AMERICAN ACADEMY OF OTOLARYNGOLOGY–HEAD AND NECK SURGERY FOUNDATION

AAO42: Obstructive Sleep Apnea: Improvement of Obstructive Sleep Apnea after a Corrective Surgical Procedure

High Priority Status: Yes / Outcome
CBE Number: N/A

Measure Description:
Percentage of patients aged 18 years and older who have a diagnosis of obstructive sleep apnea and received a corrective procedure for the obstructive sleep apnea and had an improvement in their post-operative sleep study results (i.e., Apnea-Hypopnea Index [AHI], Respiratory Disturbance Index [RDI]) compared to their pre-operative results)

Instructions:
This measure is to be submitted **each time** a patient underwent a corrective surgical procedure for obstructive sleep apnea during the performance period. This measure may be submitted by clinicians based on the services provided and the measure-specific denominator coding.

Denominator:
1. Hypoglossal Nerve Stimulation Procedure: All patients aged 18 years and older who have a diagnosis of obstructive sleep apnea and received a corrective procedure for the obstructive sleep apnea.
2. Turbinate Procedure: All patients aged 18 years and older who have a diagnosis of obstructive sleep apnea and received a corrective procedure for the obstructive sleep apnea.

Denominator Exclusion:
Patients without a documented post-operative sleep study.

Denominator Criteria:
Patients aged 18 years and older
AND
Diagnosis: Obstructive Sleep Apnea
AND
Procedure: Hypoglossal Nerve Stimulation
OR
Procedure: Turbinate Procedure
AND NOT
Absence of Post-Operative Sleep Study

For a list of codes that qualify as denominator eligible visits, reference Addendum attached.

Numerator:
1. Patients who had an improvement* in their AHI post-operative results compared to their pre-operative results.
2. Patients who had an improvement* in their AHI post-operative results compared to their pre-operative results.
3. Total patient performance weighted average of the two above components

*To meet this outcome measure, there must be documentation of an AHI that shows a post-operative score below 20 or half of the pre-operative score (or equivalent value and test supported by evidence and/or guidelines)

Denominator Exceptions:
None

Measure Classifications
Submission Pathway: Traditional MIPS
Measure Type: Outcome
High Priority Type: Outcome
Care Setting(s): Ambulatory Care: Ambulatory; Ambulatory Care: Clinician Office/Clinic; Ambulatory Care: Hospital; Ambulatory Surgical Center; Hospital Outpatient; Office Based Surgery Center; Outpatient Services
Includes Telehealth: No
Number of Performance Rates: 1
- Inverse measure: No
- Continuous measure: No
- Proportional measure: Yes
- Ratio measure: No
- Risk Adjusted measure: No

Clinical Recommendation Statement:
The following evidence statements are extracted from the referenced guidelines: AASM Clinical Guideline for the Evaluation, Management and Long-term Care of Obstructive Sleep Apnea in Adults (2009):

The diagnosis of OSA should be established prior to surgery and the severity determined by objective testing (Consensus). In addition to the general sleep evaluation described above, patients should be evaluated for eligibility for surgery. This evaluation should include an anatomical examination to identify possible surgical sites, an assessment of any medical, psychological or social comorbidities that might affect surgical outcome, and a determination of the patient's desire for surgery (Consensus). The patient should be counseled on the surgical options, likelihood of success, goals of treatment, risks and benefits of the procedure, possible side effects, and complications and alternative treatments (Consensus). Surgery may also be considered as an adjunct therapy when obstructive anatomy or functional deficiencies compromise other therapies or to improve tolerance of other OSA treatments (Consensus). Maxillary and mandibular advancement can improve PSG parameters comparable to CPAP in the majority of patients (Consensus). Most other sleep apnea surgeries are rarely curative for OSA but may improve clinical outcomes (e.g., mortality, cardiovascular risk, motor vehicle accidents, function, quality of life, and symptoms) (Consensus). Laser-assisted uvulopalatoplasty is not recommended for the treatment of obstructive sleep apnea (Guideline).

The frequency of post-surgical follow-up will be determined by the type of surgery but should include a surgery-specific evaluation as well a general OSA-related evaluation. Surgery specific outcomes to be evaluated by the surgical team include wound healing, assessment of anatomical result, side effects, and complications (Consensus). For patients undergoing multi-step procedures, sleep specialist evaluation may be considered between surgeries for an intermediate sleep study to assess response or reconsideration of all non-surgical therapies, if indicated. After the surgical team determines healing is completed, a final general OSA outcome evaluation is indicated (Consensus). Sleep specialist follow-up is recommended for long-term follow-up after surgical treatment is completed (Consensus). Following adjunctive surgery, patients should be evaluated to assess the effect of surgery on PAP or OA tolerance, adherence, and symptom resolution (Consensus).

The parameters, settings, filters, technical specifications, sleep stage scoring and event scoring should be done in accordance with the AASM Manual for the Scoring of Sleep and Associated Events. The

frequency of obstructive events is reported as an apnea + hypopnea index (AHI) or respiratory disturbance index (RDI). The definition of this index has varied over time. When an index is reported in this guideline it was taken directly from the specific practice parameter and the reader is referred to the source document for the definition. Every sleep study should be reviewed and interpreted by a qualified physician, as defined in the AASM Accreditation Standards (Consensus). Interscorer reliability assessment and other quality assurance measures should be performed on a regular basis. Formal written policies should be in place for all procedures. The most accepted measure of quality is sleep center or laboratory accreditation by the AASM (Consensus).

Consensus-based recommendations were developed to address important areas of clinical practice that had not been the subject of a previous AASM practice parameter, or where the available empirical data were limited or inconclusive.

Rationale:
Obstructive sleep apnea (OSA) is a complex disorder characterized by the collapse of the upper airway during sleep. Downstream effects involve the cardiovascular, pulmonary, and neurocognitive systems. OSA is increasingly recognized as a major contributor to cardiovascular morbidity including systemic and pulmonary arterial hypertension, heart failure, acute coronary syndromes, atrial fibrillation, and other arrhythmias. Pulmonary manifestations include the development of chronic thromboembolic disease, which can then lead to chronic thromboembolic pulmonary hypertension (CTEPH). Neurocognitive morbidities include stroke and neurobehavioral disorders.

A 2012 review was undertaken to assess surgical therapy for obstructive sleep apnea. Surgery may be used as a primary treatment option in select patients who have identifiable anatomical problems (e.g., enlarged tonsils) or it may be used as a “salvage” treatment option for patients who are not compliant with CPAP. Despite a variable cure rate, surgery has been shown to routinely decrease OSA severity and increase subjective quality of life. The main objective of OSA surgery is to improve or eliminate the airway collapse that occurs during sleep while preserving the normal function of the upper airway and related structures, such as speech and swallowing. In the literature, surgical success has been traditionally defined as a reduction of the AHI by 50 % and AHI < 20 after surgery. The criteria for a treatment cure are defined as an AHI < 5 after treatment. Other goals of surgery include normalization of sleep quality, improvement of the AHI and oxygen saturation levels

Abbasi A, Gupta SS, Sabharwal N, Meghrajani V, Sharma S, Kamholz S, Kupfer Y. A comprehensive review of obstructive sleep apnea. Sleep Sci. 2021 Apr-Jun;14(2):142-154. doi: 10.5935/1984-0063.20200056. PMID: 34381578; PMCID: PMC8340897.

Carvalho B, Hsia J, Capasso R. Surgical therapy of obstructive sleep apnea: a review. Neurotherapeutics. 2012 Oct;9(4):710-6. doi: 10.1007/s13311-012-0141-x. PMID: 22915293; PMCID: PMC3480570.

measures require a license agreement between the user and the American Academy of Otolaryngology – Head and Neck Surgery Foundation.

The measure is not a clinical guideline, does not establish a standard of medical care, and has not been tested for all potential applications. The measure and specifications are provided “as is” without warranty of any kind. Neither the American Academy of Otolaryngology – Head and Neck Surgery Foundation (AAO-HNSF), nor its members shall be responsible for any use of the measure. The AAO-HNSF and its members disclaim all liability for use or accuracy of any Current Procedural Terminology (CPT®) or other coding contained in the specification.

Addendum

Hypoglossal Nerve Stimulation			
Measure Element	**Code Type**	**Code**	**Code Description**
Denominator - Hypoglossal Nerve Stimulation	CPT	64582	Open implantation of hypoglossal nerve neurostimulator array, pulse generator, and distal respiratory sensor electrode or electrode array
Denominator - Hypoglossal Nerve Stimulation	CPT	64583	Revision or replacement of hypoglossal nerve neurostimulator array and distal respiratory sensor electrode or electrode array, including connection to existing pulse generator
Denominator - Hypoglossal Nerve Stimulation	CPT	64584	Removal of hypoglossal nerve neurostimulator array, pulse generator, and distal respiratory sensor electrode or electrode array
Denominator - Hypoglossal Nerve Stimulation	HCPCS	C8008	Revision or replacement of hypoglossal nerve neurostimulator array including connection to existing pulse generator
Denominator - Hypoglossal Nerve Stimulation	HCPCS	C8012	Revision or replacement of hypoglossal nerve(s) neurostimulator electrode array(s) and receiver
Obstructive Sleep Apnea			
Denominator - Obstructive sleep apnea (OSA)	ICD10CM	G47.33	Obstructive sleep apnea
Denominator - Obstructive sleep apnea (OSA)	HCPCS	M1441	Encounter corresponds to initial diagnosis of sleep apnea or first contact with sleep apnea diagnosed patient
Turbinate Procedure			
Denominator - Turbinate Procedure	CPT	42145	Palatopharyngoplasty (eg, uvulopalatopharyngoplasty, uvulopharyngoplasty)
Denominator - Turbinate Procedure	CPT	21193	Reconstruction of mandibular rami, horizontal, vertical, C, or L osteotomy; without bone graft
Denominator - Turbinate Procedure	CPT	21194	Reconstruction of mandibular rami, horizontal, vertical, C, or L osteotomy; with bone graft (includes obtaining graft)
Denominator - Turbinate Procedure	CPT	21195	Reconstruction of mandibular rami and/or body, sagittal split; without internal rigid fixation

Denominator - Turbinate Procedure	CPT	21196	Reconstruction of mandibular rami and/or body, sagittal split; with internal rigid fixation
Denominator - Turbinate Procedure	CPT	21198	Osteotomy, mandible, segmental
Denominator - Turbinate Procedure	CPT	21199	Osteotomy, mandible, segmental; with genioglossus advancement
Denominator - Turbinate Procedure	CPT	21206	Osteotomy, maxilla, segmental (eg, Wassmund or Schuchard)
Denominator - Turbinate Procedure	CPT	21685	Hyoid myotomy and suspension
Denominator - Turbinate Procedure	CPT	42950	Pharyngoplasty (plastic or reconstructive operation on pharynx)
Denominator - Turbinate Procedure	CPT	21142	Reconstruction midface, LeFort I; 2 pieces, segment movement in any direction, without bone graft
Denominator - Turbinate Procedure	CPT	21143	Reconstruction midface, LeFort I; 3 or more pieces, segment movement in any direction, without bone graft
Denominator - Turbinate Procedure	CPT	21145	Reconstruction midface, LeFort I; single piece, segment movement in any direction, requiring bone grafts (includes obtaining autografts)
Denominator - Turbinate Procedure	CPT	21146	Reconstruction midface, LeFort I; 2 pieces, segment movement in any direction, requiring bone grafts (includes obtaining autografts) (eg, ungrafted unilateral alveolar cleft)
Denominator - Turbinate Procedure	CPT	21147	Reconstruction midface, LeFort I; 3 or more pieces, segment movement in any direction, requiring bone grafts (includes obtaining autografts) (eg, ungrafted bilateral alveolar cleft or multiple osteotomies)
Denominator - Turbinate Procedure	CPT	21244	Reconstruction of mandible, extraoral, with transosteal bone plate (eg, mandibular staple bone plate)