

In central sleep apnea, the message that is normally sent from the brain to the chest muscles to initiate breathing does not reliably occur during sleep. Upper airway resistance syndrome (UARS) is a variant of OSA that is characterized by a partial collapse of the airway, resulting in increased resistance to airflow. This increased respiratory effort required results in multiple sleep fragmentations as measured by very short alpha-electroencephalographic (EEG) arousals. Snoring may not be a feature of UARS. The resistance to airflow is typically subtle and does not result in apneic or hypopneic events. However, it does result in increasingly negative intrathoracic pressure during inspiration, which can be measured using an esophageal manometer.
as an adjunct to a polysomnogram. Therefore, this diagnosis rests on polysomnographic documentation of > 10 EEG arousals per hour of sleep correlated with episodes of reduced intrathoracic pressures.

The gold standard diagnostic test for sleep disorders is a polysomnogram performed in a sleep laboratory. A standard polysomnogram includes EEG, submental electromyogram (EMG) and electrooculogram (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. An attended study ensures that the electrodes and sensors are functioning adequately and do not become dislodged during the night. In addition, an attendant is able to identify severe OSA in the first part of the night and titrate continuous positive airway pressure (CPAP) in the second part of the night, commonly known as a "split-night" study. If successful, this strategy can eliminate the need for an additional PSG for CPAP titration. Auto-adjusting positive airway pressure (APAP) may also be used to determine the most effective pressure.

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, e.g., 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 of 5 or greater 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 and 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 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 10 or greater may be 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. It has been proposed that
unattended studies with portable monitoring devices may improve the diagnosis and treatment of patients with OSA, although the limited number of channels in comparison with full polysomnographic recording may decrease the capability for differential diagnosis or detection of comorbid conditions.

The testing facility may be either a sleep disorder center or a laboratory for sleep-related breathing disorders. A sleep disorders center is a medical facility providing clinical diagnostic services and treatment to patients who present with symptoms or features that suggest the presence of a sleep disorder. A sleep related breathing disorder laboratory provides diagnostic and treatment services limited to sleep-related breathing disorders, such as obstructive sleep apnea. The American Academy of Sleep Medicine provides standards and accreditation for sleep disorders centers and sleep related breathing disorder laboratories. The AASM has two different certifications for sleep centers, distinguishing between an in-lab study and in-home study.

The final diagnosis of OSA rests on a combination of objective and subjective criteria that seek to identify those levels of obstruction that are clinically significant. Mild sleep apnea is defined as an RDI between 5 (considered normal) and 14; moderate OSA is an RDI between 15 and 30; while severe OSA is an RDI > 30.

Refer to Policy #619 – Polysomnography for Non-Respiratory Sleep Disorders

*Note: There are varying benefit plans for unattended (unsupervised) home sleep studies. Please verify benefits prior to applying policy criteria, as benefit coverage will supersede this policy.

Policy:
For dates of service on or after December 1, 2016:
A single unattended (unsupervised) home sleep study meets Blue Cross and Blue Shield of Alabama’s medical criteria for coverage with a Type II or III device (minimum of 4 recording channels including oxygen saturation, respiratory movements, airflow and ECG or heart rate) in adult patients who are at high risk for obstructive sleep apnea (OSA) as described in the Policy Guidelines and have no evidence by history or physical examination of any of the following health conditions which might alter ventilation or require alternative treatment including, but not limited, to the following:

- Central Sleep Apnea
- Heart Failure
- Chronic Pulmonary disease
- Obesity Hypoventilation Syndrome
- Neuromuscular disorders with sleep-related symptoms
- Injurious or potentially injurious parasomnias
- Narcolepsy;

Unattended (unsupervised) home sleep study meets Blue Cross and Blue Shield of Alabama’s medical criteria for coverage as a screening tool in patients who are scheduled for bariatric
surgery and have no evidence by history or physical examination of a health condition that might alter ventilation or require alternative treatment as described in the criteria directly above.

A single unattended (unsupervised) home sleep study in children (younger than 18 years of age) does not meet Blue Cross and Blue Shield of Alabama’s medical criteria for coverage and is considered investigational.

Uncomplicated OSA patients diagnosed with a home sleep study, who meet the criteria below, will be required to utilize an auto/titrating/auto-adjusting positive airway pressure (APAP) trial in the home setting for titration of pressure.

Home titration to determine a fixed CPAP pressure using APAP meets Blue Cross and Blue Shield of Alabama’s medical criteria for coverage for the titration of pressure in adult patients with clinically significant OSA defined as those patients who have:

- An Apnea/Hypopnea Index (AHI) or Respiratory Disturbance Index (RDI) of at least 15 per hour,
  OR
- An AHI or RDI of at least 5 per hour in a patient with any of the following associated symptoms:
  A) Excessive daytime sleepiness
  B) Documented hypertension
  C) Mood disorders
  D) Insomnia
  E) Ischemic heart disease
  F) History of stroke
  G) Unexplained dysrhythmia

Repeat unattended (unsupervised) home sleep study meets Blue Cross and Blue Shield of Alabama’s medical criteria for coverage with a Type II or III device (minimum of 4 recording channels including oxygen saturation, respiratory movement, airflow, and ECG/heart rate) in adult patients under the following circumstances:

1. To assess efficacy of surgery or oral appliances/devices; OR
2. To reevaluate the diagnosis of OSA and need for continued continuous positive airway pressure (CPAP), e.g., if there is a significant change in weight or change in symptoms suggesting that CPAP should be retitrated or possibly discontinued.

A supervised (In-lab) polysomnography or sleep study performed after a previous unattended (unsupervised) home sleep study meets Blue Cross and Blue Shield of Alabama’s medical criteria for coverage in the following circumstances:

1. A previous home study failed to establish the diagnosis or OSA in a patient with a high pretest probability of OSA; OR
2. A previous home study was technically inadequate; OR
3. To titrate CPAP in a patient for whom an attempt at unattended (unsupervised) home APAP titration has been unsuccessful.
*Note: There are varying benefit plans for unattended (unsupervised) home sleep studies. Please verify benefits prior to applying policy criteria, as benefit coverage will supersede this policy.

A supervised (in-lab) polysomnography or sleep study meets Blue Cross and Blue Shield of Alabama’s medical criteria for coverage as a diagnostic test in patients who present with pronounced snoring or restlessness in association with any one of the following:

1. Witnessed apneic events while sleeping (i.e., sleep apnea);
2. Excessive daytime sleepiness (defined as an Epworth sleepiness scale score of greater than 10);
3. Unexplained hypertension or arrhythmia;
4. A body mass index (BMI) greater than 35; OR
5. High risk for obstructive sleep apnea (OSA) as described in the policy guidelines;
6. Children seven years of age and under with one or more of the following:
   a. Observed gross or subtle snoring which may be continuous; cessation or difficulty breathing, and sleep disturbances, or;
   b. Observed symptoms related to cardio-pulmonary, growth and development, and/or behavior problems that may be caused by upper-airway obstruction.
   c. Pronounced snoring or disrupted sleep.

A supervised (in-lab) polysomnography or sleep study must include all of the following:

1. Electroencephalography (EEG)
2. Electro-oculography (EOG)
3. Submental (or chin) electromyography (EMG)
4. Extremity muscle activity
5. Respiratory effort
6. Airflow
7. Arterial oxygen saturation
8. Electrocardiography (ECG) or heart rate

A supervised (in-lab) polysomnography or sleep study meets Blue Cross and Blue Shield of Alabama’s medical criteria for coverage as a technique to initiate or titrate CPAP in patients with clinically significant OSA defined as those patients who meet any of the following criteria:

1. An AHI ≥ 15; OR
2. An AHI between 5 and 14 with any of the following associated symptoms:
   a. Excessive daytime sleepiness (as evidenced by a pre-testing Epworth score of > 10 or other evidence);
   b. Impaired cognition;
   c. Mood disorders;
   d. Insomnia;
   e. Documented hypertension;
   f. Ischemic heart disease;
   g. History of stroke;
   h. Unexplained dysrhythmia.
Split-night polysomnography meets Blue Cross and Blue Shield of Alabama’s medical criteria for coverage as recommended by the American Academy of Sleep Medicine (AASM) Standards of Practice Committee (see Key Points).

Two separate full night (6 to 7 hours) polysomnography studies, one for the diagnosis of sleep disorders and the second to titrate CPAP meet Blue Cross and Blue Shield of Alabama’s medical criteria for coverage when circumstances are such that a split-night polysomnography with titration of CPAP performed in the second part of the study is not possible. For example, significant obstructive sleep apnea is not identified in time to allow for at least 3 hours of CPAP titration including both REM and non-REM sleep.

Supervised (in lab) Polysomnography or sleep study meets Blue Cross and Blue Shield of Alabama’s medical criteria for coverage for the evaluation of sleep disorders for the following indications when diagnostic questions remain after completion of the standard evaluation, when treatment decisions will be made based on the results of the study, and when the symptoms are of a severity to place the individual at risk for serious complications or injury:

1. Patients with neuromuscular disorders and sleep-related symptoms;
2. Infant or child under the age of 7 years who is being considered for removal of a tracheostomy;
3. Infant or child under the age of 7 years with suspected Ondine’s Curse (Central Alveolar Hypoventilation Syndrome) in which the patient stops breathing when they sleep;
4. Unexplained hypersomnolence;
5. Central nervous system hypoventilation;

A repeat supervised (in lab) polysomnography or sleep study meets Blue Cross and Blue Shield of Alabama’s medical criteria for coverage in patients who meet the following criteria:

1. After good clinical response to oral appliance treatment in patients with moderate to severe OSA, to ensure therapeutic benefit;
2. After surgical treatment of patients with moderate-to-severe OSA, to ensure satisfactory response;
3. After surgical or dental treatment of patients with SRBDs whose symptoms return despite a good initial response to treatment;
4. After substantial weight loss (e.g., 10% of body weight) has occurred in patients on CPAP for treatment of SRBDs to ascertain whether CPAP is still needed at the previously titrated pressure;
5. After substantial weight gain (e.g., 10% body weight) has occurred in patients previously treated with CPAP successfully, who are again symptomatic despite the continued use of CPAP, to ascertain whether pressure adjustments are needed;
6. When clinical response is insufficient or when symptoms return despite a good initial response to treatment with CPAP. In these circumstances, testing should be devised with consideration that a concurrent sleep disorder may be present (e.g., OSA and narcolepsy). (AASM, 2005).
Diagnostic sleep testing for the following conditions does not meet Blue Cross and Blue Shield of Alabama’s medical criteria for coverage as they can be diagnosed through more appropriate means. These conditions are, including but not limited to, the following:

1. Bruxism;
2. Drug dependency;
3. Enuresis;
4. Hypersomnia, without other signs/symptoms of OSA;
5. Insomnia;
6. Night terrors or dream anxiety attacks;
7. Nocturnal myoclonus;
8. Routine diagnosis of restless leg syndrome, periodic limb movements;
9. Shift work and schedule disturbances;
10. Somnambulism;
11. Migraine headaches;
12. Snoring without other signs/symptoms of OSA;
13. Chronic obstructive pulmonary disease;
14. Asthma;
15. Neuromuscular disease;
16. Depression;
17. Determining risk of sudden infant death syndrome (SIDS);
18. Circadian rhythm-sleep disorders.

Follow-up polysomnography does not meet Blue Cross and Blue Shield of Alabama’s medical criteria for coverage in the following conditions:

- Patients treated with CPAP whose symptoms continue to be resolved with CPAP treatment.

The following types of sleep studies or tests related to sleep studies do not meet Blue Cross and Blue Shield of Alabama’s medical criteria for coverage:

1. Electrosleep therapy, which uses the passage of weak electric currents to the brain to induce sleep;
2. Topographic electroencephalogram (EEG) mapping for the diagnosis and/or medical management of obstructive sleep apnea syndrome;
3. Multiple sleep latency testing (MSLT) for the diagnosis of obstructive sleep apnea syndrome. This test may be used in the diagnostic work up of narcolepsy; (refer to Blue Cross and Blue Shield of Alabama’s Medical Policy #619 – Polysomnography for Non-Respiratory Sleep Disorders)
4. Actigraphy (refer to Blue Cross and Blue Shield of Alabama’s Medical Policy # 164 Wrist Actigraphy Home Monitoring);
5. Acoustic pharyngometer (e.g., Eccovision™ Acoustic Pharyngometer);
6. Reflective acoustic devices (e.g., Bedbugg testing);
7. Obstructive pressure measuring (e.g. ApLab testing).

The use of an abbreviated daytime sleep study (PAP-NAP) as a supplement to standard sleep studies does not meet Blue Cross and Blue Shield of Alabama’s medical criteria for coverage and is considered investigational.
Policy Guidelines
Although not an exclusive list, patients with all 4 of the following symptoms are considered to be at high risk for obstructive sleep apnea (OSA):

- habitual snoring;
- observed apneas;
- excessive daytime sleepiness;
- a body mass index (BMI) greater than 35

If no bed partner is available to report snoring or observed apneas, other signs and symptoms suggestive of OSA (e.g., age of the patient, male gender, thick neck, craniofacial or upper airway soft tissue abnormalities, or unexplained hypertension) may be considered. Objective clinical prediction rules are being developed; however, at the present time, risk assessment is based primarily on clinical judgment.

The physician performing, and interpreting a polysomnogram or home sleep study must meet one of the following:

- be a diplomate of the American Board of Sleep Medicine (ABSM) AND Board Certified Pulmonologist or a Board Certified Neurologist OR

- has a Sleep Certification issued by ONE of the following Boards:
  - American Board of Internal Medicine (ABIM),
  - American Board of Family Medicine (ABFM),
  - American Board of Pediatrics (ABP),
  - American Board of Psychiatry and Neurology (ABPN),
  - American Board of Otolaryngology (ABOTO),
  - American Osteopathic Board of Neurology and Psychiatry (AOBNP),
  - American Osteopathic Board of Family Medicine, (AOBFP)
  - American Osteopathic Board of Internal Medicine, (AOBIM)
  - American Osteopathic Board of Ophthalmology and Otorhinolaryngology (AOBOO),

  OR

- be an active staff member of an accredited sleep center or laboratory. The sleep facility accreditation must be from the American Academy of Sleep Medicine (AASM), inpatient or outpatient, Accreditation Commission for Health Care (ACHC), or the Joint Commission (formerly the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) accreditation for Ambulatory care sleep centers.

All centers billing sleep studies must maintain proper certification/ accreditation documentation as defined above, which include: Accreditation of sleep centers to include—AASM, ACHC, or Joint Commission.

The medical professional who is performing, evaluating, and interpreting a polysomnogram or home sleep study must have performed a thorough review of the patient’s history and physical
prior to any polysomnography or sleep disorders testing being performed. This history and physical should include a thorough sleep history and a physical examination that includes the respiratory, cardiovascular, and neurological systems (AASM Practice Standard 4.1.1).

In addition to above, when performed in the Blue Cross and Blue Shield of Alabama Preferred Medical Doctor (PMD) or Blue Choice service area, polysomnography or sleep disorders testing must be interpreted by PMD or Blue Choice physician and must have an Alabama License in order to meet Blue Cross and Blue Shield of Alabama’s medical criteria for coverage as outlined in the Policy statement.

For dates of service June 13, 2013 through November 30, 2016:

The use of an abbreviated daytime sleep study (PAP-NAP) as a supplement to standard sleep studies does not meet Blue Cross and Blue Shield of Alabama’s medical criteria for coverage and is considered investigational.

Polysomnography or sleep disorders testing meets Blue Cross and Blue Shield of Alabama’s medical criteria for coverage when performed in an accredited sleep center or laboratory and interpreted by a board certified or board eligible sleep disorders specialist. The evaluation should include a thorough sleep history and a physical examination that includes the respiratory, cardiovascular, and neurological systems (AASM Practice Standard 4.1.1). This evaluation should take place before any polysomnography or sleep disorders testing is performed.

In addition to above, when performed in the Blue Cross and Blue Shield of Alabama Preferred Medical Doctor (PMD) service area, polysomnography or sleep disorders testing must be interpreted by PMD physician who is board certified or board eligible sleep disorders specialist, and must have an Alabama License in order to meet Blue Cross and Blue Shield of Alabama’s medical criteria for coverage.

Sleep studies performed outside of a health care facility, (i.e., home sleep studies, whether supervised, attended, or not) are non-covered.

A supervised polysomnography or sleep study meets Blue Cross and Blue Shield of Alabama’s medical criteria for coverage as a diagnostic test in patients who present with pronounced snoring or restlessness in association with any one of the following:

1. Witnessed apneic events while sleeping (i.e., sleep apnea);
2. Excessive daytime sleepiness (defined as an Epworth sleepiness scale score of greater than 10);
3. Unexplained hypertension or arrhythmia;
4. Symptoms suggesting narcolepsy (e.g., sleep paralysis, hypnagogic hallucinations, and cataplexy);
5. Children 7 years of age and under with one or more of the following:
   a) Observed gross or subtle snoring which may be continuous; cessation or difficulty breathing, and sleep disturbances, or;
   b) Observed symptoms related to cardio-pulmonary, growth and development, and/or behavior problems that may be caused by upper-airway obstruction.
c) Pronounced snoring or disrupted sleep.

A supervised polysomnography must include all of the following:
1. Electroencephalography (EEG)
2. Electro-oculography (EOG)
3. Submental (or chin) electromyography (EMG)
4. Extremity muscle activity
5. Respiratory effort
6. Airflow
7. Arterial oxygen saturation
8. Electrocardiography (ECG) or heart rate

A supervised polysomnography or sleep study meets Blue Cross and Blue Shield of Alabama’s medical criteria for coverage as a technique to initiate or titrate CPAP in patients with clinically significant OSA defined as those patients who meet any of the following criteria:
1. An AHI ≥ 15; OR
2. An AHI between 5 and 14 with any of the following associated symptoms: a. Excessive daytime sleepiness (as evidenced by a pre-testing Epworth score of > 10 or other evidence);
3. Impaired cognition;
4. Mood disorders;
5. Insomnia;
6. Documented hypertension;
7. Ischemic heart disease;

Split-night polysomnography meets Blue Cross and Blue Shield of Alabama’s medical criteria for coverage as recommended by the American Academy of Sleep Medicine (AASM) Standards of Practice Committee (see Key Points).

Two separate full night (6 to 7 hours) polysomnography studies, one for the diagnosis of sleep disorders and the second to titrate CPAP meet Blue Cross and Blue Shield of Alabama’s medical criteria for coverage when circumstances are such that a split-night polysomnography with titration of CPAP performed in the second part of the study is not possible. For example, significant obstructive sleep apnea is not identified in time to allow for at least three hours of CPAP titration including both REM and non-REM sleep.

Polysomnography with video recording and additional EEG channels (Video-EEG-NPSG) in an extended bilateral montage meets Blue Cross and Blue Shield of Alabama’s medical criteria for coverage to assist with the diagnosis of paroxysmal arousals or sleep disturbances thought to be seizure related when the initial clinical evaluation and results of the standard EEG are inconclusive.

Polysomnography meets Blue Cross and Blue Shield of Alabama’s medical criteria for coverage for the evaluation of sleep disorders for the following indications when diagnostic questions remain after completion of the standard evaluation, when treatment decisions will
be made based on the results of the study, and when the symptoms are of a severity to place the individual at risk for serious complications or injury:

1. Patients with neuromuscular disorders and sleep-related symptoms;
2. Assist with the diagnosis of paroxysmal arousal or other sleep disturbances thought be seizure related;
3. Sleep-related epilepsy that does not respond to conventional therapy;
4. Infant or child under the age of 7 years who is being considered for removal of a tracheostomy;
5. Infant or child under the age of 7 years with suspected Ondine’s Curse (Central Alveolar Hypoventilation Syndrome) in which the patient stops breathing when they sleep;
6. Unexplained hypersomnolence;
7. Injurious or potentially injurious parasomnias;
8. Periodic limb movement disorder; restless leg syndrome;
9. Central nervous system hypoventilation;

**Multiple Sleep Latency Test (MSLT) / Maintenance Wakefulness Test (MWT) meets** Blue Cross and Blue Shield of Alabama’s medical criteria for coverage as a diagnostic tool to evaluate suspected narcolepsy or idiopathic hypersomnolence. MSLT / MWT are performed after a polysomnography has ruled out significant sleep apnea (as indicated by a RDI < 10). Initial PSG and MSLT occasionally fail to identify narcolepsy. Repeat testing may be necessary when initial results are negative or ambiguous and the clinical history strongly indicates a diagnosis of narcolepsy. Repeat MSLT / MWT may also be performed when the response to treatment needs to be evaluated.

A **repeat supervised polysomnography or sleep study meets** Blue Cross and Blue Shield of Alabama’s medical criteria for coverage in patients who meet the following criteria:

1. After good clinical response to oral appliance treatment in patients with moderate to severe OSA, to ensure therapeutic benefit;
2. After surgical treatment of patients with moderate-to-severe OSA, to ensure satisfactory response;
3. After surgical or dental treatment of patients with SRBDs whose symptoms return despite a good initial response to treatment;
4. After substantial weight loss (e.g., 10% of body weight) has occurred in patients on CPAP for treatment of SRBDs to ascertain whether CPAP is still needed at the previously titrated pressure;
5. After substantial weight gain (e.g., 10% body weight) has occurred in patients previously treated with CPAP successfully, who are again symptomatic despite the continued use of CPAP, to ascertain whether pressure adjustments are needed;
6. When clinical response is insufficient or when symptoms return despite a good initial response to treatment with CPAP. In these circumstances, testing should be devised with consideration that a concurrent sleep disorder may be present (e.g., OSA and narcolepsy). (AASM, 2005).
Diagnostic sleep testing for the following conditions does not meet Blue Cross and Blue Shield of Alabama’s medical criteria for coverage as they can be diagnosed through more appropriate means:

1. Bruxism;
2. Drug dependency;
3. Enuresis;
4. Hypersomnia, without other signs/symptoms of OSA;
5. Insomnia;
6. Night terrors or dream anxiety attacks;
7. Nocturnal myoclonus;
8. Routine diagnosis of restless leg syndrome, periodic limb movements;
9. Shift work and schedule disturbances;
10. Somnambulism;
11. Migraine headaches;
12. Snoring without other signs/symptoms of OSA;
13. Chronic obstructive pulmonary disease;
14. Asthma;
15. Neuromuscular disease;
16. Depression;
17. Determining risk of sudden infant death syndrome (SIDS);
18. Circadian rhythm-sleep disorders.

The following types of sleep studies or tests related to sleep studies do not meet Blue Cross and Blue Shield of Alabama’s medical criteria for coverage:

1. Unattended or unsupervised sleep studies;
2. Home or portable sleep studies; whether attended or unattended have not been conclusively proven to be equivalent to formal sleep studies in a sleep lab;
3. Electrosleep therapy, which uses the passage of weak electric currents to the brain to induce sleep;
4. Topographic electroencephalogram (EEG) mapping for the diagnosis and/or medical management of obstructive sleep apnea syndrome;
5. Multiple sleep latency testing (MSLT) for the diagnosis of obstructive sleep apnea syndrome. This test may be used in the diagnostic work up of narcolepsy;
6. Actigraphy (refer to Blue Cross and Blue Shield of Alabama’s Medical Policy # 164 Wrist Actigraphy Home Monitoring);
7. Acoustic pharyngometer (e.g., Eccovision™ Acoustic Pharyngometer);
8. Reflective acoustic devices (e.g., SNAP™ Testing System or Bedbugg testing);
9. Obstructive pressure measuring (e.g. ApLab testing).

Follow-up polysomnography does not meet Blue Cross and Blue Shield of Alabama’s medical criteria for coverage in the following conditions:

- Patients treated with CPAP whose symptoms continue to be resolved with CPAP treatment.

Blue Cross and Blue Shield of Alabama does not approve or deny procedures, services, testing, or equipment for our members. Our decisions concern coverage only. The decision of whether or
not to have a certain test, treatment or procedure is one made between the physician and his/her patient. Blue Cross and Blue Shield of Alabama administer benefits based on the member’s contract and corporate medical policies. Physicians should always exercise their best medical judgment in providing the care they feel is most appropriate for their patients. Needed care should not be delayed or refused because of a coverage determination.

**Key Points:**
The most recent update with literature review covers the period through August, 2016.

The patient selection criteria for a polysomnogram or sleep study require an estimate of the pretest probability of OSA, based on the signs and symptoms of OSA. Ideally, one would like to know the necessity of a polysomnogram (i.e., with EEG) versus a sleep study (without EEG). In 1997, the American Sleep Disorders Association published practice parameters for polysomnography and related procedures. These parameters suggested that patient 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 > 35, and observed apneas. The document further stated that in these patients, a sleep study may be an acceptable alternative to a polysomnogram. However, a sleep study may only “rule in” disease, and polysomnography should be available for patients with false negative sleep studies. In addition, the document suggests that a history of excessive daytime sleepiness and heavy snoring should prompt consideration of a polysomnogram. Finally, practice parameters state that a multiple sleep latency test is not routinely indicated for most patients with sleep-related breathing disorders.

In 2005, leaders from the American Thoracic Society (ATS), the American College of Chest Physicians (ACCP), and the American Academy of Sleep Medicine (AASM) met to address means by which the three societies could work together to enhance patient care with respect to the practice of sleep medicine. The three societies reaffirm the essential role of all specialties that have been key participants in the development of sleep medicine, including pulmonology, neurology, psychiatry, otolaryngology, pediatrics, and internal medicine. The Sleep Medicine Certification Program, developed by the American Board of Internal Medicine (ABIM), the American Board of Family Medicine (ABFM), the American Board of Psychiatry and Neurology (ABPN), the American Board of Pediatrics (ABP), and the American Board of Otolaryngology (ABO) for diplomates in internal medicine, family medicine, psychiatry and neurology, pediatrics, and otolaryngology is designed to recognize excellence among physicians who are specialists in the care of patients with sleep problems and specific sleep disorders.

In the 2005 practice parameters of AASM, there are 4 types of monitoring procedures: type 1, standard attended in-lab comprehensive polysomnography (PSG); type 2, comprehensive portable PSG; type 3, modified portable sleep apnea testing (also referred to as cardiorespiratory sleep studies), consisting of 4 or more channels of monitoring; and type 4, continuous single or dual bioparameters, consisting of 1 or 2 channels, typically oxygen saturation, or airflow. Types 1 and 2 would be considered polysomnographic studies, and types 3 and 4 would be considered polygraphic sleep studies. The terms sleep studies and PSG are often used interchangeably. CPT coding makes a distinction between sleep studies that do not include electroencephalographic (EEG) monitoring, and PSG, which includes EEG monitoring. PSG is usually conducted in a
sleep laboratory and attended by a technologist, but may also be conducted with type 2 portable monitoring. The type of study is further characterized as attended (supervised) or unattended by a technologist. Home or portable monitoring implies unattended sleep studies, typically conducted in the patient’s home. There are no specific codes for remotely monitored home sleep studies. They would likely be reported with the CPT code for the sleep study with the GT modifier (“via interactive audio and video telecommunications systems”) appended. There is no CPT code for “unattended” PSG.

Cardiorespiratory sleep studies without EEG may be called polygraphic studies and can either be attended or unattended by a technologist. The CPT codes 95806 and 95807 distinguish polygraphic sleep studies that are attended or unattended, but there are no codes that distinguish between type 3 and type 4 sleep studies. A wide variety of portable monitors and proprietary automated scoring systems are being tested and marketed, but the optimum combination of sensors and scoring algorithms is currently unknown. Current recommendations are that the portable monitoring device have 4 channels (oxygen saturation, respiratory effort, respiratory airflow, and heart rate) and allow review of the raw data. Type IV monitors with fewer than 3 channels are not recommended due to reduced diagnostic accuracy and higher failure rates. As with attended PSG, it is important that the raw data from home sleep studies be reviewed by a professional with training in sleep medicine in order to detect artifacts and data loss.

The STOP-BANG questionnaire is a method developed for non-sleep specialists to assess the signs and symptoms of OSA (Snore, Tired, Observed apnea, blood Pressure, BMI, Age, Neck, Gender) and has been shown to have 97% sensitivity and a negative predictive value of 96% (specificity of 33%) for the identification of patients with severe OSA (AHI >30). Overnight oximetry has been used by some sleep specialists as a component of the risk assessment but is not adequate for the diagnosis of OSA. Therefore, a follow-up PSG or home sleep study would still be required to confirm or exclude a diagnosis of OSA.

Polysomnography for children is based on the American Academy of Pediatrics Clinical Practice Guideline: Diagnosis and Management of Childhood Obstructive Sleep Apnea Syndrome. The guideline is to serve as a source for primary care physicians regarding decision making when evaluating children for possible obstructive sleep apnea. This guideline states that all children should be screened for snoring; patients that are considered as high-risk, complex, should be referred to a specialist; those with cardio-respiratory failure require immediate referral; polysomnography is used to discriminate between primary snoring and obstructive sleep apnea; removal of tonsils and adenoids is usually the first line of treatment; high-risk patients should be monitored closely postoperatively and reevaluated to determine the need for additional treatment, if any.

There are 3 pathways that qualify physicians to sit for the new examination: 1) certification by one of the primary sponsoring boards and the current American Board of Sleep Medicine (ABSM); 2) certification by one of the primary sponsoring boards and completion of training in a one-year sleep medicine fellowship program, not overlapping with any other residency or fellowship; and 3) clinical practice experience: this clinical practice experience pathway consists of a 5-year "grandfathering" period open to physicians who are board certified in 1 of the sponsoring specialty boards and who can attest that he or she has the equivalent of one year of
clinical practice experience in sleep medicine during the prior 5 years. This experience could, for example, be gained by an individual practitioner who has devoted one third of his or her practice to sleep medicine over 3 years, or by someone who spent 25% of their practice in the field over the past 4 years. Physicians in the clinical practice pathway will also have to attest to a specified minimum number of patients seen and polysomnograms and multiple sleep latency tests read. At the end of this initial 5-year period, the only route to board eligibility will be through an accredited fellowship training program. This creates a one-time, unprecedented opportunity for pulmonologists, neurologists, psychiatrists, and other physicians already working in the field to sit for the board examination.

**Use of CPAP for Diagnosis of Sleep Apnea**

There were two recent studies that looked at the use of CPAP to diagnose sleep apnea prior to polysomnography. These are summarized below.

Senn, et al (2006), reported on a study that evaluated whether the diagnosis of sleep apnea could be inferred from the response to a treatment trial of nasal CPAP. Sixty-seven sleepy snorers were treated with CPAP for 2 weeks and the result was positive if the patient had used CPAP for > two hours per night and wished to continue therapy. Polysomnography was performed for validation. Forty-four of 76 patients (58%) had sleep apnea as confirmed by an AHI > 10/h. The CPAP trial predicted sleep apnea with a sensitivity of 80%, a specificity of 97%, and a PPV of 97% and NPV of 78%. In 35 of 76 sleep apnea patients (46%) with positive CPAP trial results, polysomnography could have been avoided.

Mulgrew, et al (2007), reported the results of a randomized, controlled, open-label trial that compared standard PSG with ambulatory CPAP titration in high risk patients identified by a diagnostic algorithm. Sixty-eight patients with a high pretest probability of moderate to severe OSA (AHI > 15 episodes/h) were randomly assigned to PSG or ambulatory titration using auto-CPAP and overnight oximetry and were observed for 3 months. The results showed there was no difference in the primary outcome, AHI on CPAP (3.2 vs. 2.5), between the PSG and ambulatory groups, or in the secondary outcomes EES score, sleep apnea Quality of Life Index, and CPAP. They concluded that in the initial management of patients with a high probability of OSA, PSG confers no advantage over the ambulatory approach in terms of diagnosis and CPAP titration.

**Ambulatory Diagnosis and Management by a Sleep Specialist**

Two large randomized controlled trials have been published that compare home-based diagnosis with a portable monitor and titration with APAP versus laboratory-based diagnosis with PSG and titration with CPAP.

In 2012 Rosen et al published results from the HomePAP study, reporting that a home-based strategy for diagnosis and treatment of OSA was noninferior to in-laboratory PSG. HomePAP was an independently funded multicenter trial of 373 patients with a high pretest probability of moderate to severe OSA. All of the study sites were accredited by a professional sleep medicine society and staffed by sleep medicine specialists. Patients were randomized to diagnosis with limited channel portable sleep studies (airflow, respiratory effort, oxygen saturation, electrocardiogram, and body position) and titration with APAP, or to laboratory-based PSG with CPAP titration. Repeat in-lab PSG was required in 11.1% of patients while the technical failure
rate in the home arm, requiring in-lab PSG, was 21.4%. The 2 strategies were similar for acceptance of CPAP therapy, titration pressures, effective titrations, time to treatment, and improvement in ESS scores. Kuna et al conducted a noninferiority trial that compared home testing with a type 3 portable monitor followed by at least 3 nights of APAP versus in-laboratory titration and testing in 296 patients. Patients with an AH1 of 15 or more on home monitoring were scheduled for 4- to 5-day APAP titration, while patients with an AH1 of less than 15 per hour on home monitoring underwent in-laboratory PSG. Improvement in ESS, Center for Epidemiologic Studies Depression Scale, Mental Component Summary of the 12-Item Short-Form Health (SF-12), and Functional Outcomes of Sleep Questionnaire (FOSQ) was similar for home-based and hospital-based treatment, meeting noninferiority parameters.

Other randomized studies have also found outcomes to be similar between home diagnosis and treatment in comparison with hospital-based diagnosis (PSG) and treatment (titration) when both strategies are supervised by a sleep medicine specialist. In addition, use of unattended home PSG has also been reported as an alternative to in-lab PSG for patients with comorbidities.

Analysis of data from the Swiss respiratory polygraphy registry found that in patients selected for portable monitoring (based on high clinical suspicion of OSA by licensed pulmonary physicians by a combination of hypersomnia, snoring, or observed apneas), confirmation or exclusion of sleep disordered breathing was possible in 96% of the 8865 diagnostic sleep studies. From these type 3 studies (4 channels including airflow and respiratory movement, heart rate or electrocardiogram [ECG], and oxygen saturation), 3.5% were not conclusive and required additional PSG.

The evidence for home sleep testing with type 3 monitors (those with a minimum of 4 recording channels) in individuals who have suspected OSA includes randomized controlled trials (RCTs). Relevant outcomes are test accuracy and resource utilization. RCTs have reported that home sleep testing is noninferior to testing in the sleep lab. Current literature indicates that assessment of OSA should be by clinical evaluation and overnight monitoring, either by attended PSG or by portable unattended home monitoring under qualified supervision and that this may be followed by a trial of auto-adjusting positive airway pressure (APAP) to evaluate efficacy and adjust pressure.

- Portable monitoring may be conducted in adult patients with a high pretest probability of OSA and absence of comorbid conditions as determined by clinical evaluation.
- A positive portable monitoring study with at least 4 channels of recording, including arterial oxygen saturation, airflow and respiratory effort, has a high positive predictive value for OSA and can be used as the basis for a CPAP trial to determine efficacy of treatment.
- A negative portable monitoring study cannot be used to rule out OSA. Patients who have a negative result from portable monitoring or have a positive study but do not respond to CPAP should undergo further evaluation.
- Due to the probability of artifacts or loss of data, raw data from the portable monitoring device should be interpreted by a sleep specialist. Follow-up and review of the APAP trial is also needed.
Additional study is needed to determine the most reliable types of devices and combinations of sensors. Questions also remain about the specific training of the medical personnel required to diagnose OSA without increasing risk of misdiagnosis. Based on the current evidence, portable monitoring for 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 evidence is sufficient to determine qualitatively that the technology results in an improvement in health outcomes.

The evidence for limited channel home sleep testing (includes type 4 monitors and WatchPAT) in patients who have OSA includes studies on diagnostic accuracy. Relevant outcomes are test accuracy and resource utilization. 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. The evidence is insufficient to determine the effects of the technology on health outcomes.

Section Summary:
Results of several randomized controlled trials indicate that for patients with a high probability of moderate to severe sleep apnea and no contraindications, a home-based strategy with a multiple channel device that is overseen by a sleep specialist results in outcomes that are roughly equivalent to in-hospital diagnosis and management.

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, 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.

Primary Care versus Specialist Care
A 2013 randomized noninferiority trial by Chai-Coetzer et al compared primary care versus specialist sleep center management of OSA. Prospective participants were screened for eligibility by 34 primary care physicians using a screening questionnaire (n=402) followed by overnight oximetry (n=301). Inclusion criteria were a score of 5 or more on the questionnaire, at least 16 events per hour of oxygen desaturation (≥3%), and an ESS of 8 or higher or persistent hypertension. An ambulatory sleep study with the recommended number of channels was not
performed. Enrolled subjects were then randomly allocated to management by a primary care
physician and community-based nurse, both of whom received brief training in sleep medicine
(n=81), or to a sleep medicine specialist (n=74). CPAP pressure was determined through either 3
days of APAP or PSG titration. At the 6-month follow-up, 63% of patients in the primary care
group and 61% of patients in the specialist groups were using CPAP. ESS scores improved to a
similar extent in both groups, from a mean score of 12.8 to 7.0 in the primary care group and
from 12.5 to 7.0 in the specialist group. There were similar improvements in secondary outcomes
(FOSQ, Sleep Apnea Symptoms Questionnaire, SF-36) for the 2 groups.

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 the diagnosis of OSA in beneficiaries
who have signs and symptoms indicative of OSA. 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. 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 portable monitoring followed by APAP (PM-APAP)
or to PSG for diagnosis and treatment. Patients were screened with a detailed sleep and medical
history questionnaire, and patients on β-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, and in the portable monitoring arm, 4 of 53
patients (8%) were found not to have OSA. Treatment outcomes were similar in the 2 groups,
with a seven-point improvement in ESS score, three-point improvement in the FOSQ, 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. Exclusion criteria for the study included use of α-adrenergic blockers.
Compared with concurrently recorded PSG, the area under the curve (AUC) from receiver
operator characteristic (ROC) analysis for Respiratory Disturbance Index (RDI) greater than 15
was 0.95 (85% sensitivity and 90% specificity). Specificity decreased dramatically at lower
cutoffs (67% for RDI >10, 47% for 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). (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. 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 study 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 (e.g., obstructive, central, mixed, or hypopnea) or to identify body position, and susceptibility to artifact from arrhythmias. 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. At this time, evidence is insufficient to support a change in the sensors required for portable monitoring.

**Apnea Risk Evaluation System (ARESTM)**

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 ARES™ recording and PSG were available for 92 individuals. 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.

**Telemonitoring**

No studies have been identified that compared unattended home sleep studies versus remotely monitored home sleep studies using type 3 devices. Two studies were identified that evaluated telemonitored PSG and 1 study was identified that used telemonitoring of APAP.

The most relevant study is a 2008 report by Kayyali et al that used real-time monitoring of a 14-channel wireless device in the patient’s own home. Patients came to the physician’s office for application of the electrodes and sensors, then took a laptop computer home with them and called the sleep technologist when they were going to bed. Using a wearable radiofrequency transmitter, data were sent to the laptop computer in the patient’s home, which then transmitted the data to a monitoring center via cellphone. If any of the channels or video camera needed adjustments, the technologist would call the patient for intervention. In this validation study, 1 of 10 overnight PSG recordings required a phone call in the middle of the night to adjust an airflow sensor.

A study from 1999 compared consecutive nights of telemonitored PSG versus home PSG in 99 patients. The telemonitored PSG took place in community hospitals that did not have a dedicated sleep center, and the sleep technician who was monitoring the studies remotely could call the on-duty nurse to attempt to correct the technical problem. For the home PSG, electrodes were placed by an experienced technician and the patient went home for the night, returning to the sleep laboratory the next morning to return the equipment and the recording. The 2 nights of PSG were conducted in a randomized order. With a primary endpoint of at least 3 hours of legible recordings, the failure rate for home studies was 23.4% and the failure rate of telemonitored hospital studies was 11.2%. It was noted that there is a risk of detachment of the PSG electrodes.
on the way home. 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 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).

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 five components: pretest instructions to maximize chances for daytime napping; introduction of PAP therapy addressing barriers to use; Type 3 monitoring hookup (ten channels without EEG leads); PAP therapy during one to two hours in bed in which the patient has the possibility of falling asleep with the mask in place; and post-test 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 five days per week with an average of at least four hours per day, was 56% in the PAP-NAP group and 17% in controls.

This single study of PAP-NAP is not sufficient evidence to form conclusions on the efficacy of this approach in improving compliance with CPAP. The patient population was highly selected and the behavioral intervention may be dependent on the specific clinicians providing treatment. In addition, historical controls were used, and they were not well-matched to the study population. For these reasons, the internal validity and generalizability of the results are uncertain. Additional study is needed to evaluate the efficacy of this intervention with greater certainty.

SNAP
In 2004 Liesching et al published the results of a study to determine the accuracy of snoring and apnea analysis by SNAP, a technology that uses snoring recorded by home microphone system and nasal airflow, to diagnoses obstructive sleep apnea as well as severity. Patients had undergone a prior SNAP study and the results were compared to standard polysomnography. The severity of sleep apnea as assessed by the SNAP study was confirmed by polysomnography
in only 11 of 31 patients (35.5%). SNAP severity scores were overestimated in 13 of 31 patients (41.9%) compared to polysomnography results. In the majority of the subjects (8 of the 13), the SNAP study diagnosed OSA when the patient had a normal polysomnography finding. The authors concluded that although there may be some night-to-night variability in polysomnography testing, these results suggest that SNAP studies do not appear to accurately assess the severity of OSA. There has been much criticism of this article, with controversy regarding the testing methods etc. In February 2007, Galer et al published the results of their study focusing on the clinical significance of acoustic data recorded by the SNAP home polysomnography system. Results revealed snoring did not correlate with anthropometric variables such as body mass index and neck circumference. Statistical analysis showed no correlation between respiratory disturbance index and the maximum or average loudness of snoring. Average loudness was predictive of the presence of sleep apnea. The authors concluded that analysis of snoring has limited utility in the evaluation of the patient with sleep apnea but may be able to select patients who would benefit from palatal procedures to reduce snoring.

**CPAP Titration**

Split-night polysomnography studies have been touted to improve waiting time, costs and provide for better efficiency. Drawbacks to split-night studies include such situations of a patient having difficulty falling asleep, testing time can be dramatically reduced, resulting insufficient data. It can also be more difficult to get an accurate portrait of sleep patterns as early in sleep the condition may appear mild but as the study progresses the condition worsens. There could be limits in different positions for evaluation of the occurrence of apneas with REM sleep. Reduced titration time may also be a problem which can decrease time for adjustment to CPAP and incorrect settings indicating the need for a second night study for appropriate CPAP titration. Jorquera et al concluded from their study to assess if CPAP pressure can be adequately titrated in patients with OSA using split-night polysomnography that adequate CPAP pressure can be titrated in 80% of patients subjected to split-night PSG.

For CPAP titration, a split-night study (initial diagnostic polysomnogram followed by CPAP titration during polysomnography on the same night) is an alternative to one full night of diagnostic polysomnography followed by a second night of titration. The AASM Standards of Practice Committee specifies the following four criteria for the use of split-night testing:

1. An AHI of at least 40 is documented during a minimum of two hours of diagnostic polysomnography. Split-night studies may sometimes be considered at an AHI of 20 to 40, based on clinical judgment (e.g., if there are also repetitive long obstructions and major desaturations);
2. CPAP titration is carried out for more than 3 hours (because respiratory events can worsen as the night progresses);
3. Polysomnography documents that CPAP eliminates or nearly eliminates the respiratory events during REM and non-REM (NREM) sleep, including REM sleep with the patient in the supine position;
4. A second full night of polysomnography for CPAP titration is performed if the diagnosis of a sleep-related breathing disorder is confirmed but criteria 2 and 3 are not met.
Polysomnography may be indicated in the following indications per the AASM: in situations with forensic considerations, (e.g., if onset follows trauma or the events they have been associated with, personal injury): or may be indicated when the presumed parasomnia or sleep related seizure disorder does not respond to conventional therapy.

*Refer to Blue Cross and Blue Shield of Alabama’s Medical Policy #619 – Polysomnography for Non-Respiratory Sleep Disorders.

In 2009, a Clinical Guideline for the Evaluation, Management and Long-term Care of Obstructive Sleep Apnea in Adults was prepared by the Adult OSA Task Force of the AASM (Epstein, 2009). According to the AASM, “This task force was assembled to produce a clinical guideline from a review of existing practice parameters and available literature. All existing evidence-based AASM practice parameters relevant to the evaluation and management of OSA in adults were incorporated into this guideline. For areas not covered by the practice parameters, the task force performed a literature review and made consensus recommendation using a modified nominal group technique”.

This document provides specific information regarding in-laboratory PSG, which aligns with the medical necessity criteria contained in this document. The following is excerpted from the AASM document specific to PSG and split-night testing:

Full night PSG is recommended for the diagnosis of a sleep related breathing disorder but a split-night study (initial diagnostic PSG followed by continuous positive airway pressure titration on the same night) is an alternative to the one full night of diagnostic PSG. The split-night study may be performed if an AHI≥ 40/hr is documented during two hours of a diagnostic study but may be considered for an AHI of 20-40/hr based on clinical judgment. In patients where there is a strong suspicion of OSA, if other causes for symptoms have been excluded, a second diagnostic overnight PSG may be necessary to diagnose the disorder.

The diagnosis of OSA is confirmed if the number of obstructive events (apneas, hypopneas + respiratory event related arousals) on PSG is greater than 15 events/hr or greater than five/hour in a patient who reports any of the following: unintentional sleep episodes during wakefulness; daytime sleepiness; unrefreshing sleep; fatigue; insomnia; waking up breath holding, gasping, or choking; or the bed partner describing loud snoring, breathing interruptions, or both during the patient’s sleep. OSA severity is defined as mild for RDI ≥ 5 and < 15, moderate for RDI ≥ 15 and ≤30, and severe for RDI >30/hr (Consensus).

Practice Guidelines and Position Statements
According to the American Academy of Sleep Medicine (AASM), the patient selection criteria for a PSG or sleep study require an estimate of the pretest probability of OSA, based on the signs and symptoms of OSA. Ideally, one would like to know the necessity of a PSG (i.e., with electroencephalography [EEG]) versus a sleep study (without EEG). A detailed analysis of these issues is beyond the scope of this review. However, in 1997 the American Sleep Disorders Association (now the American Academy of Sleep Medicine [AASM]) published practice
parameters for PSG and related procedures; these were most recently updated in 2005. 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 apneas. In 2005, full-night PSG was recommended for the diagnosis of sleep-related breathing disorders and for PAP titration in patients with a Respiratory Disturbance Index (RDI) of at least 15 per hour, or with an RDI of at least 5 per hour in a patient with excessive daytime sleepiness. For patients in the high-pretestprobability stratification group, an attended cardiorespiratory sleep study (type 3 with respiratory effort, airflow, arterial oxygen saturation, and electrocardiogram [ECG] or heart rate) was considered an acceptable alternative to full-night PSG, provided that repeat testing with full-night PSG was permitted for symptomatic patients who had a negative cardiorespiratory sleep study finding.

2014 Guidelines on the diagnosis of OSA in adults from the American College of Physicians (ACP) recommend that clinicians should target their assessment of OSA to individuals with unexplained daytime sleepiness. ACP recommends 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, moderate-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.

2013 Guidelines on the management of OSA in adults from the ACP recommend that all overweight and obese patients diagnosed with OSA should be encouraged to lose weight (strong recommendation, low quality evidence). ACP recommends CPAP as initial therapy for patients diagnosed with OSA (strong recommendation; moderate-quality evidence), and mandibular advancement devices as an alternative therapy to CPAP for patients diagnosed with OSA who prefer mandibular advancement devices or for those with adverse effects associated with CPAP (weak recommendation, low quality evidence).

American Society of Anesthesiologists (ASA) published updated guidelines in 2014 on the perioperative management of patients with obstructive sleep apnea. ASA recommends that anesthesiologist should work with surgeons to develop a protocol whereby patients in whom the possibility of OSA is suspected on clinical grounds are evaluated long enough before the day of surgery to allow preparation of a perioperative management plan, and that if this evaluation does not occur until the day of surgery, the surgeon and anesthesiologist together may elect for presumptive management based on clinical criteria or a last-minute delay of surgery. Guidance on the identification of OSA and recommended changes in the pre-operative, intra-operative, and postoperative management of patients with diagnosed or presumed OSA is provided, including the following:

- Before patients at increased perioperative risk from OSA are scheduled to undergo surgery, a determination should be made regarding whether a surgical procedure is most appropriately performed on an inpatient or outpatient basis.
- Preoperative initiation of CPAP should be considered, particularly if OSA is severe, and the pre-operative use of mandibular advancement devices, oral appliances, and preoperative weight loss should be considered when feasible.
The potential for postoperative respiratory compromise should be considered in selecting intra-operative medications. If moderate sedation is used, ventilation should be continuously monitored by capnography or another automated method if feasible, and use of CPAP or an oral appliance should be considered in patients previously treated with these modalities.

ASA provides a number of recommendations for the postoperative management of patients with OSA, such as use of regional analgesic techniques, reduction of opioid requirements and sedative agents, supplemental oxygen or CPAP, avoidance of supine positions, and for patients who are hospitalized, continuous pulse oximetry monitoring after discharge from the recovery room.

The American Society of Metabolic and Bariatric Surgery (ASMBS) Clinical Issues Committee published guidelines on the perioperative management of obstructive sleep apnea in 2012. The guidelines note that while some reports in the literature recommend routine screening for OSA prior to bariatric surgery, other reports suggest clinical screening only does not result in any increase in postoperative pulmonary complications after laparoscopic Roux-en-Y gastric bypass, and that most current surgical practices refer patients with clinical symptoms of OSA for polysomnography, but do not make this a routine preoperative test prior to bariatric surgery.

ASMBS provided, based on the evidence in the literature to date, 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 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 ≥10, oxygen saturation nadir <80%, or both); in children for whom PSG is indicated to assess sleep-disordered breathing prior to tonsillectomy, clinicians should obtain laboratory based PSG, when available.

The American Academy of Pediatrics (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 AAP’s 2002 guidelines. AAP recommends 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. 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 postoperatively to determine whether additional treatment is required. High-risk patients should be reevaluated 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.

The American Thoracic Society (ATS) published 2013 Guidelines on sleep apnea and driving risk in noncommercial drivers. ATS gives a strong recommendation (based on moderate quality evidence) for treatment of confirmed OSA with CPAP to reduce driving risk. ATS defines a high-risk driver as one who has moderate to severe daytime sleepiness and a recent unintended motor vehicle crash or a near-miss attributable to sleepiness, fatigue, or inattention. Weak recommendations (based on very low-quality evidence) were made for expeditious diagnostic evaluation for patients in whom there is a high clinical suspicion of OSA and against the use of stimulant medications or empiric CPAP to reduce driving risk.

In 2008 the United Kingdom’s National Institute for Health and Clinical Excellence issued guidance on CPAP treatment of OSA, based on a review of the literature and expert opinion. The recommendations included:

- Moderate to severe OSA/hypopnea syndrome (OSAHS) can be diagnosed from patient history and a sleep study using oximetry or other monitoring devices carried out in the person’s home. In some cases, further studies that monitor additional physiological variables in a sleep laboratory or at home may be required, especially when alternative diagnoses are being considered. The severity of OSAHS is usually assessed on the basis of both severity of symptoms (particularly the degree of sleepiness) and the sleep study, by using either the AHI or the oxygen desaturation index. OSAHS is considered mild when the AHI is 5 to 14 in a sleep study, moderate when the AHI is 15 to 30, and severe when the AHI is over 30. In addition to the AHI, the severity of symptoms is also important.
CPAP is recommended as a treatment option for adults with moderate or severe symptomatic OSAHS. CPAP is only recommended as a treatment option for adults with mild OSAHS if: they have symptoms that affect their quality of life and ability to go about their daily activities, and lifestyle advice and any other relevant treatment options have been unsuccessful or are considered inappropriate.

Treatments aim to reduce daytime sleepiness by reducing the number of episodes of apnea/hypopnea experienced during sleep. The alternatives to CPAP are lifestyle management, dental devices, and surgery. Lifestyle management involves helping people to lose weight, stop smoking and/or decrease alcohol consumption. Dental devices are designed to keep the upper airway open during sleep. The efficacy of dental devices has been established in clinical trials, but these devices are traditionally viewed as a treatment option only for mild and moderate OSAHS. Surgery involves resection of the uvula and redundant retrolingual soft tissue. However, there is a lack of evidence of clinical effectiveness, and surgery is not routinely used in clinical practice.

The diagnosis and treatment of OSAHS, and the monitoring of the response, should be carried out by a specialist service with appropriately trained medical and support staff.

The Committee discussed the use of CPAP therapy for children and adolescents with OSAHS. The Committee heard that OSAHS is less common among children than in adults and that the clinical issues and etiology in children are different from those encountered in adults. The Committee concluded that the recommendations for CPAP should apply only to adults with OSAHS.

Key Words:
Sleep study, polysomnography, polysomnogram, obstructive sleep apnea, central sleep apnea, hypopnea, Upper Airway Resistance Syndrome, narcolepsy, apnea hypopnea index(AHI), respiratory disturbance index (RDI), continuous positive airway pressure (CPAP), bilevel positive airway pressure (BiPAP), demand positive airway pressure (DPAP), Epworth Sleepiness Scale (ESS), split-night study, Auto-adjusting positive airway pressure (APAP)

Approved by Governing Bodies:
A large number of polysomnography devices have been approved since 1986.

Benefit Application:
In the PMD or Blue Choice Network service area, sleep disorder services must be provided by a Plan approved sleep disorder center, laboratory, or physician. In order to be given consideration to become a Plan approved sleep disorder center or laboratory, the entity must be fully accredited by one of the following applicable accrediting organizations:

- The Joint Commission (JC)
- Accreditation Commission for Health Care (ACHC)
- American Academy of Sleep Medicine (AASM)
Coverage is subject to member’s specific benefits. Group specific policy will supersede this policy when applicable.
ITS: Home Policy provisions apply
FEP contracts: Special benefit consideration may apply. Refer to member’s benefit plan.

**Current Coding:**
***The performance of multiple nights of an unattended home sleep study will be reimbursed as one service regardless of the number of multiple nights of patient data obtained to successfully and appropriately complete testing.***

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>95782</td>
<td>Polysomnography; younger than 6 years, sleep staging with 4 or more additional parameters of sleep, attended by a technologist</td>
</tr>
<tr>
<td>95783</td>
<td>Polysomnography; younger than 6 years, sleep staging with 4 or more additional parameters of sleep, with initiation of continuous positive airway pressure therapy or bi-level ventilation, attended by a technologist</td>
</tr>
<tr>
<td>95800</td>
<td>Sleep study, unattended, simultaneous recording; heart rate, oxygen saturation, respiratory analysis (e.g., 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 (e.g., by airflow or peripheral arterial tone)</td>
</tr>
<tr>
<td>95803</td>
<td>Actigraphy testing, recording, analysis, interpretation, and report (minimum of 72 hours to 14 consecutive days of recording)</td>
</tr>
<tr>
<td>95805</td>
<td>Multiple sleep latency or maintenance of wakefulness testing, recording, analysis and interpretation of physiological measurements of sleep during multiple trials to assess sleepiness</td>
</tr>
<tr>
<td>95806</td>
<td>Sleep study, unattended, simultaneous recording of heart rate, oxygen saturation, respiratory airflow, and respiratory effort (e.g., thoracoabdominal movement)</td>
</tr>
<tr>
<td>95807</td>
<td>Sleep study, simultaneous recording of ventilation, respiratory effort, 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; age 6 years or older, sleep staging with 4 or more additional parameters of sleep, attended by a technologist</td>
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<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>
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<tr>
<td>95999</td>
<td>Unlisted neurological or neuromuscular diagnostic procedure</td>
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**HCPCS:**

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<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tr>
<td>E1399</td>
<td>Durable medical equipment, miscellaneous</td>
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</tbody>
</table>
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.

References:

Policy History:
Medical Policy Group, February 2007 (2)
Medical Policy Group, May 2007 (1, 2)
Medical Policy Administration Committee, May 2007
Available for comment May 26-July 9, 2007
Medical Policy Group, July 2007 (3)
Medical Policy Administration Committee, July 2007
Available for comment July 13-August 26, 2007
Medical Policy Group, August 2008 (3)
Medical Policy Administration Committee, September 2008
Available for comment September 8-October 22, 2008
Medical Policy Group, December 2008 (2)
Medical Policy Administration Committee, January 2009
Available for comment January 9-February 23, 2009
Medical Policy Group, June 2009 (3)
Medical Policy Administration Committee, June 2009
Coding update effective January 1, 2011, December 2010 (1): Added 2 new CPT codes for unattended sleep studies, 95800 & 95801, deleted 0203T and 0204T
Medical Policy Group, July 2011, Updated Key Points and References.
Medical Policy Group, November 2012; 2013 Coding updates: Added Codes 95782 & 95783; changed the verbiage on Codes 95808, 95810, and 95811; all effective 1/1/13.

Medical Policy Panel, June 2013

Medical Policy Group, June 2013 (3): 2013 Updates to Policy statement, Key Points and References; added to policy statement the use of an abbreviated daytime sleep study (PAP-NAP) as a supplement to standard sleep studies as investigational

Medical Policy Administration Committee, August 2013

Available for comment July 31 through September 20, 2013

Medical Policy Panel, June 2014

Medical Policy Group, June 2014 (5): Policy updated with literature review; Updated key points and references; No change in Policy Statement.

Medical Policy Panel, November 2014

Medical Policy Group, November 2014 (5): Policy updated with literature review; Updated key points and references; No change in Policy Statement

Medical Policy Group, June 2014

Medical Policy Group, June 2014 (5): Policy updated with literature review; Updated key points and references; No change in Policy Statement

Medical Policy Group, December 2015 (6): Update to Description and clarification to policy statement; no change in policy intent.

Medical Policy Group, October 2016 (5): Updates to Description, Policy Statement, Key Points, Key Words and Practice Guidelines, Position Statements, and Benefit Application removed references to polysomnography for non-respiratory sleep disorders (See new policy #619 – Polysomnography for Non-Respiratory Sleep Disorders) and to add information regarding Unsupervised (Home) polysomnography or sleep study.

Medical Policy Panel October 2016

Available for comment October 14 through November 28, 2016

Medical Policy Group, November 2016 (5): Updated policy description of procedures or services, guidelines, and removed language regarding “Diplomate of the American Board of Sleep Medicine and added criteria for the Physician Performing the service must be credentialed as outlined; Removed face to face evaluation and added must perform a thorough review of the History and Physical prior to any polysomnography being performed. Also added additional criteria to lab based sleep study i.e. BMI and high risk OSA criteria.

Medical Policy Group, November 2016 (6): Updated references. Updated policy guidelines to remove “The evaluation”, replaced with “This history and physical”.

Medical Policy Group, December 2016 (6): Added the following for home titration to determine a fixed CPAP pressure using APAP in the policy statement: “Documented hypertension, Mood disorders, Insomnia, Impaired cognition, Ischemic heart disease, History of stroke, Unexplained dysrhythmia.” Added “unexplained dysrhythmia” to in-lab criteria for CPAP initiation/titration. Clarified in Description AASM certifications.

Medical Policy Group, March 2018 (6): Removed old policy statements including “strike-through” sections for clarification. No change to policy intent.

This medical policy is not an authorization, certification, explanation of benefits, or a contract. Eligibility and benefits are determined on a case-by-case basis according to the terms of the member’s plan in effect as of the date services are rendered. All medical policies are based on (i) research of current medical literature and (ii) review of common medical practices in the treatment and diagnosis of disease as of the date hereof. Physicians and other providers are solely responsible for all aspects of medical care and treatment, including the type, quality, and levels of care and treatment.

This policy is intended to be used for adjudication of claims (including pre-admission certification, pre-determinations, and pre-procedure review) in Blue Cross and Blue Shield’s administration of plan contracts.