

## Medical Policy

Adult Sleep Studies	
<b>MEDICAL POLICY NUMBER</b>	Med_Clin_Ops-001
<b>CURRENT VERSION EFFECTIVE DATE</b>	January 1, 2024
<b>APPLICABLE PRODUCT AND MARKET</b>	Individual Family Plan: All Plans Small Group: All Plans Medicare Advantage: All Plans

Brand New Day/Central Health Medicare Plan develops policies and makes coverage determinations using credible scientific evidence including but not limited to MCG™ Health Guidelines, the ASAM Criteria™, and other third party sources, such as peer-reviewed medical literature generally recognized by the relevant medical community, physician specialty society recommendations, and expert opinion as relevant to supplement those sources. Brand New Day/Central Health Medicare Plan Medical Policies, MCG™ Guidelines, and the ASAM Criteria™ are not intended to be used without the independent clinical judgment of a qualified health care provider considering the individual circumstances of each member's case. The treating health care providers are solely responsible for diagnosis, treatment, and medical advice. Members may contact Brand New Day/Central Health Medicare Plan Customer Service at the phone number listed on their member identification card to discuss their benefits more specifically. Providers with questions about this Brand New Day/Central Health Medicare Plan policy may contact the Health Plan. Brand New Day/Central Health Medicare Plan policies and practices are compliant with federal and state requirements, including mental health parity laws.

If there is a difference between this policy and the member specific plan document, the member benefit plan document will govern. For Medicare Advantage members, Medicare National Coverage Determinations (NCD) and Local Coverage Determinations (LCD), govern. Refer to the CMS website at <http://www.cms.gov> for additional information.

Brand New Day/Central Health Medicare Plan medical policies address technology assessment of new and emerging treatments, devices, drugs, etc. They are developed to assist in administering plan benefits and do not constitute an offer of coverage nor medical advice. Brand New Day/Central Health Medicare Plan medical policies contain only a partial, general description of plan or program benefits and do not constitute a contract. Brand New Day/Central Health Medicare Plan does not provide health care services and, therefore, cannot guarantee any results or outcomes. Treating providers are solely responsible for medical advice and treatment of members. Our medical policies are updated based on changes in the evidence and healthcare coding and therefore are subject to change without notice. CPT codes, descriptions and materials are copyrighted by the American Medical Association (AMA). MCG™ and Care Guidelines® are trademarks of MCG Health, LLC (MCG).

### PURPOSE

The purpose of this policy is to establish clinical review criteria for medical necessity review of adult sleep study testing.

### POLICY

#### **Clinical Review Criteria**

Sleep study testing may be considered for authorization when the criteria below are met.

In accordance with Brand New Day/Central Health Medicare Plan's Site of Service policy, covered sleep study services must be performed in the most clinically appropriate and cost-effective setting. Facility-based nocturnal polysomnography (NPSG) may be authorized only when the member does not meet the criteria for a home-based sleep study.

#### **OBSTRUCTIVE SLEEP APNEA TESTING**

Testing for the diagnosis of obstructive sleep apnea (OSA) in adults at least 18 years old may be authorized for members presenting with clinical features suggestive of moderate to severe OSA, as evidenced by **ALL** of the following:

- 1) Excessive daytime sleepiness
- 2) At least **ONE** of the following:

## Medical Policy

- BMI greater than 30.
- Excessive sleepiness while driving.
- Loud/intense snoring.
- Epworth Sleepiness Scale score of 10 or greater.
- Witnessed nocturnal apnea, choking or gasping.

### HOME SLEEP STUDIES

- A. Authorization requests for attended, facility-based nocturnal polysomnography (NPSG) will be redirected to the preferred site of care (home sleep study) when the member meets the criteria below. Authorization is not required for Home Sleep Studies.
- B. Members are eligible for home sleep study coverage when **ALL** of the following conditions are met:
- 1) The member has symptoms suggestive of obstructive sleep apnea.
  - 2) The sleep study is used as part of a comprehensive sleep evaluation.

### FACILITY-BASED NOCTURNAL POLYSOMNOGRAPHY (NPSG)

#### A. NPSG for Obstructive Sleep Apnea

*Attended, Facility based nocturnal polysomnography (NPSG)* using a Type I device may be authorized for diagnosis of obstructive sleep apnea when **ALL** of the following are met:

- 1) The member has symptoms suggestive of obstructive sleep apnea,
- 2) **ONE or more** of the following situations applies:
  - a) The member has **ONE or more** of the following comorbid medical conditions that may impair the accuracy of a home sleep study:
    - Moderate or severe pulmonary disease (for example, COPD or asthma as documented by Pulmonary Function Tests or nocturnal oxygen use or daytime hypercapnea with documented arterial blood gasses showing pO<sub>2</sub> less than 60 or pCO<sub>2</sub> greater than 45).
    - Neuromuscular disease (for example, Parkinson's disease, spina bifida, myotonic dystrophy, amyotrophic lateral sclerosis).
    - Stroke with residual respiratory effects.
    - Epilepsy.
    - Congestive heart failure (NYHA class III or IV or Left Ventricular Ejection Fraction less than 45%).
    - Pulmonary hypertension (mean pulmonary artery pressure > 25 mm Hg)
    - Chronic opioid medication use.

### Medical Policy

- BMI greater than 45, or pulmonary function studies show obesity hypoventilation syndrome (BMI greater than 35 plus arterial blood gas with PCO<sub>2</sub> greater than 45, or BMI greater than 35 plus inability to lie flat in bed).
- b) The member has **ONE or more** of the following comorbidities:
- Periodic limb movement disorder (involuntary, jerking movements of the legs during sleep causing excessive daytime sleepiness due to sleep fragmentation).
  - Parasomnias that are unusual or atypical because of the individual's age at onset, the time, duration or frequency of occurrence of the behavior including, but not limited to: nocturnal seizures, psychogenic dissociative states, REM sleep behavior disorder, sleep talking and/or confusional arousals;
  - Narcolepsy.
  - Central sleep apnea or complex sleep apnea.
  - Severe insomnia.
- c) The member has negative or technically inadequate portable monitoring results from previous home sleep study.
- d) The member has low pretest probability of obstructive sleep apnea (BMI of less than 30), normal airway (Mallampati score 1 or 2), no snoring, and normal neck circumference (less than 17 inches in men, and less than 16 inches in women).
- e) The member lacks the ability to use portable monitoring equipment safely at home.

#### **B. NPSG for persons already diagnosed with obstructive sleep apnea**

**Facility based nocturnal polysomnography (NPSG)** may be authorized for persons already diagnosed with obstructive sleep apnea for **ONE or more** of the following purposes:

- 1) To titrate CPAP in persons diagnosed with clinically significant OSA for whom in-laboratory NPSG was medically necessary, but who were unable to undergo a successful split-night study.
- 2) To titrate CPAP in persons with clinically significant OSA for whom in-laboratory NPSG was medically necessary, and who underwent a split-night study that did not abolish the vast majority of obstructive respiratory events.
- 3) To monitor results from CPAP in persons with OSA who have persistent significant symptoms (disturbed sleep with significant arousals) despite documented AHI less than 5 and documented compliance with CPAP (CPAP used for 70 percent of nights for four or more hours per night, for two or more months).
- 4) To confirm diagnosis of obstructive sleep apnea prior to surgical modifications of the upper airway.

#### **C. NPSG for Other Sleep Disorders**

**Facility based nocturnal polysomnography (NPSG)** may be authorized if OSA has been excluded or is adequately treated, and the member has symptoms that suggest at least

## Medical Policy

**ONE** of the following conditions:

- 1) Periodic limb movement disorder (involuntary, jerking movements of the legs during sleep causing excessive daytime sleepiness due to sleep fragmentation).
- 2) Restless Legs Syndrome/Willis-Ekbom Disease that is unresponsive to treatment.
- 3) Parasomnias that are unusual or atypical because of the individual's age at onset, the time, duration or frequency of occurrence of the behavior including, but not limited to: violent or potentially injurious sleep behavior, nocturnal seizures, psychogenic dissociative states, REM sleep behavior disorder, sleep talking and/or confusional arousals.
- 4) Narcolepsy.
- 5) Central sleep apnea or complex sleep apnea.

### **D. NPSG - Split-Night**

**Facility based nocturnal polysomnography (NPSG)** using a split-night study NPSG or an NPSG where the final portion of the NP is used to titrate continuous positive airway pressure (CPAP) may be authorized when an attended NPSG is indicated. An additional full-night CPAP titration NPSG may be authorized only if **ONE** of the following occurs:

- 1) The apnea-hypopnea index (AHI) is less than or equal to 15 during the first 2 hours of a diagnostic sleep study.
- 2) The split- night study did not allow for the abolition of the vast majority of obstructive respiratory events.

### **E. NPSG Video-Electroencephalogram (EEG)**

**Facility based nocturnal polysomnography (NPSG)** with Video-EEG-NPSG (NPSG with video monitoring of body positions and extended EEG channels) may be authorized when used for **ONE or more** of the following

- 1) Assist with the diagnosis of paroxysmal arousals
- 2) Assist with diagnosis of other sleep disruptions that are thought to be seizure related when the initial clinical evaluation and results of a standard EEG are inconclusive.

## **DAYTIME SLEEP STUDIES**

### **A. Multiple Sleep Latency Testing (MSLT)**

- 1) MSLT may be authorized when indicated by **ONE** or more the following:
  - a) Suspected narcolepsy
  - b) Other causes of excessive daytime sleepiness have been excluded by clinical assessment.
- 2) MSLT may be authorized for appropriate diagnosis, if **ALL** of the following are met:
  - a) MSLT is conducted following a period of sufficient sleep.
  - b) MLST is performed after a facility-based NPSG to ensure that the member is adequately rested.
  - c) MLST is NOT conducted following a split-night NPSG.

## Medical Policy

### **B. Maintenance of Wakefulness Test (MWT)**

- 1) MWT may be authorized when indicated by **ALL** of the following:
  - a) A member is unable to stay awake, resulting in a safety issue.
  - b) A member is being assessed for response to treatment of a sleep disorder.

## **REPEAT SLEEP STUDIES**

### **A. Repeat NPSG:**

It may be medically necessary to perform repeat sleep studies up to twice a year. If repeat testing is indicated, attended full-channel nocturnal polysomnography performed in a healthcare facility is considered medically necessary for persons who meet criteria for attended NPSG (see above); in all other cases, **repeat, unattended home sleep studies are considered medically necessary.**

Repeat sleep studies may be authorized for **ONE or more** of the following:

- 1) To determine whether positive airway pressure treatment (i.e., CPAP, bilevel positive airway pressure (BiPAP), demand positive airway pressure (DPAP), variable positive airway pressure (VPAP), or auto-titrating positive airway pressure (AutoPAP)) continues to be effective.
- 2) To determine whether positive airway pressure treatment settings need to be changed.
- 3) To determine whether continued treatment with positive airway pressure treatment is necessary.
- 4) To assess treatment response after upper airway surgical procedures and after initial treatment with oral appliances.
- 5) Persistent or new symptoms despite documented appropriate treatment.
- 6) Clinically significant body weight changes.

### **B. Repeat MSLT and MWT:**

Brand New Day/Central Health Medicare Plan considers repeat MSLT and MWT medically necessary when **ONE** or more of the following applies:

- 1) The initial test was invalid or uninterpretable; or
- 2) The initial test is affected by extraneous circumstances or when study conditions were not present during initial testing; or
- 3) The patient is suspected to have narcolepsy but earlier MSLT or MWT evaluation did not provide polygraphic confirmation.

## **HYPOGLOSSAL NERVE STIMULATION**

An individual being evaluated for hypoglossal nerve stimulation may be evaluated with a home sleep test if the individual **does not meet criteria for supervised polysomnography.**

Hypoglossal nerve stimulation may be considered medically necessary when **ALL** of the following

## Medical Policy

criteria are met:

- 1) Member has been diagnosed with moderate to severe obstructive sleep apnea.
- 2) Member is at least 22 years of age or older.
- 3) The member has a body mass index  $\leq 35$
- 4) The member has had a sleep study performed within the last 24 months with demonstrated AHI  $\geq 15$  with less than 25% central apneas.
- 5) CPAP or BIPAP failure is demonstrated by ALL of the following
  - a) residual AHI  $\geq 15$
  - b) failure to use CPAP/BIPAP  $\geq 4$  hours per night for  $\geq 5$  nights per week after good faith effort at CPAP compliance demonstrated by **ALL** of the following appropriate acclimation measures:
    - Inability to tolerate CPAP, as documented by attestation supported by medical records from a sleep medicine specialist, which must include :
      - CPAP titration to obtain the most effective pressure compatible with individual comfort.
      - Measures taken to acclimate the member to the therapy, including emotional support, alternative mask fittings, nasal pillows, humidification, etc.
      - Documented effort to tolerate CPAP treatment for a minimum of two months.

### **EXCLUSIONS AND UNAUTHORIZED DIAGNOSTIC TECHNIQUES:**

- A. Sleep studies devices that do not provide a measurement of apnea-hypopnea index (AHI) and oxygen saturation may not be authorized because they do not provide sufficient information to prescribe treatment.
  - Examples of devices that generally **are not** approved include:
    - Biancamed SleepMinder
    - SNAP testing with fewer than three channels
    - SleepImage Sleep Quality Screener.
    - ApneaLink (this device does not meet criteria as a covered type IV device because it does not measure airflow)
- B. Brand New Day/Central Health Medicare Plan considers the following diagnostic techniques investigational and will not be authorized:
  - 1) Repeat home sleep testing on multiple consecutive nights with multiple interpretations..
  - 2) Acoustic pharyngometry.
  - 3) Actigraphy testing when used alone. Actigraphy, which consists of a small portable

## Medical Policy

device that senses physical motion and stores the resulting information, has been used in research studies for the evaluation of rest-activity cycles. This technique, when used alone (single channel study), has not been validated as a method of diagnosing OSA.

- 4) Cephalography X-rays for diagnosis of OSA.
- 5) Daytime nap polysomnography or “PAP Nap” for OSA.
- 6) Diagnostic audio recording, with or without pulse oximetry to diagnose sleep apnea.
- 7) Genetic association studies (e.g., tumor necrosis factor-alpha (TNFA) 308 A/G polymorphism, angiotensin-converting enzyme (ACE) gene insertion/deletion, apolipoprotein E (ApoE) polymorphism) for the diagnosis of obstructive sleep apnea.
- 8) Hypoglossal nerve stimulation for central sleep apnea. . -
- 9) Laryngeal function studies.
- 10) Maintenance of wakefulness test for diagnosis of OSA.
- 11) Multiple sleep latency test for diagnosis of OSA.
- 12) SleepStrip.
- 13) Sonography.
- 14) The static charge sensitive bed.
- 15) Tomographic X-ray.
- 16) X-rays of the temporomandibular joint or sella turcica.
- 17) SNAP testing using less than 3 channels. However, SNAP testing using 3 or more channels is considered a medically necessary method of home sleep testing.

## BACKGROUND

Airway obstruction during sleep is a commonly recognized problem, which may be associated with significant morbidity. Various diagnostic studies and treatment approaches are employed in managing this condition.

Data from the history and physical examination have been shown to be sensitive but not specific for diagnosing obstructive sleep apnea (OSA). According to available guidelines, the following signs and symptoms may suggest significant risk for OSA: reported apneas by sleep partner; awakening with choking; intense snoring; excessive daytime sleepiness, especially with impairment of driving; male gender and post-menopausal females; obesity (body mass index [BMI] greater than or equal to 30); large neck circumference; and hypertension.

Diagnostic tests for OSA can be classified into 4 types. The most comprehensive type is Type I: attended, or in-facility nocturnal polysomnography (NPSG). There are 3 categories of portable monitors (used in both attended and unattended settings). Type II monitors have a minimum of 7 channels (e.g., electroencephalogram (EEG), electrooculogram (EOG), electromyogram (EMG), electrocardiogram (ECG), heart rate, airflow, respiratory effort, oxygen saturation). Type III monitors have a minimum of 4 monitored channels including ventilation or airflow (at least 2 channels of respiratory movement or respiratory movement and airflow), heart

## Medical Policy

rate or ECG, and oxygen saturation. Type IV are all other monitors that fail to fulfill criteria for type III monitors. These are split into 2 subgroups: those assessing 3 or more bio parameters (i.e., most newer monitors fall here) and those assessing 1 or 2 bio parameters (i.e., the original ASDA level IV category) (see Appendix B).

Examples of type II, III and IV monitors include: AccuSom, Alice PDx Portable Sleep System, ApneaLink Plus, ApneaLink Air, ARES, SleepView, Stardust II, and Watch-PAT.

There is no "gold standard" for the diagnosis of OSA in adults. Nocturnal Polysomnogram (NPSG) performed in a sleep laboratory (Type I) is a definitive diagnostic tool to confirm the presence and severity of upper airway obstruction. According to current guidelines, a minimum 6-hour NPSG is preferred, which allows for the assessment of variability related to sleep stage and position with respect to the frequency of obstructive respiratory events and the occurrence of other types of nocturnal events such as periodic limb movements.

According to the available literature, NPSG performed in a sleep laboratory should include EEG, EOG, EMG, oronasal airflow, chest wall effort, body position, snore microphone, ECG, and oxyhemoglobin saturation. However, diagnostic NPSG may be performed in a healthcare facility, or for appropriate cases, in the patient's home. The use of unattended home sleep monitoring using a Type II, III, or IV device, may identify apnea-hypopnea index (AHI) suggestive of obstructive sleep apnea-hypopnea syndrome (OSAHS).

A Decision Memorandum from the Centers for Medicare & Medicaid Services concluded that there is sufficient evidence to support the use of devices that measure 3 or more channels that include actigraphy, oximetry, and peripheral arterial tone to aid the diagnosis of OSA in persons who have signs and symptoms indicative of OSA if performed unattended in or out of a sleep lab facility or attended in a sleep lab facility. An assessment by the California Technology Assessment Forum found sufficient evidence to support the use of the Watch-PAT device for diagnosis of OSA.

- Examples of devices that generally **are** approved include:
  - AccuSom
  - Alice PDx Portable Sleep System
  - ApneaLink Plus(records 5 channels, including airflow, and would be considered an approved device)
  - ApneaLink Air
  - ARES
  - SleepView
  - Stardust II
  - Watch-PAT.

Clinical guidelines on the use of unattended home (portable) monitoring devices for the diagnosis of obstructive sleep apnea in adults, from the American Academy of Sleep Medicine for the diagnosis of OSA should be performed only in conjunction with a comprehensive sleep evaluation. The guidelines state that unattended sleep studies are not appropriate for the diagnosis of OSA in patients with significant comorbid medical conditions that may degrade the accuracy of unattended sleep studies, including moderate to severe pulmonary disease,



## Medical Policy

neuromuscular disease, or congestive heart failure. The guidelines note that unattended sleep studies are not appropriate for the diagnostic evaluation of OSA in patients suspected of having other significant non-respiratory sleep disorder that require evaluation (e.g., parasomnias, sleep related movement disorders). The guidelines state that unattended sleep studies are not appropriate for general screening of asymptomatic populations.

According to the American Academy of Sleep Medicine (AASM) guidelines, unattended sleep studies may be indicated for the diagnosis of OSA in patients for whom in-laboratory NPSG is not possible by virtue of immobility, safety, or critical illness. Unattended sleep studies may be indicated to monitor the response to non-continuous positive airway pressure treatments for obstructive sleep apnea, including oral appliances, upper airway surgery, and weight loss. The guidelines note that in laboratory NPSG may be indicated in cases where unattended sleep studies are technically inadequate or fail to establish the diagnosis of OSA in patients with a high pretest probability.

According to the American Sleep Disorders Association, split-night study NPSG is indicated for patients with an AHI greater than 40 events/hour during the first 2 hours of a diagnostic NPSG. Split-night studies may also be considered for patients with an AHI of 20 to 40 events/hour, based on clinical observations, such as the occurrence of obstructive respiratory events with a prolonged duration or in association with severe oxygen desaturation. Split-night studies require the recording and analysis of the same parameters as a standard diagnostic NPSG. Accepted guidelines provide that the diagnostic portion of a split-night study should be at least 2 hours duration. A minimum of 3 hours sleep is preferred to adequately titrate CPAP after this treatment is initiated.

Following a standard diagnostic NPSG, the available literature indicates that OSA patients should receive CPAP titration to specify the lowest CPAP level, which abolishes obstructive apneas, hypopneas, respiratory-effort related arousals, and snoring in all sleep positions and sleep stages. On occasion, an additional full-night CPAP titration NPSG may also be required following split-night study if the split-night NPSG did not allow for the abolishment of the vast majority of obstructive respiratory events or prescribed CPAP treatment does not control clinical symptoms. Alternatively, persons diagnosed with portable monitoring may be prescribed an auto-titrating positive airway pressure device (AutoPAP) that does not require attended titration.

According to guidelines from the American Academy of Sleep Medicine, polysomnography with video recording and additional EEG channels in an extended bilateral montage may be indicated to assist with the diagnosis of paroxysmal arousals or other sleep disruptions that are thought to be seizure related when the initial clinical evaluation and results of a standard EEG are inconclusive.

Accepted guidelines indicate that nocturnal pulse oximetry alone is not appropriately used as a case finding or screening method to rule out OSA. Pulse oximetry, when used alone, has not been shown to have an adequate negative predictive value to rule out OSA.

## DEFINITIONS

1. **Authorization:** A decision by Brand New Day/Central Health Medicare Plan that a health care service, treatment plan, prescription drug or durable medical equipment is medically necessary or meets other

## Medical Policy

member contract terms. Sometimes called prior authorization, prior approval or precertification. Brand New Day/Central Health Medicare Plan requires preauthorization for certain services before a member receives them, except in an emergency. Authorization is not a promise that Brand New Day/Central Health Medicare Plan will cover the cost.

2. **Chronic obstructive pulmonary disease (COPD):** Characterized by airflow limitation that is usually progressive making it hard to breathe. The condition is associated with an enhanced chronic inflammatory response in the airways and the lung to irritants such as noxious particles or gases.
3. **Epworth sleepiness scale (ESS):** A short self-administered survey that asks patients how likely they are to fall asleep vs just feeling tired in 8 different situations.
4. **Excessive daytime sleepiness (EDS):** Also known as somnolence or hypersomnia: A subjective report of difficulty in maintaining the alert awake state during the day, usually accompanied by easily falling asleep when the person is sedentary. Excessive sleepiness may be due to an excessively deep or prolonged major sleep episode. It can be quantitatively measured by use of subjectively defined rating scales of sleepiness or physiologically measure by electrophysiological tests such as the multiple sleep latency tests (MSLT). Excessive sleepiness most commonly occurs during the daytime, but it may be present at night in a person, such as a shift worker who has the major sleep episode during the daytime.
5. **Insomnia:** Characterized by a complaint of difficulty initiating sleep, maintaining sleep, and/or nonrestorative sleep that causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.
6. **Maintenance of Wakefulness Test:** a facility-based study that is used to measure the ability to stay awake and alert. The patient is given four nap trials. Each trial consists of a 40 minute session in which the patient attempts to fall asleep.
7. **Multiple Sleep Latency Testing:** is a facility-based study that is used to measure levels of daytime sleepiness. The MSLT involves multiple trials during a day to objectively assess sleep tendency by measuring the number of minutes it takes the patient to fall asleep. During a routine MSLT, the patient is given five nap trials that are separated by two-hour intervals. Each trial consists of a 20 minute session in which the patient attempts to fall asleep.
8. **Obesity hypoventilation syndrome (OHS):** Also known as Pickwickian syndrome, this is a breathing disorder that prevents good air/gas exchange in the lungs. Some obese people have OHS due to excess tissue in the neck area that may collapse the airway or excess abdominal fat that prevents the lungs from fully expanding with each breath. The poor breathing seen in OHS Page results in too much carbon dioxide (hypoventilation) and too little oxygen in the blood (hypoxemia). Lab results from a serum bicarbonate level

### Medical Policy

or arterial blood gas can help with the diagnosis of OHS.

9. **Polysomnogram (PSG):** Also known as a “sleep study” is a diagnostic test for obstructive sleep apnea. The patient is connected to a variety of monitoring devices that record at least 4 physiologic variables while sleeping (e.g., heart rate, sleep/wake activity, blood oxygen saturation, respiratory effort monitoring).
10. **Sleep apnea:** A condition where a person’s breathing frequently pauses or stops while sleeping, usually for 10 seconds or more at one time.
11. **Sleep disorder:** Interference in sleep continuity and central nervous system sleep/wake cycle that may be caused by respiratory and/or non-respiratory conditions.
12. **Titration testing (of a PAP device):** A test done to find the right airflow pressure settings of the equipment to keep the patient’s airway open while allowing the patient to sleep. The airflow pressure of the PAP device is “titrated” (increased/decreased) to discover a single fixed pressure that works for the individual. In the home setting a device is used that can perform this titration task automatically.

### CODING

The codes listed below are for reference purposes. This list does not imply whether the code is covered or not covered. The benefit document should be referenced for coverage determination. This list of applicable codes may not be all-inclusive.

CPT CODE	DESCRIPTION
95700	Electroencephalogram (EEG) continuous recording, with video when performed, setup, patient education, and takedown when performed, administered in person by EEG technologist, minimum of 8 channel
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)
95803	Actigraphy testing, recording, analysis, interpretation, and report (minimum of 72 hours to 14 consecutive days of recording)
95805	Multiple sleep latency or maintenance of wakefulness testing, recording, analysis and interpretation of physiological measurements of sleep during multiple trials to assess sleepiness
95806	Sleep study, unattended, simultaneous recording of, heart rate, oxygen saturation, respiratory airflow, and respiratory effort (eg, thoracoabdominal movement)
95807	Sleep study, simultaneous recording of ventilation, respiratory effort, ECG or heart rate, and oxygen saturation, attended by a technologist
95808	Polysomnography; any age, sleep staging with 1-3 additional parameters of sleep, attended by a technologist
95810	Polysomnography; age 6 years or older, sleep staging with 4 or more additional parameters of sleep, attended by a technologist
95811	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
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

## Medical Policy

CPT CODE	DESCRIPTION
95700	Electroencephalogram (EEG) continuous recording, with video when performed, setup, patient education, and takedown when performed, administered in person by EEG technologist, minimum of 8 channel
G0400	Home sleep test (hst) with type iv portable monitor, unattended; minimum of 3 channels
G8846	Moderate or severe obstructive sleep apnea (apnea hypopnea index (AHI) or respiratory disturbance index (RDI) of 15 or greater)

HCPCS CODE	DESCRIPTION
N/A	

**Note:** A home sleep study is performed over multiple nights with a single interpretation is considered a single sleep study for purposes of reimbursement.

### EVIDENCE BASED REFERENCES

- Agency for Healthcare Research and Quality (AHRQ), Technology Assessment Program. Effectiveness of portable monitoring devices for diagnosing obstructive sleep apnea: Update of a systematic review. Technology Assessment. Final Report. Prepared by RTI International for AHRQ. Rockville, MD: AHRQ: September 1, 2004. <https://www.cms.hhs.gov/mcd/viewtrackingsheet.asp?id=110>. Accessed September 29, 2017.
- American Academy of Sleep Medicine, Standards of Practice Committee. Practice parameters for the use of auto-titrating continuous positive airway pressure devices for titrating pressures and treating adult patients with obstructive sleep apnea. *Sleep*. 2002;25(2):143-147.
- American Sleep Disorders Association, Standards of Practice Committee, Polysomnography Task Force. Practice parameters for the indications for polysomnography and related procedures. *Sleep*. 1997;20(6):406-422.
- Ayas NT, Patel SR, Malhotra A, et al. Auto-titrating versus standard continuous positive airway pressure for the treatment of obstructive sleep apnea: Results of a meta-analysis. *Sleep*. 2004;27(2):249-253.
- Berry RB, Parish JM, Hartse KM. The use of auto-titrating continuous positive airway pressure for treatment of adult obstructive sleep apnea. *Sleep*. 2002;25(2):148-173.
- Brietzke SE, Gallagher D. The effectiveness of tonsillectomy and adenoidectomy in the treatment of pediatric obstructive sleep apnea/hypopnea syndrome: A meta-analysis. *Otolaryngology Head Neck Surg*. 2006;134(6):979-984.
- Center for Medicare and Medicaid Services (CMS). Decision memo for continuous positive airway pressure (CPAP) therapy for obstructive sleep apnea (OSA) (CAG-00093R). Medicare Coverage Database. Baltimore, MD: CMS; April 4, 2005.
- Centers for Medicare & Medicaid Services (CMS). Decision memo for sleep testing for obstructive sleep apnea (OSA) (CAG-00405N). Medicare Coverage Database. Baltimore, MD: CMS; March 3, 2009.
- Chesson AL, Jr, Berry RB, Pack A. Practice parameters for the use of portable monitoring devices in the investigation of suspected obstructive sleep apnea in adults. American Academy of Sleep Medicine. *Sleep*. 2003;26(7):907-913.
- Chihorek AM, Abou-Khalil B, Malow BA. Obstructive sleep apnea is associated with seizure occurrence in older adults with epilepsy. *Neurology*. 2007;69(19):1823-1827.
- Collop NA, Anderson WM, Boehlecke B, et al.; Portable Monitoring Task Force of the American Academy of Sleep Medicine. Clinical guidelines for the use of unattended portable monitors in the diagnosis of obstructive sleep apnea in adult patients. Portable Monitoring Task Force of the American Academy of Sleep Medicine. *J Clin Sleep Med* 2007;3(7):737-747.
- D'Andrea LA. Diagnostic studies in the assessment of pediatric sleep-disordered breathing: Techniques and indications. *Pediatr Clin North Am*. 2004;51(1):169-186.
- El Shayeb M, Topfer LA, Stafinski T, et al. Diagnostic accuracy of level 3 portable sleep tests versus level 1 polysomnography for sleep-disordered breathing: A systematic review and meta-analysis. *CMAJ*. 2014;186(1):E25-E51.
- Epstein LJ, Dorlac GR. Cost-effectiveness analysis of nocturnal oximetry as a method of screening for sleep apnea-hypopnea syndrome. *Chest*. 1998;113(1):97-103.
- Fletcher EC, Stich J, Yang KL. Unattended home diagnosis and treatment of obstructive sleep apnea without polysomnography. *Arch Fam Med*. 2000;9(2):168-174.

## Medical Policy

- Ghegan MD, Angelos PC, Stonebraker AC, et al. Laboratory versus portable sleep studies: A meta-analysis. *Laryngoscope*. 2006;116(6):859-864.
- Guilleminault C, Stoohs R, Clerk A, et al. A cause of daytime sleepiness. The upper airway resistance syndrome. *Chest*. 1993;104(3):781-787.
- Hailey D, Jacobs P, Mayers I, Mensinkai S. Auto-titrating nasal continuous positive airway pressure systems in the management of obstructive sleep apnea. *Technology Report 39*. Ottawa, ON: Canadian Coordinating Office for Health Technology Assessment (CCOHTA); September 2003.
- Institute for Clinical Systems Improvement (ICSI). Diagnosis and treatment of obstructive sleep apnea. *Health Care Guideline*. 4th ed. Bloomington, MN: ICSI; March 2006. Available at: <http://www.icsi.org/knowledge/detail.asp?catID=29&itemID=891>. Accessed September 29, 2017.
- Lacassagne L, Didier A, Murriss-Espin M, et al. Role of nocturnal oximetry in screening for sleep apnea syndrome in pulmonary medicine. Study of 329 patients. *Rev Mal Respir*. 1997;14(3):201-207.
- Levy P, Pepin JL, Deschaux-Blanc C, et al. Accuracy of oximetry for detection of respiratory disturbances in sleep apnea syndrome. *Chest*. 1996;109(2):395-399.
- Littner M, Hirshkowitz M, Davila D., et al.; Standard of Practice Committee of the American Academy of Sleep Medicine (AASM). Practice parameters for the use of auto-titrating continuous positive airway pressure devices for titrating pressures and treating adult patients with obstructive sleep apnea syndrome. *Sleep*. 2002;25(2):143-147.
- Littner MR et al Practice Parameters for Clinical Use of the Multiple Sleep Latency Test and the Maintenance of Wakefulness Test An American Academy of Sleep Medicine Report SLEEP, Vol. 28, No. 1, 2005
- Morgenthaler TI, Aurora RN, Brown T, et al.; Standards of Practice Committee of the American Academy of Sleep Medicine (AASM). Practice parameters for the use of autotitrating continuous positive airway pressure devices for titrating pressures and treating adult patients with obstructive sleep apnea syndrome: An update for 2007. *Sleep*. 2008;31(1):141-147.
- Morgenthaler TI, MD et al; Practice Parameters for the Treatment of Narcolepsy and other Hypersomnias of Central Origin American Academy of Sleep Medicine Report SLEEP, Vol. 30, No. 12, 2007
- NHIC, Corp. Respiratory assist devices. Local Coverage Determination (LCD) No. L11504. Durable Medical Equipment Medicare Administrative Carrier (DME MAC) Jurisdiction A. Hingham, MA: NHIC; revised March 13, 2008.
- Nixon GM, Brouillette RT. Diagnostic techniques for obstructive sleep apnoea: Is polysomnography necessary? *Paediatr Respir Rev*. 2002;3(1):18-24.
- Olson LG, Ambrogetti A, Gyulay SG. Prediction of sleep-disordered breathing by unattended overnight oximetry. *J Sleep Res*. 1999;8(1):51-55.
- Ontario Ministry of Health and Long-Term Care, Medical Advisory Secretariat (MAS). Polysomnography in adults with obstructive sleep apnea. *Health Technology Policy Assessment*. Toronto, ON: MAS; June 2006.
- Ozmen OA, Tüzemen G, Kasapoğlu F, et al. The reliability of SleepStrip as a screening test in obstructive sleep apnea syndrome. *Kulak Burun Bogaz Ihtis Derg*. 2011;21(1):15-19.
- Pang KP, Dillard TA, Blanchard AR, et al. A comparison of polysomnography and the SleepStrip in the diagnosis of OSA. *Otolaryngol Head Neck Surg*. 2006;135(2):265-268.
- Ramachandran SK, Josephs LA. A meta-analysis of clinical screening tests for obstructive sleep apnea. *Anesthesiology*. 2009;110(4):928-939.
- Ryan PJ, Hilton MF, Boldy DA, et al. Validation of British Thoracic Society guidelines for the diagnosis of the sleep apnoea/hypopnoea syndrome: Can polysomnography be avoided *Thorax*. 1995;50(9):972-975.
- Series F, Marc I, Cormier Y, et al. Utility of nocturnal home oximetry for case finding in patients with suspected sleep apnea hypopnea syndrome. *Ann Intern Med*. 1993; 119:449-453.
- Series F. Accuracy of an unattended home CPAP titration in the treatment of obstructive sleep apnea. *Am J Respir Crit Care Med*. 2000;162(1):94-97.
- Strohl KP. Overview of obstructive sleep apnea in adults. UpToDate Inc., Waltham, MA. Last reviewed November 2015.
- Varvarigou V, Dahabreh IJ, Malhotra A, Kales SN. A review of genetic association studies of obstructive sleep apnea: Field synopsis and meta-analysis. *Sleep*. 2011;34(11):1461-1468.

## REGULATORY CITATIONS/REFERENCES

- U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services (CMS). Continuous positive airway pressure (CPAP). *Medicare Coverage Issues Manual §60-17*. Baltimore, MD: CMS; 2002.
- U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services (CMS). Decision memo for continuous positive airway pressure (CPAP) therapy for obstructive sleep apnea (OSA) (CAG-0093R2).

## Medical Policy

Medicare Coverage Database. Baltimore, MD: CMS; March 13, 2008.

### POLICY HISTORY

This policy has been approved by the approval body listed below or has received other necessary approval pursuant to Brand New Day/Central Health Medicare Plan's policies on clinical criteria and policy development.

Approval Body		Utilization Management Committee	
Version History	Approval Date	Effective Date	Action
V1	04-18-2018	04-18-2022	New Policy
V2	12-18-2018	12-18-2022	noted that policies apply to new 2019 Markets
V3	04-29-2019	04-29-2022	Annual Review, no changes noted
V4	02-01-2020	02-01-2020	Updated to include appropriate 2020 markets
V5	12-20-2020	12-20-2020	Small Group added as applicable product
V6	05-21-2021	05-21-2021	Annual Review
V7	06-16-2022	06-16-2022	Annual Review
V8	10-12-2022	10-12-2022	Codes confirmed, criteria confirmed and reorganized for clarity
V9	10-12-2022	03-1-2023	Adopted by MA UM Committee