Medical Coverage Policy

Diagnostic Testing for Sleep Related Breathing Disorders

☒ Device/Equipment ☐ Drug ☐ Medical ☐ Surgery ☒ Test ☐ Other

Effective Date:	5/1/2013	Policy Last Updated:	2/19/2013

☒ **Prospective review is recommended/required. Please check the member agreement for preauthorization guidelines.**

☐ **Prospective review is not required.**

Description:
A sleep study test is used to record various body functions during sleep. Electrodes are placed on the body to record electrical activity of the brain, heart rate, respiratory effort, air flow, blood oxygen levels, and movement of the eye and/or muscle. The tests are used in the evaluation and diagnosis of sleep apnea, narcolepsy, movement disorders, and insomnia. Sleep studies are provided in a sleep laboratory, outpatient facility or in the home depending on the test that is being performed.

Sleep apnea is a disorder where breathing nearly or completely stops for periods of time during sleep. Sleep apnea may be further classified into three categories, obstructive sleep apnea (OSA), central sleep apnea (CSA) and complex sleep apnea (CompSA). Obstructive sleep apnea is the most common category of sleep apnea. In obstructive sleep apnea, the brain sends the message to breathe, but there is a blockage to air flowing into the chest. It is a condition in which repetitive episodes of upper airway obstruction occur during sleep. The obstruction may be localized to one or two areas, or may encompass the entire upper airway passages to include the nasal cavity (nose), oropharynx (palate, tonsils, tonsillar pillars) and hypopharynx (tongue base). The hallmark clinical symptom of OSA is excessive daytime sleepiness.

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. Patients with CSA show no signs of attempts to breathe despite an open airway. CSA is common in patients with heart failure, after stroke or brain injury. There are several types of central sleep apnea, including high altitude-induced periodic breathing, idiopathic CSA, narcotic-induced central apnea, obesity hypoventilation syndrome, and Cheyne-Stokes breathing. Complex sleep apnea is a combination of both obstructive and central sleep apneas. Patients with CompSA at first appear to have OSA but unlike typical OSA patients, central apneas persist or emerge during treatment attempts with a continuous positive airway pressure (CPAP) or bilevel device.

Consequences of sleep apnea may include excessive daytime sleepiness, hypertension, cardiac arrhythmias, pulmonary hypertension, and stroke. Excessive daytime sleepiness is a result of fragmented sleep due to repeated arousals during sleep which can lead to impairment of almost any daytime activity.

An electroencephalogram (EEG), submental electromyogram, and electro-oculogram are required for sleep staging. By definition, a polysomnogram always includes sleep staging, while a cardiorespiratory "sleep study" does not. The actual components of the study will be dictated by the clinical situation.

Typically, the evaluation of obstructive sleep apnea (OSA) includes sleep staging to assess arousals from sleep, and determination of the frequency of apneas and hypopneas from channels measuring oxygen

desaturation, respiratory airflow, and respiratory effort. In adults, an obstructive apnea is defined as at least a 10-second cessation of respiration associated with ongoing ventilatory effort.

Polysomnogram:
The polysomnogram (PSG), also referred to as a sleep study, is a multiple-component test which electronically records data and is needed for an accurate diagnosis of sleep disorders. PSGs are used when there is no other adequate and less complex way to treat a sleep disorder. Sleep apnea, narcolepsy, movement disorders, and persistent insomnia are examples of medical conditions that might require a PSG.

A split-night study (initial diagnostic polysomnography [PSG] followed by CPAP titration during PSG on the same night) in the facility setting is appropriate if the following criteria are met during a facility based test:

- An AHI of at least 40 is documented during a minimum of 2 hours of diagnostic PSG. Split-night studies may sometimes be considered at an AHI of 20 to 40, based on clinical judgment (e.g., if there are repetitive long obstructions and major desaturations). However, at AHI values below 40, determination of CPAP pressure requirements based on split-night studies, may be less accurate than in full-night calibrations.
- CPAP titration is carried out for more than 3 hours because respiratory events can worsen as the night progresses.
- PSG documents that CPAP eliminates or nearly eliminates the respiratory events during rapid eye movement (REM) and non-REM (NREM) sleep, including REM sleep with the patient in the supine position.

Types of sleep studies performed in a sleep laboratory:
Type I
Attended studies (sleep studies are performed with the oversight of a sleep technologist) with full sleep staging (sleep staging monitors the transition through the sleep stages, traditionally with the use of EEG electrodes that monitor the brain). Type I devices must include the following channels:

- EEG
- EOG
- ECG/Heart rate
- Chin EMG
- Limb EMG
- Respiratory effort at thorax and abdomen
- Air Flow from nasal canula thermistor and/or X-Flow (AASM recommends RIP technology)
- Pulse Oximetry
- Additional channels for CPAP/BiPap levels, CO2, pH, pressure, etc.

Types of sleep studies performed in the home
Type II
Home sleep test (HST) with Type II portable monitor, unattended (sleep studies are performed without the oversight of a sleep technologist), with a minimum of 7 channels. Type II devices must include the following channels:

- EEG
- EOG
- ECG/heart rate
- EMG
- Airflow
- Respiratory effort
- Oxygen saturation
-

Type III
Home sleep test (HST) with Type III portable monitor, unattended with a minimum of 4 channels. Type III devices must include the following channels:

- 2 respiratory movement/airflow
- 1 ECG/heart rate
- 1 oxygen saturation

Type IV
Home sleep test (HST) with Type IV portable monitor, unattended; minimum of 3 channels. Type IV devices must allow channels that allow:

- direct calculation of an Apnea Hypopnea Index (AHI) or Respiratory Disturbance Index (RDI) as the result of measuring airflow or thoracoabdominal movement

Home sleep testing with a minimum of 4 recording channels (including oxygen saturation, respiratory movement, airflow, and EKG or heart rate) are considered medically necessary in adult (≥18) patients who are at high risk for obstructive sleep apnea* (OSA) as described below and have no evidence by history or physical examination, of a health condition that might alter ventilation or require alternative treatment, including but not limited to the following:

- central sleep apnea
- congestive heart failure
- chronic pulmonary disease
- obesity hypoventilation syndrome
- narcolepsy
- periodic limb movements in sleep
- restless leg syndrome

Repeat unattended home sleep studies with a minimum of four recording channels (including oxygen saturation, respiratory movement, airflow, and EKG/heart rate) may be considered medically necessary in adult patients under the following circumstances:

- Inadequate results from initial test; or
- To assess efficacy of surgery or oral appliances/devices; or
- To re-evaluate the diagnosis of OSA and need for continued CPAP, e.g., if there is a significant change in weight or change in symptoms suggesting that CPAP should be retitrated or possibly discontinued

Home sleep studies are not appropriate for general screening of asymptomatic populations or low risk patients.

*High risk criteria for OSA

- Habitual snoring
- Observed apneas
- Excessive daytime sleepiness with a Berlin Questionnaire or Epworth Sleepiness Scale evaluation consistent with moderate to high risk for OSA
- A BMI >35

Actigraphy refers to the assessment of activity patterns by devices typically placed on the wrist or ankle that record body movement, which is interpreted by computer algorithms as periods of sleep and wake. Sleep/wake cycles may be altered in sleep disorders including insomnia, circadian rhythm sleep disorders, sleep-related breathing disorders, restless legs syndrome, and periodic limb movement disorder. In addition, actigraphy could potentially be used to assess sleep/wake disturbances associated with numerous other diseases or disorders such as attention-deficit/hyperactivity disorder, chronic fatigue syndrome, asthma, Parkinson's syndrome, post-surgical delirium, stroke, advanced cancer, and intensive care monitoring. Literature review updates have not identified any studies that evaluated whether the use

of actigraphy would result in improved health outcomes for patients with sleep disorders. Actigraphty is not medically necessary as there is insufficient peer-reviewed scientific literature that demonstrates that the procedure/service is effective.

Medical Criteria:
Preauthorization required for BC for Medicare and recommended for all other products for sleep laboratory/facility based testing.
Facility based testing is medically necessary if one of the following criteria is met:

- Severe pulmonary disease including:
  1. symptomatic lung disease not controlled by medical therapy
  2. COPD with O2 requirements
  3. Obesity Hypoventilation syndrome
- Cardiac disease including
  1. Congestive heart failure NYHA class 3 or 4
  2. Documented pulmonary hypertension (moderate or severe)
  3. Uncontrolled Cardiac arrhythmias
  4. Prior myocardial infarction within the last 6 months
- Neurologic disorders including:
  1. Suspicion for nocturnal seizures
  2. Neurogenerative disorders resulting in neuromuscular weakness or cognitive impairment
  3. History of prior stroke/TIA within previous 6 months
- Suspicion of central sleep apnea, periodic limb movement disorder, restless leg movements , parasomnias, narcolepsy
- Body Mass Index (BMI)>35
- Individual with special needs that is not capable of following instructions for HST with a high pretest probability of OSA
- Previous HST was inconclusive in the diagnosis of OSA in an individual with a high pretest probability of OSA
- Age < 18 years of age

A repeat supervised polysomnography performed in a sleep laboratory may be considered medically necessary under the following circumstances:

- Repeat test for titration of CPAP in patients who had positive single night . Repeat tests are not usually required for positive home sleep studies as auto-adjusting CPAP are used following home studies.
- Patients who are not doing well with APAP or while on a fixed CPAP setting have a failure of resolution of symptoms or recurrence of symptoms; or
- To assess efficacy of surgery (including adenotonsillectomy) or oral appliances/devices; or
- To re-evaluate the diagnosis of OSA and need for continued CPAP, e.g., if there is a significant change in weight, substantial change in symptoms or clinical situation or suggesting that CPAP should be retitrated or possibly discontinued.

Policy
Commercial
Sleep studies performed in a sleep laboratory or outpatient setting are covered when the above medical necessity criteria are met. Preauthorization is recommended.

Split-night study is covered if the initial request for a facility based study was approved and it is felt that a split-night study is appropriate during the testing.

Home sleep testing with a with a minimum of 4 recording channels (including oxygen saturation, respiratory movement, airflow, and EKG or heart rate) are considered medically necessary in adult patients who are at high risk for obstructive sleep apnea. Three (3)channel studies as not medically necessary as a minimum sleep study must record airflow, respiratory effort, and blood oxygenation.

Blue Chip for Medicare
Sleep studies performed in a sleep laboratory or outpatient setting are covered when the above medical necessity criteria are met. Preauthorization is required.

Home sleep testing including 3 channel recordings are considered medically necessary in adult patients who are at high risk for obstructive sleep apnea.

For all Products
Actigraphty is not medically necessary as there is insufficient peer-reviewed scientific literature that demonstrates that the procedure/service is effective.
Effective April 1, 2010 for labs:

- All sleep labs must be accredited by the American Academy of Sleep Medicine (AASM).
- All sleep lab providers performing sleep testing services must participate and be in good standing with Medicare

Effective April 1, 2010 for physicians:

- All physicians reading or supervising sleep tests must be board-certified in sleep medicine or have completed the necessary training requirements to take the exam in sleep medicine.

Coverage:
Benefits may vary between groups/contracts. Please refer to the appropriate Evidence of Coverage, Subscriber Agreement, or Benefit Booklet for applicable diagnostic testing coverage/benefits.

Coding:
The following codes are covered in a sleep laboratory/facility when the above medical criteria are met:

95782 Polysomnography; younger than 6 years, sleep staging with 4 or more additional parameters of sleep, attended by a technologist (new code effective January 1, 2013)
95783 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 (new code effective January 1, 2013)
95805 Multiple sleep latency or maintenance of wakefulness testing, recording, analysis and interpretation of physiological measurements of sleep during multiple trials to assess sleepiness
95807 Sleep study, simultaneous recording of ventilation, respiratory effort, ECG or heart rate, and oxygen saturation, attended by a technologist
95808 Polysomnography; sleep staging with 1-3 additional parameters of sleep, attended by a technologist
95810 Polysomnography; sleep staging with 4 or more additional parameters of sleep, attended by a technologist
95811 Polysomnography; 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 (split night studies)

The following codes are covered for all products

95800 Sleep study, unattended, simultaneous recording; heart rate, oxygen saturation, respiratory analysis (eg, by airflow or peripheral arterial tone), and sleep time
95801 Sleep study, unattended, simultaneous recording; minimum of heart rate, oxygen saturation, and respiratory analysis (eg, by airflow or peripheral arterial tone)
95806 Sleep study, simultaneous recording of ventilation, respiratory effort, ECG or heart rate, and oxygen saturation, unattended by a technologist

G0398 Home sleep study test (HST) with type II portable monitor, unattended; minimum of 7 channels: EEG, EOG, EMG, ECG/heart reate,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 1oxygen saturation

The following code is covered for BC for Medicare only and not medically necessary for all other products

G0400 Home sleep test (HST) with type IV portable monitor, unattended; minimum of 3 channels

The following code is not medically necessary for all products

95803 Actigraphy testing, recording, analysis, interpretation and report (minimum of 72 hours to 14 consecutive days of recording)

Note:

Sleep studies and polysomnography refer to the continuous and simultaneous monitoring and recording of various physiological and pathophysiological parameters of sleep for 6 or more hours with physician review, interpretation and report. Sleep studies of 6 hours or less should be classified as reduced services and should be reported with a 52 modifier.

Also Known As:

Polysomnography

Related Topics:

CPAP, BiPAP-S, BiPAP-ST
Minimally Invasive Surgery for Snoring, Obstructive Sleep Apnea Syndrome/Upper Airway Resistance Syndrome
Oral appliances in the treatment of sleep apnea

Published:

Provider Update, April 2013
Provider Update, December 2012
Provider Update, September 2011
Provider Update, August 2010
Provider Update, December 2009
Provider Update, September 2008
Policy Update, August 2007
Policy Update, August 2006
Policy Update, October 2005
Policy Update, April 1998

References:

American Academy of Sleep Medicine. http://www.aasmnet.org/PortableMonitoring.aspx.

Blue Cross and Blue Shield Association: Medical Policy Reference Manual (MPRM) 2.01.18 /Diagnosis and Medical Management of Obstructive Sleep Apnea Syndrome. Accessed on 4/9/2010

Chesson AL, Berry RB, Pack A. American Academy of Sleep Medicine; American Thoracic Society: American College of Chest Physicians. Practice Parameters for the Use of Portable Monitoring Devices in the Investigation of Suspected Obstructive Sleep Apnea in Adults. Sleep;2003:124:1543-1579.

American Academy of Sleep Medicine:
http://www.aasmne.otrg/Resources/PracticeParameters/PP_PMD_OSA.pdf.

Gami AS, Howard DE, Olson EJ, Somers VK. Day-Night Pattern of Sudden Death in Obstructive Sleep Apnea. NEJM;24Mar2005:352:12:1206-1214.

Kushida CA, Littner MR, Morgenthaler T, Alessi CA, Bailey D, Coleman J, Friedman L, Hirhkowitz M, Kapen S, Kramer M, Lee-Chiong T, Loube DL, Owens J, Pancer JP, Wise M. Practice Parameters for the Indications for Polysomnography and Related Procedures: An Update for 2005.Sleep;2005:28:4:499-516.

Medsolutions Guidelines:
http://www.medsolutions.com/documents/guidelines/guideline_downloads/SLEEP%20APNEA%20GUIDELINES%202012.pdf.

Somers VK. Sleep – A New Cardiovascular Frontier. NEJM;10Nov2005:35319:2070-2073.