Mass General Brigham

Diagnosis of Sleep Disordered Breathing in Adults and Children

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Clinical Guideline: Diagnosis of Sleep Disordered Breathing in Adults and Children

This is a guideline only. The guideline does not represent medical advice. Medical decisions are the responsibility of the patient and the attending physician. Benefits are determined by the health plan and employer group contract and eligibility of the subscriber at the time services were rendered.

For Medicare Advantage and Dual Eligible Special Needs Plan (DSNP) enrollees, the CMS (Centers for Medicare and Medicaid Services) coverage policies take precedence over Mass General Brigham's guidelines.

Sleep studies are performed to diagnose sleep disorders, and to determine the effectiveness of treatments prescribed for patients who have been previously diagnosed with sleep disorders. Evaluation of signs and symptoms of sleep-disordered breathing should be conducted as part of routine health evaluations with adequate follow up.

Signs and Symptoms of Sleep Disordered Breathing

Initial testing for the diagnosis of sleep disordered breathing is appropriate via laboratory polysomnography (PSG) or home sleep apnea testing (HSAT), if a patient presents with an increased risk of moderate to severe obstructive sleep apnea (OSA), indicated by the presence of:

- witnessed apnea during sleep, **or**
- at least one sign/symptom from category A and one sign/symptom from categoryB

A. Evidence of Excessive Daytime Sleepiness
- Disturbed or restless sleep
- Nonrestorative sleep
- Frequent unexplained arousals from sleep
- Fragmented sleep
- Epworth Sleepiness Scale (ESS) greater than or equal to 10
- Fatigue

B. Evidence suggestive of Sleep Disordered Breathing
- Habitual loud snoring
- Choking or gasping during sleep
- BMI greater than or equal to 30
- Neck circumference greater than 17 in. (men) or greater than 16 in. (women)
- Sleep related bruxism
- Cognitive deficits such as inattention or memory
- Unexplained nocturnal reflux
- Erectile dysfunction
- Apneas or hypoxemia during procedures requiring anesthesia

- Morning headaches

Determining the Appropriate Site of Service for Sleep Testing

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Sleep testing may be performed in an attended setting in a laboratory facility **OR** outside of the sleep laboratory using a portable monitoring device. Selection of the appropriate site of service for sleep testing requires evaluation of **ALL** the following:

Evaluation of the patient's clinical signs and symptoms related to the sleep disorder, and all of the following:

- Review of the patient's medical history and physical examination
- Evaluation of any comorbid medical conditions
- Evaluation of any secondary concomitant or associated sleep disorders **AND**
- Assessment of the patient's cognitive and physical ability to perform the sleep test outside safely and effectively of the sleep laboratory.

DIAGNOSTIC TESTING

Diagnostic testing for sleep disorders must be ordered by a licensed physician or advanced practice provider and reviewed and interpreted by a board-certified sleep physician.

Home Sleep Apnea Test (HSAT)

Home Sleep Apnea Test (HSAT) **meets the definition of medical necessity** when all the following conditions are met (A, B, C, & D):

A. Signs/symptoms of sleep-disordered breathing as noted above, in the Signs and Symptoms of Sleep Disordered Breathing section, are present (witnessed apnea OR at least one sign/symptom from category A and one sign/symptom from Category B)

B. Absence of other comorbid medical conditions or concomitant sleep disorders such as: Comorbid medical conditions

- Moderate to severe COPD or interstitial lung disease as diagnosed on pulmonary function studies (PFTs), or chronic use of oxygen for the treatment of pulmonary disease
- Severe, persistent asthma as defined by use of:
  - Daily oral corticosteroids, or
  - Immunomodulator/biologics
- Moderate to severe heart failure with New York Heart Association (NYHA)Classification III or IV or reduced EF less than or equal to 40%
- Moderate to severe pulmonary hypertension, with pulmonary artery pressure greater than 40 mm Hg
- Neuromuscular/neurodegenerative disorder causing restrictive disease or hypoventilation such as: severe kyphoscoliosis, myasthenia gravis, amyotrophic lateral sclerosis (ALS), post- polio syndrome, polymyositis, and Guillian-Barre syndrome
- Uncontrolled, or refractory cardiac arrhythmia(s) supported by clinical documentation, such as:
  - Recurrent palpitations, nocturnal
  - Syncope, dizziness, or light headedness

  - Short of breath, chest pain associated with arrhythmia
- Chronic opioid medication that would increase risk of central sleep apnea,(chronic use defined as use of opioids on most days per week for greater than 3 months)
- Obesity hypoventilation syndrome, defined as pCO2 greater than 45 mm Hg and pO2 less than 60 mm Hg on arterial blood gas

Secondary concomitant or associated sleep disorders such as:

- Previously diagnosed periodic limb movement disorder (PLMD), defined as greater than or equal to 15 periodic limb movements per hour resulting in arousal when the arousals are not associated with respiratory events
- Complex parasomnias, with potentially injurious, disruptive or violent behavior, such as REM Behavior Disorder or sleepwalking
- Narcolepsy, or narcolepsy-related symptoms (i.e., idiopathic hypersomnia), after obstructive sleep apnea has been evaluated and effectively treated as documented by the patient's objective adherence to therapy (PAP download)
- Previously diagnosed central sleep apnea or treatment-emergent sleep apnea, defined as central apneas/ hypopneas greater than 50% of the total apneas/hypopneas and central apneas/hypopneas greater than or equal to 5 times per hour
- Central nervous system disorders which may increase risk of central sleep apnea (e.g., Arnold Chiari malformation)
- Nocturnal seizures which are acute and/or not effectively controlled and occurring concomitantly with other sleep disorders

C. Cognitive and physical ability to perform the sleep test outside safely and effectively of the sleep laboratory

D. Age 18 years or older

Note: A HSAT may be administered over multiple nights, at the discretion of the ordering qualified healthcare professional. The results should be aggregated into one single report. This is considered one diagnostic sleep test and multiple HSAT tests should be reported as a single HSAT procedure.

HSAT **does not meet the definition of medical necessity** to monitor PAP efficacy in a patient already diagnosed with OSA and using PAP therapy. The PAP download should provide sufficient efficacy and usage data.

Portable monitoring devices used in HSAT are categorized based on the number of channels measured. Portable monitoring devices that measure fewer than 3 channels provide only limited information and therefore **does not meet the definition of medical necessity.**

Attended Sleep Study - Polysomnography (PSG)

An attended sleep study (95808, 95810) **meets the definition of medical necessity** when a patient presents with (A and B, A and C, or D):

A. Signs/symptoms of sleep disordered breathing as noted in the Signs and Symptoms of Sleep Disordered Breathing section above (witnessed apnea OR at least one sign/symptom from category A and one sign/symptom from Category B).

B. Comorbid medical conditions which may necessitate attended monitoring such as:
- Moderate to severe COPD or interstitial lung disease as diagnosed on pulmonary function studies (PFTs) or chronic use oxygen for the treatment of pulmonary disease
- Severe, persistent asthma as define by use of:
  - Daily oral corticosteroids, or
  - Immunomodulator/biologics
- Moderate to severe heart failure with New York Heart Association (NYHA) Classification of III or IV or reduced EF less than or equal to 40%
- Moderate to severe pulmonary hypertension, with pulmonary artery pressure greater than 40 mmHg
- Neuromuscular /neurodegenerative disorder causing restrictive disease or hypoventilation, such as: severe kyphoscoliosis, myasthenia gravis, amyotrophic lateral sclerosis (ALS), post-polio syndrome, polymyositis, and Guillian-Barre syndrome
- Uncontrolled or refractory cardiac arrhythmia(s)supported by clinical documentation such as:
  - Recurrent palpitations, nocturnal
  - Syncope, dizziness, or light headedness
  - Short of breath, chest pain associated with arrhythmia
- Chronic opioid medication that would increase risk of central sleep apnea, (chronic use defined as use of opioids on most days per week for greater than 3 months)
- Obesity hypoventilation syndrome, defined as pCO2 greater than45 mmHg and pO2 less than 60 mm Hg on arterial blood gas

C. Recent Home Sleep Apnea Test (HSAT) (less than 1 year old) confirmed to be non-diagnostic:
- A previous home sleep study was technically inadequate and there was a valid attempt to retest the patient via HSAT (**Of note:** there is no minimum required HSAT recording time required for HSAT to be considered diagnostic), **OR**
- A previous home sleep study failed to establish the diagnosis of OSA in a patient with a high pretest probability of OSA

D. Presence of a secondary concomitant or associated sleep disorder other than suspected OSA which may necessitate attended monitoring such as:
- Previously diagnosed periodic limb movement disorder (PLMD), defined as greater than or equal to 15 periodic limb movements per hour resulting in arousal, when the arousals are not associated with respiratory events
- Complex parasomnias, with potentially injurious, disruptive or violent behavior, such as REM Behavior Disorder or sleepwalking
- Narcolepsy, or narcolepsy-related symptoms (i.e. idiopathic hypersomnia), after obstructive sleep apnea has been evaluated and effectively treated, as documented by the patient's objective adherence to therapy (PAP download)
- Previously diagnosed central sleep apnea or treatment emergent sleep apnea, defined as central apneas/ hypopnea as greater than 50% of the total apneas/hypopneas and central apneas/hypopneas greater than or equal to 5 times per hour.
- Central nervous system disorders which may increase risk of central sleep apnea (e.g. Arnold Chiari malformation)
- Nocturnal seizures which are acute and/or not effectively controlled and occurring concomitantly with other sleep disorders

Overnight oximetry testing **does not meet the definition of medical necessity for OSA screening or as a diagnostic test for patients suspected of obstructive sleep apnea**

Attended polysomnography (PSG) or home sleep apnea testing (HSAT) is not medically necessary (in children or adults) for the following indications:

- Chronic lung disease in the absence of symptoms of a sleep disorder
- Circadian rhythm disorders
- Transient or chronic insomnia
- Restless leg syndrome (RLS)
- Seizures in the absence of symptoms of a sleep disorder
- Depression or other psychiatric disorders
- Snoring without evidence suggestive of excessive daytime sleepiness.
- Screening asymptomatic patients with no sleep-related complaints
- Patients required to be tested by an employer or other government or regulatory agency and who have no symptoms of excessive daytime somnolence or other signs/symptoms of OSA.

Full Night, Attended PAP Titration Study

Attended Titration for patients (age 6 and older) (CPT code 95811) is appropriate after an initial diagnostic sleep study (PSG or HSAT) has confirmed the presence of significant obstructive sleep apnea and the patient is not appropriate for unattended titration using auto-titrating PAP (APAP or auto bi-level PAP) device.

A full night attended titration study (95811) **meets the definition of medical necessity** when the following conditions are met (A and B, A and C, or A and D). **Unattended titration** using **APAP** (E0601) **meets the definition of medical necessity** only when condition A is met and conditions B, C, and D is not.

A. Patient has been previously diagnosed with significant obstructive sleep apnea:
   1. Results of a PSG or HSAT indicate AHI or RDI or REI measured on HSAT greater than or equal to 15 events per hour, **OR**
   2. AHI or RDI or REI measured on HSAT greater than or greater than or equal to 5 events per hour but less than 15 with clinical evidence of one of the following conditions:
      - Excessive daytime sleepiness
      - Impaired cognition
      - Mood disorders (e.g. depression, anxiety)
      - Insomnia
      - Hypertension
      - Ischemic heart disease
      - History of stroke

B. Results of the initial diagnostic PSG or HSAT indicate significant oxygen desaturations during the study:
   - O2 saturation <90% for greater than 15% of recording time during a diagnostic home sleep apnea test or diagnostic facility-based PSG, **OR**
   - O2 saturation < 80% for greater than 1% of recording time during a diagnostic home sleep apnea test or diagnostic facility-based PSG.

C. Presence of a comorbid condition or concomitant secondary sleep disorder that may necessitate an attended titration:

   Comorbid medical conditions such as:
   - Moderate to severe COPD or interstitial lung disease as diagnosed on pulmonary function

studies (PFTs), or chronic use of oxygen for the treatment of pulmonary disease.

- Severe, persistent asthma as defined by use of:
  - Daily oral corticosteroids, or
  - Immunomodulator/biologics
- Moderate to severe heart failure with New York Heart Association (NYHA) Classification III or IV or reduced EF less than or equal to 40%
- Moderate to severe pulmonary hypertension, with pulmonary artery pressure greater than 40 mm Hg
- Neuromuscular/neurodegenerative disorder causing restrictive disease or hypoventilation such as: severe kyphoscoliosis, myasthenia gravis, amyotrophic lateral sclerosis (ALS), post-polio syndrome, polymyositis, and Guillian-Barré syndrome
- Uncontrolled, or refractory cardiac arrhythmia(s) supported by clinical documentation, such as:
  - Recurrent palpitations, nocturnal
  - Syncope, dizziness, or light headedness
  - Short of breath, chest pain associated with arrhythmia
- Chronic opioid medication use that would increase risk of central sleep apnea, (chronic use defined as use of opioids on most days per week for greater than 3 months)
- Obesity hypoventilation syndrome, defined as pCO2 greater than 45 mm Hg and pO2 less than 60 mmHg on arterial blood gas

Secondary concomitant or associated sleep disorders such as:

- Previously diagnosed periodic limb movement disorder (PLMD), defined as greater than or equal to 15 periodic limb movements per hour resulting in arousal when the arousals are not associated with respiratory events
- Complex parasomnias, with potentially injurious, disruptive or violent behavior, such as REM Behavior Disorder or sleepwalking
- Narcolepsy, or narcolepsy-related symptoms (i.e. idiopathic hypersomnia), after obstructive sleep apnea has been evaluated and effectively treated as documented by the patient's objective adherence to therapy (PAP download)
- Central sleep apnea or treatment emergent sleep apnea, defined as central apneas/greater than 50% of the total apneas/hypopneas and central apneas/hypopneas greater than or equal to 5 times per hour
- Central nervous system disorders which may increase risk of central sleep apnea (e.g., Arnold Chiari malformation)
- Nocturnal seizures which are acute and/or not effectively controlled and occurring concomitantly with other sleep disorders

D. The patient has failed recent APAP trial at home. APAP failure is defined as:

- The patient has a residual AHI on APAP download of greater than or equal to 5 with adequate objective adherence to therapy (use ≥4 hours per night on 70% of nights during a consecutive 30-day period reported on APAP download), **OR**
- The patient has residual symptoms of excessive daytime sleepiness with adequate objective adherence to therapy (use ≥4 hours per night on 70% of nights during a consecutive 30-day period reported on APAP download), **OR**
- The patient was unable to tolerate positive airway pressure therapy following a 1-month minimum trial of APAP as evidenced by the objective data (as noted in the bullet above) **AND** the patient did not have a previous attended titration, **OR**
- The patient is not a candidate for auto bi-level therapy or auto bi-level therapy has been

tried and has not been effective

Split Night Sleep Study

A facility-based split night sleep study (95811) **meets the definition of medical necessity** when a patient presents with (A and B or A and C or A and D):

A. Signs/symptoms of sleep disordered breathing as noted above

B. Presence of a comorbid condition:
- Moderate to severe COPD or interstitial lung disease as diagnosed on pulmonary function studies (PFTs), or chronic use of oxygen for the treatment of pulmonary disease
- Severe, persistent asthma as defined by use of:
  - Daily oral corticosteroids
  - Immunomodulator/biologics
- Moderate to severe heart failure with New York Heart Association (NYHA) Classification III or IV or reduced EF less than or equal to 40%
- Moderate to severe pulmonary hypertension, with pulmonary artery pressure greater 40 mm Hg
- Neuromuscular/neurodegenerative disorder causing restrictive disease or hypoventilation such as: severe kyphoscoliosis, myasthenia gravis, amyotrophic lateral sclerosis (ALS), post- polio syndrome, polymyositis, and Guillian-Barré syndrome
- Uncontrolled, or refractory cardiac arrhythmia(s) supported by clinical documentation, such as:
  - Recurrent palpitations, nocturnal
  - Syncope, dizziness, or light headedness
  - Short of breath, chest pain associated with arrhythmia
- Chronic opioid medication use that would increase risk of central sleep apnea, (chronic use defined as use of opioids on most days per week for greater than 3 months).
- Obesity hypoventilation syndrome, defined as pCO2 greater than 45 mm Hg and pO2 less than 60 mmHg on arterial blood gas

C. Recent HSAT (less than 1 year old) confirmed to be non-diagnostic:
- A previous home sleep study was technically inadequate and there was a valid attempt to retest the patient via HSAT (**Of note:** there is no minimum required HSAT recording time for HSAT to be considered diagnostic), **OR**
- A previous home sleep study failed to establish the diagnosis of OSA in a patient with a high pretest probability of OSA.

D. Presence of a secondary concomitant or associated sleep disorder other than suspected OSA such as:
- Previously diagnosed periodic limb movement disorder (PLMD), defined as greater than or equal to 15 periodic limb movements per hour resulting in arousal when the arousals are not associated with respiratory events
- Complex parasomnias, with potentially injurious, disruptive, or violent behavior, such as REM Behavior Disorder or sleepwalking
- Narcolepsy or narcolepsy-related symptoms (i.e., idiopathic hypersomnia) after obstructive sleep apnea has been evaluated and effectively treated as documented by the patient's objective adherence to therapy (PAP download).
- Central sleep apnea or treatment emergent sleep apnea, defined as central

apneas/hypopneas greater than 50% of the total apneas/hypopneas and central apneas/hypopneas greater than or equal to 5 times per hour
- Central nervous system disorders which may increase risk of central sleep apnea (e.g., Arnold Chiari malformation)
- Nocturnal seizures which are acute and/or not effectively controlled and occurring concomitantly with other sleep disorders

Repeat Diagnostic Testing

HSAT/PSG/Split Night Study

A repeat PSG, HSAT, or Split Night Study to confirm the diagnosis of sleep disorders **meets the definition of medical necessity** when the patient meets previously stated criteria for a PSG, HSAT, or Split Night as outlined above and at least **ONE** of the following conditions is met:

1. Recent HSAT (less than 1 year old) confirmed to be non-diagnostic:
   - A previous home sleep study was technically inadequate and there was a valid attempt to retest the patient via HSAT (**Of note:** there is no minimum required HSAT recording time for HSAT to be considered diagnostic), **OR**
   - A previous home sleep study failed to establish the diagnosis of OSA in a patient with a high pretest probability of OSA~~.~~

2. Patient has had any of the following:
   - a significant change in weight that has impacted signs/symptoms of obstructive sleep apnea, specifically weight gain or weight loss of greater than or equal to10%of total body weight, when re-evaluation is warranted to modify therapy.
   - persistent or recurring signs or symptoms of OSA and adherent with PAP therapy,
   - develop or have a change in cardiovascular status, such as uncontrolled hypertension, hospitalization for heart failure, stroke, cardiac arrhythmia

3. Reassessment of clinical indicators of obstructive sleep apnea to determine the effectiveness of treatment after surgical intervention:
   - Tonsillectomy~~,~~
   - Adenoidectomy~~,~~
   - Uvulopalatoplasty (UPPP~~)~~,
   - Maxillomandibular Advancement Surgery (MMA)
   - Other upper airway surgery/implantation for treatment of obstructive sleep apnea

4. Implementation and evaluation of a fabricated oral mandibular advancement appliance (OAT) by a qualified healthcare professional:
   a. Treatment efficacy of an oral mandibular appliance may be assessed using HSAT, **OR**
   b. An oral mandibular appliance may be adjusted manually during polysomnography to eliminate sleep disordered breathing in the sleep laboratory by a sleep technologist, and as prescribed by the qualified healthcare professional.
      - The qualified healthcare professional may request in-facility

polysomnography (95810) for manual adjustment of the appliance, if meets current criteria for in lab evaluation

- Alternately, the oral appliance may be adjusted in the office empirically and then HSAT may be performed to assess therapeutic efficacy.

Note:

PAP titration study (CPT code 95811) or split night sleep testing (95811) is not correct coding for adjustment of an oral mandibular appliance.

If previous diagnostic test or baseline study is not available, physician attestation for the need of the requested test will be accepted and sleep study type will be determined by medical necessity.

If previous diagnostic test **or baseline study** is not available, physician attestation supporting a diagnosis of OSA will be accepted to support the request for replacement pap therapy or supplies, where medical necessity has already been established.

Sleep studies performed outside the United States are accepted if the sleep report contains sufficient data to determine medical necessity for the diagnosis.

Repeat Attended Titration Study

A repeat in-lab PAP titration(95811) **meets the definition of medical necessit**y for a patient who is known to have OSA when (1 & 2 **OR** 3) are met:

1. A diagnostic sleep test has been submitted to confirm the diagnosis of OSA **AND,** any of the following:
   - The patient is documented to have a recurrence of OSA related symptoms, such as snoring, excessive daytime somnolence, fatigue, disrupted sleep, etc. or persistent elevation in AHI documented from PAP device download while adhering to PAP therapy (use ≥4 hours per night on 70% of nights during a consecutive thirty (30) day period),
   - The member has a 10% change in body weight which has resulted in a recurrence of OSA-related symptoms,
   - The patient demonstrates intolerance to PAP therapy and the test is to re-titrate and evaluate for the proper therapeutic pressure and/or modality
   - The patient has upper airway surgery, which has resulted in a recurrence of OSA-related symptoms

2. The patient is not a candidate for APAP based on the presence of one of the following: A, B, **OR** C:

A. Significant oxygen desaturation found during diagnostic testing:
   - O2 saturation < 90% for greater than 15% of recording time during a diagnostic home sleep apnea test or diagnostic facility-based PSG, **OR**
   - O2 saturation < 80% for greater than 1% of recording time during a diagnostic home sleep apnea test or diagnostic facility-based PSG.

B. Comorbid medical conditions such as:
   - Moderate to severe COPD or interstitial lung disease as diagnosed on pulmonary function studies (PFTs) or chronic use of oxygen for the treatment of pulmonary disease
   - Severe, persistent asthma as defined by use of:
     - Daily oral corticosteroids
     - Immunomodulator/biologics
   - Moderate to severe heart failure with and New York Heart Association (NYHA) Classification

III or IV or reduced EF less than or equal to 40%

- Moderate to severe pulmonary hypertension, with pulmonary artery pressure greater than 40 mm Hg
- Neuromuscular/neurodegenerative disorder causing restrictive disease or hypoventilation such as: severe kyphoscoliosis, myasthenia gravis, amyotrophic lateral sclerosis (ALS), post-polio syndrome, polymyositis, and Guillian-Barre syndrome
- Uncontrolled, or refractory cardiac arrhythmia(s) supported by clinical documentation, such as:
    - Recurrent palpitations, nocturnal
    - Syncope, dizziness, or light headedness
    - Short of breath, chest pain associated with arrhythmia
- Chronic opioid medication use that would increase risk of central sleep apnea, (chronic use defined as use of opioids on most days per week for greater than 3 months).
- Obesity hypoventilation syndrome, defined as pCO_2 greater than 45 mmHg and pO_2 less than 60 mm Hg on arterial blood gas

C. Secondary concomitant or associated sleep disorders such as:

- Previously diagnosed periodic limb movement disorder (PLMD), defined as greater than or equal to 15 periodic limb movements per hour resulting in arousal when the arousals are not associated with respiratory events
- Complex parasomnias, with potentially injurious, disruptive or violent behavior, such as REM Behavior Disorder or sleepwalking
- Narcolepsy, or narcolepsy-related symptoms (i.e. idiopathic hypersomnia), after obstructive sleep apnea has been evaluated and effectively treated as documented by the patient's objective adherence to therapy (PAP download)
- Central sleep apnea or treatment emergent sleep apnea, defined as central apneas/hypopneas greater than 50% of the total apneas/hypopneas and central apneas/hypopneas greater than or equal to 5 times per hour
- Central nervous system disorders which may increase risk of central sleep apnea (e.g., Arnold Chiari malformation)
- Nocturnal seizures that are acute and/or not effectively controlled and occurring concomitantly with other sleep disorders.

3. The previous titration study was insufficient to determine the correct pressure to resolve the apnea.

NOTE: If previous diagnostic test is not available for repeat titration, physician attestation confirming the member's diagnosis of OSA will be accepted.

Multiple Sleep Latency Test (MSLT) Attended Titration

A Multiple Sleep Latency Test (MSLT) (95805) **meets the definition of medical necessity** when previous evaluation has not demonstrated a diagnosis of OSA in the setting of persistent excessive daytime sleepiness AND Documentation of one of the following: :

- Epworth Sleepiness Scale greater than or equal to 10
- Recent history of routine unintentional naps or lapses into sleep during the day for more than 30 days.

- Recurrent symptoms suggestive of narcolepsy; examples not limited to:
  - Cataplexy
  - Sleep paralysis
  - Hypnogogic hallucinations

OR

- The patient is currently on positive airway pressure therapy for the treatment of OSA, is adherent to therapy, download demonstrates resolution of sleep apnea and has persistent daytime sleepiness.

Note: The MSLT should be performed when a patient is in a fully rested state and not experiencing sleepiness due to inadequate prior sleep. For this reason, the MSLT is performed during the patient's typical wake hours and **always follows a facility-based PSG** (95810) or an in-lab titration (95811**)** for persistent hypersomnia for patient's adherent to therapy and which the sleep efficacy of CPAP adequacy is objectively measured. The MSLT **should not be performed after a split night study (CPT code95811)**

Maintenance of Wakefulness Test MWT

Maintenance of Wakefulness testing (95805) **meets the definition of medical necessity** to evaluate a patient's response to treatment for a sleep disorder, such as obstructive sleep apnea, narcolepsy, or periodic limb movement disorder, especially when the patient's inability to say awake constitutes a personal or public safety issue.

Note: Only an MWT (not MSLT) may be performed without a preceding PSG (CPT code 95810) or PAP titration (CPT code 95811), at the discretion of the ordering healthcare professional. The MWT can be performed as a stand-alone test.

Actigraphy

Actigraphy (95803) **meets the definition of medical necessity** as a one-time covered service in lieu of paper or electronic sleep logs to evaluate sufficient sleep and to assess sleep-wake schedules prior to MSLT testing.

Note: It is recommended that Actigraphy be performed for at least 7 days to assure the validity of MSLT testing data.

Actigraphy alone **does not meet the definition of medical necessity** in evaluating a patient for the diagnosis of obstructive sleep apnea.

Diagnostic Testing for Commercial Driver's License (CDL) or other Government Licenses

Diagnostic testing (CPT codes 95808, 95810and 95811)for CDL (commercial driver's license) or other government license purposes **does not meet the definition of medical necessity** unless the patient meets criteria for in facility testing or home testing as noted in the guideline.

SLEEP TESTING in PEDIATRIC PATIENTS (Younger than 18 years old)

Sleep disordered breathing in pediatric patients younger than age 18 years is evaluated when there is the presence of one or more of the following:

- Snoring

- Labored, paradoxical, or obstructed breathing during the child's sleep
- Sleepiness, hyperactivity, behavioral problems,or learning problems.

Pediatric in-facility polysomnography (PSG) (95782, 95808, and 95810) **meets the definition of medical necessity** for **ANY** of the following indications:

- Obstructive sleep apnea is suspected based on clinical signs/symptoms
- Prior to adenotonsillectomy to treat obstructive sleep apnea or snoring
- Unexplained cor pulmonale
- Following adenotonsillectomy in a child with any one of the following:
  - mild preoperative obstructive sleep apnea with residual symptoms of obstructive sleep apnea or snoring
  - to assess for residual obstructive sleep apnea in child with preoperative evidence of
    - moderate to severe obstructive sleep apnea, or
    - obesity, or
    - craniofacial anomalies that obstruct the upper airway, or
    - neurologic disorder (e.g., Down syndrome, Prader-Willi syndrome, myelomeningocele)
  - under 3 years old,
  - cardiac complications of obstructive sleep apnea syndrome (e.g., right ventricular hypertrophy)
  - Failure to thrive
- Suspected congenital central alveolar hypoventilation syndrome or sleep related hypoventilation due to neuromuscular disorders or chest wall deformities
- Primary apnea of infancy
- Evidence of a sleep related breathing disorder in infant who has experienced a brief resolved unexplained event
- Assessment of response to treatment with an oral appliance
- Evaluation of child treated with mechanical ventilation for adjustment of ventilator settings.
- Evaluation prior to decannulation in child treated with tracheostomy
- Clinical suspicion of an accompanying sleep related breathing disorder in a child with chronic asthma, cystic fibrosis, pulmonary hypertension, bronchopulmonary dysplasia, or chest wall abnormality (e.g., kyphoscoliosis).
- Parasomnias --when there is a history of sleep-related injurious or potentially injurious disruptive behaviors.
- Follow-up for child with OSA diagnosis to determine if PAP requirement treatment and diagnosis have changed due to growth and development, if symptoms recur while on PAP

Pediatric Split Night Study, (95811)
The patient must meet criteria for Pediatric in-facility polysomnography

Pediatric in-facility PAP titration and re-titration (95783, 95811) **meets the definition of medical necessity** when the following are met (A&B, A&C **OR** A& D):

A. The pediatric patient is diagnosed with obstructive sleep apnea, defined as (1 or 2):
   1. AHI or RDI greater than or equal to 1 on polysomnography
   2. A pattern of obstructive hypoventilation, defined as at least 25% of total sleep time with hypercapnia ($PaCO_2$ greater than or equal to 50 mm Hg) in association with one or more of the following:
      - Snoring
      - Flattening of the inspiratory nasal pressure waveform
      - Paradoxical thoracoabdominal motion

B. Follow-up for child on chronic PAP support, to determine whether pressure requirements have changed due to growth and development, if symptomsrecur while on PAP

C . Adenotonsillectomy has been unsuccessful, contraindicated, not considered appropriate, or when definitive surgery is indicated but must await complete dental and facial development in a pediatric patient who is found to have obstructive sleep apnea diagnosis established by PSG.

D. The pediatric patient demonstrates intolerance to PAP therapy and the test is to re-titrate and evaluate for the proper therapeutic pressure and/or modality.

Note: PAP Titration may also be undertaken in a child with other sleep-related breathing disorders (not obstructive sleep apnea) when treatment with non-invasive positive pressure ventilation (NIPPV) is recommended.

The use of Home Sleep Testing devices in pediatric patients (younger than age 18 years) is not considered medically necessary. The evidence is insufficient to determine the effects of the technology on health outcomes.

Diagnostic Testing for Hypoglossal Nerve Stimulation Implantation

Prior to Implantation:
Attended sleep study (polysomnography (PSG) or Home Sleep Apnea Test (HSAT) is considered medically necessary prior to hypoglossal nerve stimulation implantation for the treatment of moderate to severe obstructive sleep apnea when **all** of the following criteria are met:

1. Body mass index (BMI) is less than 35 kg/m2; **and**
2. A polysomnography(PSG) or HSAT is performed within 24 months of first consultation for HGNS implant; **and**
3. The patient has predominantly obstructive events (defined as central and mixed apneas less than 25% of the total AHI); **and**
4. AHI is 15 to 65 events per hour; **and**
6. The patient has documentation that demonstrates CPAP failure (defined as AHI greater than 15 despite CPAP usage) or CPAP intolerance (defined as less than 4 hours per night, 5 nights per week or the CPAP has been returned) including shared decision making that the patient was intolerant of CPAP despite consultation with a sleep expert.

Post Diagnostic Testing following Hypoglossal Nerve Stimulation Implantation:

1. Polysomnography done post-implantation for the purpose of titrating the device parameters and determining therapeutic stimulation settings.
2. Following the titration study subsequent retesting, either HSAT or PSG, can be performed if any of the following occurs:
    - Clinical response is insufficient despite regular treatment with hypoglossal nerve stimulator.
    - Substantial weight gain with return of symptoms

Experimental or Investigational
The following other diagnostic tests are considered not medically necessary for patients with symptoms suggestive of obstructive sleep apnea:

- Actigraphy testing when used alone is not a validated method of diagnosing obstructive sleep apnea
- Acoustic pharyngometry, or SNAP testing with fewer than 3 channels
- Cephalographic x-rays for diagnosis of obstructive sleep apnea (Lateral cephalographic x-rays

and orthopantograms maybe medically necessary for evaluating patients for oral appliances; lateral cephalographic x-rays may also be necessary to evaluate patients for obstructive sleep apnea surgery)
- X-rays of the temporomandibular joint or sella turcica
- Laryngeal function studies
- Sonography
- Static charge sensitive bed
- Tomographic x-ray
- A limited daytime sleep study sometimes used for PAP desensitization and acclimatization (e.g., "PAP- Nap" 95807 study).

Note: Patients underage 21 enrolled in Medicaid, can only be denied due to Medical Necessity based on Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) requirements.

FREQUENCY INFORMATION:

Sleep Testing is limited to two (2) in 12 months.

Multiple sleep latency (95805) is limited to one (1) day of testing in 12 months.

95805 is allowed in addition to (95808, 95810, or 95811). One (1) repeat (95805) may be covered if:
- The first test was invalid or uninterpretable in a patient with a high clinical pretest probability of a sleep disorder.
- The patient has more than one sleep disorder.

NOTE: Services more than the above limitations are subject to medical review of documentation that supports medical necessity. The following information is required documentation to support medical necessity: physician history and physical, physician procedure note, treatment plan, plan of treatment, electroencephalogram study, and polysomnography (sleep) study

CODING INFORMATION:

CPT Coding:

95782	Polysomnography; younger than 6 years, sleep staging with 4 or more additional parameters of sleep, attended by a technologist
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
95800	Sleep study, unattended, simultaneous recording; heart rate, oxygen saturation, respiratory analysis (e.g., by airflow or peripheral arterial tone), and sleep time
95801	Sleep study, unattended, simultaneous recording; minimum of heart rate, oxygen saturation, and respiratory analysis (e.g., 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 (e.g., thoracoabdominal movement)

95807	Sleep study, simultaneous recording of ventilation, respiratory effort, ECG or heart rate, and oxygen saturation, attended by a technologist (Not medically necessary)
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 or older, sleep staging with 4 or more additional parameters of sleep, with initiation of continuous positive airway pressure therapy or bi-level ventilation, attended by 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/heartrate and 1 oxygen
G0400	Home sleep test (HST) with type IV portable monitor, unattended; minimum of 3 channels

PROGRAM EXCEPTIONS

Medicare Advantage and Dual-Eligible Special Needs Plan (DSNP) Coverage

The following National Coverage Determinations (NCD) are used to determine medical necessity for patients enrolled in a Medicare Advantage or DSNP plan:

- Sleep Testing for Obstructive Sleep Apnea (OSA) 240.4.1 and
- Continuous Positive Airway Pressure (CPAP) 240.4

The NCD 240.4.1 used to determine medical necessity is not fully established and there are no LCDs available for the state jurisdiction of Massachusetts. Therefore, the guidelines beginning on page 1 are used.

For DSNP members the Medicare coverage criteria is used. If the request is not fully approved under the Medicare criteria, the guidelines beginning on page 1 are used"

Managed Medicaid Coverage:

For members enrolled in managed Medicaid, the guidelines beginning on page 1 are used.

DEFINITIONS:

Actigraphy: measures physical activity, typically via a wrist-worn movement sensor, employed to estimate sleep and wakefulness based on relative levels of physical inactivity and activity.

Apnea: temporary cessation of breathing and, therefore, of the body's intake of oxygen and release of carbon dioxide; cessation of airflow for 10 seconds or more

Apnea-Hypopnea Index (AHI): the total number of apneas and hypopnea as per hour of sleep. AHI is an index of severity of obstructive sleep apnea. AHI is calculated by dividing the number of apneas plus the

number of hypopneas by the number of hours of sleep.

If the AHI is calculated based on less than 2 hours of continuous recorded sleep, the total number of recorded events used to calculate the AHI must be at least the number of events that would have been required in a 2- hour period (i.e., greater than or equal to 10 events).

Cataplexy: sudden attacks of muscular weakness and hypotonia triggered by an emotional stimulus such as laughter, anger, or fear.

Central Sleep Apnea (CSA): the repeated cessation of breathing caused by the temporary signal loss from the brain sent to the breathing muscles. CSA is most often seen in patients with neurologic disorders, congestive heart failure and in patients who take certain medications (e.g., opiates, benzodiazepines).

Electroencephalography (EEG): evaluates brain waves during different stages of sleep.

Electrocardiography (EKG/ECG): measures electrical rhythm of the heart.

Electromyography (EMG): evaluates muscle movements during sleep.

Electrooculography (EOG): evaluates eye movement during dream (REM) sleep.

Excessive Daytime Sleepiness: Score greater than or equal to 10 on the Epworth Sleepiness Scale.

Home Sleep Apnea Test (HSAT): also known as portable or unattended sleep test. HAST is conducted in the home setting or in a facility outside of the sleep laboratory. This test is unattended by a sleep technologist and may provide many of the same measurements as an in-lab sleep study, such as brain waves, heart rate, breathing, sleep position and oxygen saturation. This test is used to diagnose OSA in patients without comorbid conditions.

Hypersomnolence: excessive sleepiness during the typical period of wakefulness.

Hypoglossal Nerve Stimulation: The hypoglossal nerve stimulator is an implanted medical device that reduces the occurrence of OSA by electrically stimulating the hypoglossal nerve, which causes tongue movement. This stimulation is timed with breathing to relieve upper airway obstruction. The hypoglossal nerve stimulation system is fully implanted beneath the skin and controlled with a remote, allowing patients to sleep free from devices on the face or in the mouth.

Hypopnea: an abnormal respiratory event lasting at least ten seconds with at least 30% reduction in thoracoabdominal movement or airflow as compared to baseline, and with atleasta4%oxygen desaturation, or a ≥ 3% oxygen desaturation from pre-event baseline and/or the event is associated with an arousal.

Insomnia: an inability to sleep; abnormal wakefulness which may be characterized as difficulty falling asleep or sustained awakenings from sleep.

Maintenance of Wakefulness Test (MWT): measures sleep latency when the patient is instructed to attempt to remain awake in an unstimulated environment. MWT measures wakefulness during a person's typical wake period. It is used to assess a person's response to therapy (wakefulness) when treatment for a sleep disorder (e.g., OSA, PLMD, narcolepsy, etc.) has been undertaken (e.g., PAP, pharmacotherapies, etc.).

Multiple Sleep Latency Test (MSLT): measures how quickly the patient falls asleep when instructed to relax in a quiet and dimly lit room. The MSLT is performed to assess pathologic sleepiness during the patient's typical wake period.

Narcolepsy: recurrent, uncontrollable, episodes of sleep, often associated with hypnagogic hallucinations, sleep paralysis and cataplexy. Patients experience profound daytime sleepiness.

Nocturnal: pertaining to, occurring at, or active at night.

O2 Saturation: percentage of oxygen carried by the blood.

Obstructive Sleep Apnea (OSA): characterized by repetitive apneas and/or hypopneas during sleep, caused by complete or partial collapse of pharyngeal airway during sleep. In adults, an apnea/hypopnea index (AHI) greater than or equal to 5 but less than 15 is considered mild OSA. AHI greater than or equal to 15 but less than 30 is considered moderate OSA. AHI greater than or equal to 30 is considered severe OSA. In pediatric patients, an AHI greater than or equal to 1 is considered abnormal.

PAP-NAP: limited sleep study during which sleep technologists provide behavioral coaching and PAP therapy desensitization to sleep patients

Parasomnia: abnormal sleep behavior during sleep, such as sleepwalking, sleep talking, sleep eating, sleep terrors, and dream enactment.

Periodic Limb Movement Disorder (PLMD): characterized by an involuntary, repetitive limb movement that may occur during sleep and usually involve the legs. This causes frequent arousals from sleep and often results in excessive daytime sleepiness.

Polysomnography: test performed in the sleep laboratory to evaluate the parameters of sleep.

REM Behavior Disorder (RBD): parasomnia occurring in REM sleep that primarily afflicts men of middle age or older; with a history of cerebrovascular disease. Presenting symptoms include violent behavior during sleep and dream enactment, typically with memory of the event.

Respiratory Disturbance Index (RDI): number of apneas + hypopneas + respiratory-related events during the sleep test divided by the total number of hours slept.

Respiratory-Event Index (REI); a measurement of sleep disordered breathing on home sleep apnea testing defined as number of apneas + hypopneas during the sleep test divided by the total sleep or recording time reported in hours.

Restless Leg Syndrome (RLS): an unpleasant discomfort typically inside the calves when sitting or lying down, especially just before sleep. This produces an irresistible urge to move the legs and may interfere with the ability to fall asleep. Other extremities or other body parts may also be affected.

Seizure: a paroxysmal event resulting from sudden excessive discharge of the neurons of the cerebral cortex. Lack of sleep facilitates epileptic activity and seizures.

Sleep paralysis: experience of being awake but unable to move and lasting a few seconds. By itself, sleep paralysis may be a normal phenomenon. However, when present with other symptoms, it may be a part of the symptomatology of narcolepsy.

Sleep terrors: similar to nightmares but occurring in non-REM sleep. The patient may enact the nightmare without memory of the event.

Snoring: noisy breathing occurring during sleep, due to vibration of the uvula and soft palate.

Split-Night Study: the initial diagnostic portion of the polysomnography followed by PAP titration therapy occurring during the same sleep test.

Treatment-Emergent Central Sleep Apnea is a form of central sleep apnea specifically identified by the persistence or emergence of central apneas and/or hypopneas upon exposure to CPAP, bi-level therapy, or APAP, when obstructive events have disappeared. These patients have predominately obstructive or mixed

apneas during the diagnostic sleep study occurring at greater than or equal to 5 times per hour. With use of a CPAP, bi-level therapy, or APAP, they show a pattern of central apneas and/or central hypopneas that meets the definition of CSA described above.

Type I Sleep Study Devices: for sleep studies performed attended in a sleep laboratory. Minimum requirements include recording of EEG, EOG, chin EMG, anterior tibialis EMG, ECG, airflow, respiratory effort and oxygen saturation. Body position is documented. The sleep technologist is in attendance during Type I sleep studies

Type II Sleep Study Devices: for sleep studies performed unattended outside of a sleep lab facility. Type II devices are portable devices that have a minimum of 7 channels (e.g., EEG, EOG, EMG, ECG or heartrate, airflow, respiratory effort, and oxygen saturation and monitor sleep staging). A sleep technologist is not in attendance during Type II studies.

Type III Sleep Study Devices: for sleep studies performed unattended outside of a sleep laboratory facility. Type III devices are portable devices that monitor and record a minimum of four channels and must record airflow, heart rate or ECG, and oxygen saturation. The sleep technologist is not in attendance during Type III studies.

Type IV Sleep Study Devices: for sleep studies performed unattended outside a sleep laboratory. Type IV devices are portable devices that monitor and record a minimum of three channels. Other measurements may include oximetry and heart rate. The technologist is not in attendance during Type IV sleep studies.

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GUIDELINE UPDATE INFORMATION:

12/19/2013	New coverage guideline
5/22/2015	• Scheduled review. Adherence criteria, criteria related to Adaptive • Servo Ventilation and definitions added. Experimental/Investigational diagnostic tests updated: Actigraphy used alone, and use of Acoustic pharyngometry, or SNAP testing with fewer than three channels. • Guideline reformatted; references updated
5/25/2016	• Updated definitions of comorbid conditions and secondary sleep disorders • Updated ASV indications with most current recommendations • Expanded definition of MWT • Provided list of standard PAP supply replacement schedule • Added REI as a measurement of sleep disordered breathing • Updated oxygen saturation requirements for PAP titration (CPT • 95811) • Extensive reformatting changes
3/28/2017	Sleep disorders without suspected OSA identified as criteria for in- facility testing
6/21/2017	Scheduled review: added PAP replacement language, in-facility diagnostic testing for sleep disorders not associated with OSA
8/9/2018	Scheduled review: describe snoring as habitual vs. disruptive as suggestive evidence of sleep disordered breathing; inclusion of chronic opioid use as a comorbid condition; expand measurement of compliance over a 24-hour period.
6/8/2020	**Scheduled Review:** **Sleep Testing** Witnessed apnea as standalone risk condition for OSA Updated LVEF from 45 % to 40% for moderate to severe CHF OHS moved from sleep disordered breathing to comorbid condition list Align definition of PAP compliance with CMS Increase timeframe from 90 days to 1 year for allowance of HSAT Include implantation of hypoglossal nerve stimulator for testing reassessment of efficacy of device **Treatment of OSA and Other Sleep Disordered Breathing** Indication of bi-level therapy for non-OSA conditions Continued use criteria for bi-level therapy for non-OSA conditions Remove HNS from list of E/I **Updated definitions** **Updated references**

5/24/2021	**Scheduled Review:** Further defined the evidence supporting conditions requiring a lab based sleep study pertaining to: • COPD • Asthma • Refractory cardiac arrhythmia • Chronic opioid medication use • Significant oxygen desaturations during diagnostic testing • Update for requirements for replacement positive airway pressure devices (PAP) wher broken and patient has been previously diagnosed with OSA and doing well on therapy. • Streamline and clarify sleep study re-testing for adults and children • Parasomnias in children Updated references Updated definitions
5/31/2022	Annual review, retitled policy to Diagnostic Testing Management with PAP removed to its own policy Add testing information pre and post hypoglossal nerve stimulation Update repeat criteria Removed APAP section and updated Full Night, Attended PAP Titration Study re: APAP Expanded pediatric indications for testing Updated references
6/20/23	Annual review Added statement regarding ordering and interpreting diagnostic testing. Updated Comorbid medical conditions Updated Secondary concomitant or associated sleep disorders Updated Repeat in-lab PAP Titration Updates to Post Diagnostic Testing following Hypoglossal Nerve Stimulation Implantation Polysomnography done at 2 to 6 months post-implantation Updated references

11/30/23	**CMS Update** Medicare Advantage coverage to follow NCD 240.4.1 Updated references
08/01/24	**Annual Review** • Repeat Attended Titration Study section ○ Removed O2 saturation criteria in No. 1 and added it to No. 2 for clarity AND to match Full Night Titration criteria ○ Deleted "*the member is currently on APAP therapy"* from criteria No. 2 for clarity (to decrease inappropriate approvals instead of escalating to physician) ○ Added a 3rd criterion to cover treatment emergence sleep apnea and failed titration after split night study ○ Added "*for repeat titration*" to NOTE at end of section for clarification: • MSLT Attended Titration ○ Clarified criteria by removing current symptoms of narcolepsy to meet most recent updates to MSLT criteria from American Academy of Sleep as there are other reasons to do MSLT besides narcolepsy (Reference added) • Pediatric Split Night Study (95811) ○ Add "*and re-titration*" when A&B, A& C or A& D (for clarity) ○ Add Criterion D. • In Diagnostic Testing for Hypoglossal Nerve Stimulation Implantation ○ Added *(Home Sleep Apnea Test (HSAT)* to criteria (in addition to polysomnography [PSG]) • In Post Diagnostic Testing for Hypoglossal Nerve Stimulation Implantation ○ Removed *2-6 months* from the 1st criteria to expand and not limit time frame • References Updated

6/2025	**Annual Review** • Pages 2-10: Removed the word "Acute" from comorbid medical conditions Home Sleep Apnea Test (HSAT) section, Attended Sleep Study - Polysomnography (PSG) section, Full Night, Attended PAP Titration Study section, Split Night Sleep Study section and Repeat Attended Titration Study section: "~~Acute,~~ Uncontrolled or refractory cardiac arrhythmia(s) supported by clinical documentation" since cardiac arrhythmia can be both acute and/or chronic. • Page 15: Clarified Medicare Advantage, Dual-Eligible Special Needs Plan (DSNP) and Managed Medicaid Coverage section: Page 15: Added PROGRAM EXCEPTIONS before the start of the Medicare Advantage and DSNP Coverage section. Page 15: Removed LCD Polysomnography and Sleep Testing L36839 Page 15: Added: "The NCD 240.4.1 used to determine medical necessity **is** not fully established and there are no LCDs available for the state jurisdiction of Massachusetts. Therefore, the guidelines beginning on page 1 are used". Page 15: Added: "For DSNP members the above Medicare coverage criteria is used. If the request is not fully approved under the Medicare criteria, the guidelines beginning on page 1 are used" since this LOB is not effective yet. Page 15: Clarified Managed Medicaid section: "For members enrolled in managed Medicaid, the guidelines beginning on page 1 are used" • Page 18: Removed any reference not applicable to diagnosis of sleep disordered breathing and older than 10 years (except for those guidelines over 10 years that have not been updated).