Complete Summary

GUIDELINE TITLE

Practice guidelines for the perioperative management of patients with obstructive sleep apnea: a report by the American Society of Anesthesiologists Task Force on Perioperative Management of Patients with Obstructive Sleep Apnea.

BIBLIOGRAPHIC SOURCE(S)

Practice guidelines for the perioperative management of patients with obstructive sleep apnea: a report by the American Society of Anesthesiologists Task Force on Perioperative Management of Patients with Obstructive Sleep Apnea. Anesthesiology 2006 May;104(5):1081-93. [3 references] PubMed

GUIDELINE STATUS

This is the current release of the guideline.

** REGULATORY ALERT **

FDA WARNING/REGULATORY ALERT

Note from the National Guideline Clearinghouse: This guideline references drugs for which important revised regulatory information has been released:

On April 7, 2005, the U.S. Food and Drug Administration (FDA) asked manufacturers of non-prescription (over the counter [OTC]) non-steroidal anti-inflammatory drugs (NSAIDs) to revise their labeling to include more specific information about potential gastrointestinal (GI) and cardiovascular (CV) risks, and information to assist consumers in the safe use of the drugs. See the FDA Web site for more information.

Subsequently, on June 15, 2005, the FDA requested that sponsors of all NSAIDs make labeling changes to their products. FDA recommended proposed labeling for both the prescription and OTC NSAIDs and a medication guide for the entire class of prescription products. See the FDA Web site for more information.

COMPLETE SUMMARY CONTENT

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INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES
IDENTIFYING INFORMATION AND AVAILABILITY
DISCLAIMER

SCOPE

DISEASE/CONDITION(S)

Perioperative complications related to obstructive sleep apnea (OSA)

GUIDELINE CATEGORY

Evaluation
Management
Prevention
Risk Assessment

CLINICAL SPECIALTY

Anesthesiology
Internal Medicine
Obstetrics and Gynecology
Otolaryngology
Pediatrics
Sleep Medicine
Surgery

INTENDED USERS

Advanced Practice Nurses
Hospitals
Nurses
Physician Assistants
Physicians
Respiratory Care Practitioners

GUIDELINE OBJECTIVE(S)

To improve the perioperative care and reduce the risk of adverse outcomes in patients with obstructive sleep apnea (OSA) who receive sedation, analgesia, or anesthesia for diagnostic or therapeutic procedures under the care of an anesthesiologist

TARGET POPULATION

Patients with obstructive sleep apnea (OSA) who may be at increased risk for perioperative morbidity and mortality because of potential difficulty in maintaining a patent airway. This population includes but is not limited to patients who have

sleep apnea resulting from obesity, pregnancy, and other skeletal, cartilaginous, or soft tissue abnormalities causing upper airway obstruction.

These Guidelines are not intended for use in patients with the following:

- Pure central sleep apnea
- Abnormalities of the upper or lower airway not associated with sleep apnea (e.g., deviated nasal septum)
- Daytime hypersomnolence from other causes
- Patients younger than 1 year
- Obesity in the absence of sleep apnea

INTERVENTIONS AND PRACTICES CONSIDERED

Preoperative Evaluation

1. Medical records review
2. Patient and family interview
3. Screening questionnaire
4. Focused physical examination
5. Sleep study

Preoperative Preparation

1. Preoperative treatment/optimization for obstructive sleep apnea (OSA) (e.g., continuous positive airway pressure [CPAP], noninvasive positive-pressure ventilation [NIPPV], mandibular appliances, medical treatment)
2. Consulting the American Society of Anesthesiologists "Practice Guidelines for Management of the Difficult Airway"
3. Limiting procedures to facilities with full hospital services

Intraoperative Management

1. Anesthetic technique
    - Local or regional anesthesia versus general anesthesia
    - Combined regional and general anesthesia versus general anesthesia
    - Sedation versus general anesthesia
2. Monitoring
    - Continuously monitoring the respiratory depressant effects of sedatives and/or opioids (e.g., level of consciousness, pulmonary ventilation, oxygenation, automated apnea monitoring)
    - Special intraoperative monitoring techniques (arterial line, pulmonary artery catheter)
3. Extubation
    - Verifying the full reversal of neuromuscular block before extubation
    - Extubating patients after they are fully awake (versus asleep or partially awake)
    - Extubating patients in the semiupright, lateral, or prone positions (versus supine)

Postoperative Management

1. Analgesic use
    - Regional analgesic techniques without neuraxial opioids versus systemic opioids
    - Neuraxial opioids versus systemic opioids
    - Oral analgesics versus parenteral opioids
    - Patient-controlled analgesia (PCA) without a background infusion versus PCA with a background infusion
    - Titration or lower dosage levels of systemic opioids
2. Oxygenation
    - Supplemental oxygen versus no supplemental oxygen
    - CPAP versus no CPAP (oxygen or room air)
    - CPAP for patients who had previously been on CPAP versus CPAP for patients not previously on CPAP
    - NIPPV versus no NIPPV (CPAP, oxygen, or room air)
3. Positioning patients in the lateral, prone, or tonsil position versus the supine position
4. Monitoring
    - Telemetry monitoring systems versus no telemetry monitoring systems
    - Monitored settings versus routine hospital wards
5. Duration of stay
    - Extended stay in postanesthesia care unit [PACU] versus no extended stay in PACU
    - Hospital admission versus discharge home

MAJOR OUTCOMES CONSIDERED

Adverse outcomes in patients with obstructive sleep apnea

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Scientific evidence was derived from aggregated research literature, and opinion-based evidence was obtained from surveys, open presentations, and other consensus-oriented activities (e.g., Internet posting). For purposes of literature aggregation, potentially relevant clinical studies were identified via electronic and manual searches of the literature. The electronic and manual searches covered a 53-year period from 1953 through 2005. More than 2000 citations were initially identified, yielding a total of 622 nonoverlapping articles that addressed topics related to the evidence linkages. After review of the articles, 332 studies did not provide direct evidence and were subsequently eliminated. A total of 290 articles contained direct linkage related evidence.

NUMBER OF SOURCE DOCUMENTS

A total of 290 articles contained direct linkage related evidence.

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

When sufficient numbers of studies are available for evaluation, the following terms describe the strength of the findings.

Supportive: Meta-analyses of a sufficient number of adequately designed studies indicate a statistically significant relationship ($P < 0.01$) between a clinical intervention and a clinical outcome.

Suggestive: Information from case reports and descriptive studies permits inference of a relationship between an intervention and an outcome. This type of qualitative information does not permit a statistical assessment of significance.

Equivocal: Qualitative data are not adequate to permit inference of a relationship between an intervention and an outcome and (1) there is insufficient quantitative information or (2) aggregated comparative studies have found no significant differences among groups or conditions.

The *lack* of scientific evidence in the literature is described by the following terms.

Silent: No identified studies address the specified relationship between an intervention and outcome.

Insufficient: There are too few published studies to investigate a relationship between an intervention and an outcome.

Inadequate: The available studies cannot be used to assess the relationship between an intervention and an outcome. These studies either do not meet the criteria for content as defined in the Focus of the original Guideline document, or do not permit a clear causal interpretation of findings due to methodologic concerns.

METHODS USED TO ANALYZE THE EVIDENCE

Meta-Analysis
Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

The scientific assessment of these Guidelines was based on evidence linkages or statements regarding potential relationships between clinical interventions and outcomes. The interventions were examined to assess their relationship to a variety of outcomes related to the management of patients with obstructive sleep apnea (OSA) in the perioperative setting.

Initially, each pertinent outcome reported in a study was classified as supporting an evidence linkage, refuting a linkage, or equivocal. The results were then summarized to obtain a directional assessment for each evidence linkage before conducting a formal meta-analysis. Literature pertaining to six evidence linkages contained enough studies with well-defined experimental designs and statistical information sufficient for meta-analyses. These linkages were (1) medical records review (OSA and body mass index; OSA and hypertension); (2) focused physical examination (OSA associated with neck circumference and various cephalometric measurements); (3) preoperative treatment/optimization for OSA (continuous positive airway pressure [CPAP] [nonperioperative patients] and apnea-hypopnea index [AHI] scores, respiratory depression index scores, and oxygen saturation levels; nonperioperative mandibular appliance and AHI scores); (4) postoperative analgesic use (neuraxial opioids versus systemic opioids [in non-OSA patients] and oxygen saturation levels), postoperative analgesic use (neuraxial opioids versus systemic opioids [in non-OSA patients] and respiratory depression), and postoperative patient-controlled analgesia [PCA] opioids (background infusion versus no background infusion [in non-OSA patients] and hypoxemia); (5) postoperative oxygenation (supplemental oxygen versus no supplemental oxygen [in non-OSA patients] and hypoxemia); and (6) postoperative positioning of patients (lateral, prone, or tonsil versus supine [nonperioperative patients] and AHI scores).

General variance-based effect-size estimates or combined probability tests were obtained for continuous outcome measures, and Mantel-Haenszel odds ratios were obtained for dichotomous outcome measures. Two combined probability tests were used as follows: (1) The Fisher combined test, producing chi-square values based on logarithmic transformations of the reported *P* values from the independent studies, and (2) the Stouffer combined test, providing weighted representation of the studies by weighting each of the standard normal deviates by the size of the sample. An odds ratio procedure based on the Mantel-Haenszel method for combining study results using 2 by 2 tables was used with outcome frequency information. An acceptable significance level was set at $P < 0.01$ (one tailed). Tests for heterogeneity of the independent studies were conducted to assure consistency among the study results. DerSimonian-Laird random effects odds ratios were considered when significant heterogeneity was found ($P < 0.01$). To control for potential publishing bias, a "fail-safe n" value was calculated. No search for unpublished studies was conducted, and no reliability tests for locating research results were done.

Meta-analytic results are reported in table 4 of the original guideline document. To be accepted as significant findings, Mantel-Haenszel odds ratios must agree with combined test results whenever both types of data are assessed. In the absence of Mantel-Haenszel odds ratios, findings from both the Fisher and weighted Stouffer combined tests must agree with each other to be acceptable as significant.

Interobserver agreement among Task Force members and two methodologists was established by interrater reliability testing. Agreement levels using a kappa statistic for two-rater agreement pairs were as follows: (1) type of study design, kappa = 0.50 to 0.69; (2) type of analysis, kappa = 0.43 to 0.60; (3) evidence linkage assignment, kappa = 0.88 to 1.00; and (4) literature inclusion for database, kappa = 0.44 to 0.87. Three-rater chance-corrected agreement values

were (1) study design, Sav = 0.56, Var (Sav) = 0.009; (2) type of analysis, Sav = 0.54, Var (Sav) = 0.011; (3) linkage assignment, Sav = 0.87, Var (Sav) = 0.003; and (4) literature database inclusion, Sav = 0.58, Var (Sav) = 0.030. These values represent moderate to high levels of agreement.

Consensus was obtained from multiple sources, including (1) survey opinion from consultants who were selected based on their knowledge or expertise in perioperative management of patients with OSA, (2) testimony from attendees of two publicly held open forums at two national anesthesia meetings, and (3) Task Force opinion and interpretation. An initial survey obtained consultant opinions regarding the management of patients with known or suspected OSA. The survey rate of return was 65% (n = 69 of 106). Results of this survey are reported in table 5 and the text of the original guideline document.

A second survey obtained consultant opinions regarding the feasibility of implementing the Guidelines in relation to their clinical practices. Results of this survey are reported in the Appendix and table 6 of the original guideline document.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The American Society of Anesthesiologists appointed a Task Force of 12 members to (1) review the published evidence, (2) obtain the opinion of a panel of consultants including anesthesiologists and nonanesthesiologist physicians and researchers who regularly care for patients with obstructive sleep apnea (OSA), and (3) build consensus within the community of practitioners likely to be affected by the Guidelines. The Task Force included anesthesiologists in both private and academic practices from various geographic areas of the United States, a bariatric surgeon, an otolaryngologist, and two methodologists from the American Society of Anesthesiologists Committee on Practice Parameters.

The Task Force developed the Guidelines by means of a six-step process. First, they reached consensus on the criteria for evidence of effective perioperative management of patients with OSA. Second, original published research studies from peer-reviewed journals relevant to the perioperative management of patients with OSA were evaluated. Third, the panel of expert consultants was asked to (1) participate in opinion surveys on the effectiveness of various perioperative management strategies for patients with OSA and (2) review and comment on a draft of the Guidelines developed by the Task Force. Fourth, the Task Force held open forums at two major national meetings to solicit input on its draft recommendations. National organizations representing most of the specialties whose members typically care for patients with OSA were invited to participate in the open forums. Fifth, the consultants were surveyed to assess their opinions on the feasibility and financial implications of implementing the Guidelines. Sixth, all available information was used to build consensus within the Task Force to finalize the Guidelines.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

The Task Force used a survey to obtain consultant opinions regarding the feasibility, including costs, of implementing the Guidelines in relation to their clinical practices. See Appendix and table 6 of the original Guideline document for survey results.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

The panel of expert consultants was asked to review and comment on a draft of the Guidelines developed by the Task Force. The Task Force held open forums at two major national meetings to solicit input on its draft recommendations. National organizations representing most of the specialties whose members typically care for patients with OSA were invited to participate in the open forums. Next, the consultants were surveyed to assess their opinions on the feasibility and financial implications of implementing the Guidelines (See Appendix and table 6 of the original guideline document for survey results). All available information was used to build consensus within the Task Force to finalize the Guidelines.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Preoperative Evaluation

Anesthesiologists should work with surgeons to develop a protocol whereby patients in whom the possibility of obstructive sleep apnea (OSA) is suspected on clinical grounds are evaluated long enough before the day of surgery to allow preparation of a perioperative management plan. This evaluation may be initiated in a preanesthesia clinic (if available) or by direct consultation from the operating surgeon to the anesthesiologist. A preoperative evaluation should include a comprehensive review of previous medical records (if available), an interview with the patient and/or family, and conducting a physical examination. Medical records review should include (but not be limited to) checking for a history of airway difficulty with previous anesthetics, hypertension or other cardiovascular problems, and other congenital or acquired medical conditions. Review of sleep studies is encouraged. The patient and family interview should include focused questions related to snoring, apneic episodes, frequent arousals during sleep (vocalization, shifting position, extremity movements), morning headaches, and daytime somnolence. A physical examination should include an evaluation of the airway, nasopharyngeal characteristics, neck circumference, tonsil size, and tongue volume. If any of these characteristics suggest that the patient has OSA,

the anesthesiologist and surgeon should jointly decide whether to (1) manage the patient perioperatively based on clinical criteria alone or (2) obtain sleep studies, conduct a more extensive airway examination, and initiate indicated OSA treatment in advance of surgery. If this evaluation does not occur until the day of surgery, the surgeon and anesthesiologist together may elect for presumptive management based on clinical criteria or a last-minute delay of surgery. For safety, clinical criteria (see table 1 of the original Guideline document) should be designed to have a high degree of sensitivity (despite the resulting low specificity), meaning that some patients may be treated more aggressively than would be necessary if a sleep study were available.

The severity of the patient's OSA, the invasiveness of the diagnostic or therapeutic procedure, and the requirement for postoperative analgesics should be taken into account in determining whether a patient is at increased perioperative risk from OSA (see table 2 of the original Guideline document). The patient and his or her family as well as the surgeon should be informed of the potential implications of OSA on the patient's perioperative course.

Preoperative Preparation

Preoperative initiation of continuous positive airway pressure (CPAP) should be considered, particularly if OSA is severe. For patients who do not respond adequately to CPAP, noninvasive positive-pressure ventilation (NIPPV) should be considered. In addition, the preoperative use of mandibular advancement devices or oral appliances and preoperative weight loss should be considered when feasible. A patient who has had corrective airway surgery (e.g., uvulopalatopharyngoplasty, surgical mandibular advancement) should be assumed to remain at risk for OSA complications unless a normal sleep study has been obtained (Young et al., 1993) and symptoms have not returned. Patients with known or suspected OSA may have difficult airways and therefore should be managed according to the "Practice Guidelines for Management of the Difficult Airway." ("American Society of Anesthesiologists Task Force on Management of the Difficult Airway, 2003) In patients at risk for perioperative complications from OSA, a preoperative determination must be made regarding whether surgery should be performed on an inpatient or outpatient basis (see recommendations for Inpatient versus Outpatient Surgery and Criteria for Discharge to Unmonitored Settings, below).

Intraoperative Management

Because of their propensity for airway collapse and sleep deprivation, patients at increased perioperative risk from OSA are especially susceptible to the respiratory depressant and airway effects of sedatives, opioids, and inhaled anesthetics; therefore, in selecting intraoperative medications, the potential for postoperative respiratory compromise should be considered. For superficial procedures, one should consider the use of local anesthesia or peripheral nerve blocks, with or without moderate sedation. If moderate sedation is used, ventilation should be continuously monitored by capnography or another automated method if feasible because of the increased risk of undetected airway obstruction in these patients. One should consider administering CPAP or using an oral appliance during sedation to patients previously treated with these modalities. General anesthesia with a secure airway is preferable to deep sedation without a secure airway,

particularly for procedures that may mechanically compromise the airway. Major conduction anesthesia (spinal/epidural) should be considered for peripheral procedures. Unless there is a medical or surgical contraindication, patients at increased perioperative risk from OSA should be extubated while awake. Full reversal of neuromuscular block should be verified before extubation. When possible, extubation and recovery should be carried out in the lateral, semiupright, or other nonsupine position.

Postoperative Management

Regional analgesic techniques should be considered to reduce or eliminate the requirement for systemic opioids in patients at increased perioperative risk from OSA. If neuraxial analgesia is planned, weigh the benefits (improved analgesia, decreased need for systemic opioids) and risks (respiratory depression from rostral spread) of using an opioid or opioid–local anesthetic mixture as compared with a local anesthetic alone. If patient-controlled systemic opioids are used, continuous background infusions should be used with extreme caution or avoided entirely. Nonsteroidal antiinflammatory agents and other modalities (e.g., ice, transcutaneous electrical nerve stimulation) should be considered if appropriate to reduce opioid requirements. Clinicians are cautioned that the concurrent administration of sedative agents (e.g., benzodiazepines, barbiturates) increases the risk of respiratory depression and airway obstruction.

Supplemental oxygen should be administered continuously to all patients who are at increased perioperative risk from OSA until they are able to maintain their baseline oxygen saturation while breathing room air. The Task Force cautions that supplemental oxygen may increase the duration of apneic episodes and may hinder detection of atelectasis, transient apnea, and hypoventilation by pulse oximetry. CPAP or NIPPV, with or without supplemental oxygen, should be continuously administered when feasible (e.g., when patients are not ambulating) to patients who were using these modalities preoperatively, unless contraindicated by the surgical procedure. Compliance with CPAP or NIPPV may be improved if patients bring their own equipment to the hospital.

If possible, patients at increased perioperative risk from OSA should be placed in nonsupine positions throughout the recovery process. Hospitalized patients who are at increased risk of respiratory compromise from OSA should have continuous pulse oximetry monitoring after discharge from the recovery room. Continuous monitoring may be provided in a critical care or stepdown unit, by telemetry on a hospital ward, or by a dedicated, appropriately trained professional observer in the patient's room. Continuous monitoring should be maintained as long as patients remain at increased risk. Intermittent pulse oximetry or continuous bedside oximetry without continuous observation does not provide the same level of safety. If frequent or severe airway obstruction or hypoxemia occurs during postoperative monitoring, initiation of nasal CPAP or NIPPV should be considered.

Inpatient versus Outpatient Surgery and Criteria for Discharge to Unmonitored Settings

Before patients at increased perioperative risk from OSA are scheduled to undergo surgery, a determination should be made regarding whether a given surgical procedure is most appropriately performed on a given patient on an inpatient or

outpatient basis. Factors to be considered in determining whether outpatient care is appropriate include (1) sleep apnea status, (2) anatomical and physiologic abnormalities, (3) status of coexisting diseases, (4) nature of surgery, (5) type of anesthesia, (6) need for postoperative opioids, (7) patient age, (8) adequacy of postdischarge observation, and (9) capabilities of the outpatient facility. The availability of emergency difficult airway equipment, respiratory care equipment, radiology facilities, clinical laboratory facilities, and a transfer agreement with an inpatient facility should be considered in making this determination.

These patients should not be discharged from the recovery area to an unmonitored setting (i.e., home or unmonitored hospital bed) until they are no longer at risk for postoperative respiratory depression. Because of their propensity to develop airway obstruction or central respiratory depression, this may require a longer stay as compared with non-OSA patients undergoing similar procedures. Adequacy of postoperative respiratory function may be documented by observing patients in an unstimulated environment, preferably while they seem to be asleep, to establish that they are able to maintain their baseline oxygen saturation while breathing room air.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

References open in a new window

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

Scientific evidence was derived from aggregated research literature, and opinion-based evidence was obtained from surveys, open presentations, and other consensus-oriented activities (e.g., Internet posting). For purposes of literature aggregation, potentially relevant clinical studies were identified via electronic and manual searches of the literature.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Improved perioperative care and reduced risk of perioperative morbidity and mortality in patients with obstructive sleep apnea (OSA) who receive sedation, analgesia, or anesthesia for diagnostic or therapeutic procedures under the care of an anesthesiologist.

POTENTIAL HARMS

- Concurrent administration of sedative agents (e.g., benzodiazepines, barbiturates) increases the risk of respiratory depression and airway obstruction.
- Supplemental oxygen may increase the duration of apneic episodes and may hinder detection of atelectasis, transient apnea, and hypoventilation by pulse oximetry. Continuous positive airway pressure (CPAP) or noninvasive positive-pressure ventilation (NIPPV), with or without supplemental oxygen, should be continuously administered when feasible (e.g., when patients are not ambulating) to patients who were using these modalities preoperatively, unless contraindicated by the surgical procedure.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

- Practice guidelines are systematically developed recommendations that assist the practitioner and patient in making decisions about health care. These recommendations may be adopted, modified, or rejected according to clinical needs and constraints.
- Practice guidelines are not intended as standards or absolute requirements. The use of practice guidelines cannot guarantee any specific outcome. Practice guidelines are subject to revision as warranted by the evolution of medical knowledge, technology, and practice. They provide basic recommendations that are supported by analysis of the current literature and by a synthesis of expert opinion, open forum commentary, and clinical feasibility data.
- The Task Force recognizes that it is not possible to determine with 100% accuracy whether a given patient will develop perioperative complications related to obstructive sleep apnea (OSA). Therefore, these Guidelines should be implemented with the goal of reducing the likelihood of adverse outcomes in patients who are judged to be at the greatest risk, with the understanding that it may be impractical to eliminate OSA-related perioperative morbidity and mortality completely. However, it is hoped that the implementation of these Guidelines will reduce the likelihood of adverse perioperative outcomes in patients with OSA.
- Tables 1 and 2 of the original guideline document are meant to serve as examples of how patients with OSA might be identified and stratified with respect to their perioperative risk. While they were developed by the Task Force with input from the consultants and open forum participants, these tables are not evidence based and have not been clinically validated.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

IMPLEMENTATION TOOLS

Staff Training/Competency Material

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness
Staying Healthy

IOM DOMAIN

Effectiveness
Safety

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2006 May

GUIDELINE DEVELOPER(S)

American Society of Anesthesiologists - Medical Specialty Society

SOURCE(S) OF FUNDING

American Society of Anesthesiologists

GUIDELINE COMMITTEE

Task Force on Perioperative Management of Patients with Obstructive Sleep Apnea

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available from the Anesthesiology Journal Web site.

Print copies: Available from the American Society for Anesthesiologists, 520 North Northwest Highway, Park Ridge, IL 60068-2573.

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Anestheiology continuing medical education (CME) program. Available at http://www.asahq.org/journal-cme.

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on June 1, 2006. The information was verified by the guideline developer on June 8, 2006.

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