

# Evidence-Based Practice Guidelines for the Surgical Patient with Obstructive Sleep Apnea

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## Introduction

- Obstructive Sleep Apnea (OSA) affects nearly 18 million Americans with 60-90% of patients being undiagnosed or unaware they have the disease (The Society of Anesthesia and Sleep Medicine, 2022)
- A formal diagnosis of OSA requires an overnight polysomnography sleep study which is costly and impractical for every patient to undergo before surgery.
- OSA predisposes patients to life-threatening respiratory complications following surgery

## Significance to Anesthesia Providers

- Medications given during surgery exacerbate the symptoms of OSA such as airway obstruction, hypercarbia, and hypoxia (Coczowicz & Memtsoudis, 2021)
- OSA patients have a 2.5x increased risk for developing postoperative respiratory failure requiring ICU admission (Hai et al., 2014)
- Cost of respiratory failure is ~\$53,000 per patient (Branson, 2013 & Noble, 2018)
- Complications following surgery attributable to OSA are preventable if proper techniques are utilized
- Most recent recommendations for preop and intraop care for the surgical OSA patient population were published in 2014, with minimal emphasis on postop care

## PICOT Question

- In patients diagnosed with OSA or suspected to have OSA with a STOP-Bang score greater than 3 undergoing anesthesia, how would the development and implementation of evidence-based practice (EBP) guidelines for OSA management versus a traditional approach, affect respiratory failure rates and patients' length of stay following surgery?
- Answering yes to 3 or more questions on the STOP-Bang questionnaire indicates a high risk for OSA, in which the proposed guidelines will be implemented

-Table recreated from Nagelhout & Elisha (2017)

## Guidelines/Recommendations

- In patients scoring >3 on the STOP-Bang, a systematic review of the literature suggests to implement the following practices:
  - Utilize ETCO2 monitoring throughout the entire perioperative and postoperative period until a patient is discharged from the facility
  - No outpatient facility should perform surgery on a patient with a body mass index (BMI) > 45 kg/m<sup>2</sup>
  - Regional anesthesia consisting of spinal, epidural, or peripheral nerve blocks without the use of opioids is to be utilized for pain management during and after surgery

## Evaluation of Outcomes

- Formation of a multidisciplinary team from the following departments: surgery, anesthesia, finance, quality improvement (QI), and preoperative/postoperative nursing staff
- QI member will provide incidence of postoperative respiratory failure from a time period of 5 years prior to guideline implementation
- Guidelines are to be implemented over the course of 2 years and evaluated with meetings scheduled at 3 months, 6 months, 1 year, and 2 years following implementation
- Team members will be asked to complete a questionnaire at the beginning of each meeting to provide insight as to how the implementation process can be adjusted to help improve patient outcomes
  - Potential questions to be answered for evaluation meetings can be viewed via scanning the QR code with the reference list

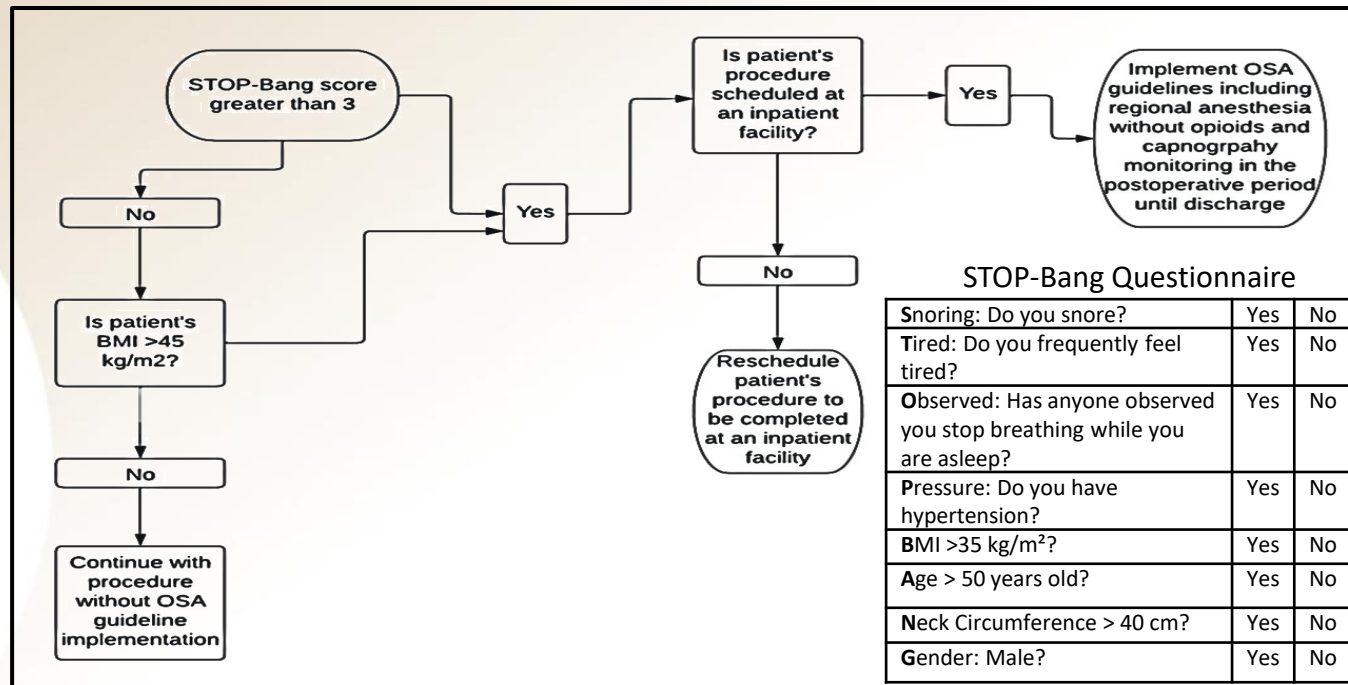
## Conclusion

- The proposed EBP guidelines may improve the safety of surgical procedures in patients who have OSA by acknowledging the risk factors associated with the disease process and taking steps to adjust the plan of care before a preventable complication occurs

Abstract, Evaluation Form, Iowa Model Revised Outline, and References



OSA Care Algorithm: To be incorporated as a care advisory in the electronic medical record to promote implementation



## STOP-Bang Questionnaire

	Yes	No
Snoring: Do you snore?	Yes	No
Tired: Do you frequently feel tired?	Yes	No
Observed: Has anyone observed you stop breathing while you are asleep?	Yes	No
Pressure: Do you have hypertension?	Yes	No
BMI >35 kg/m <sup>2</sup> ?	Yes	No
Age > 50 years old?	Yes	No
Neck Circumference > 40 cm?	Yes	No
Gender: Male?	Yes	No