Development of a Clinical Reference for Screening and Perioperative Management of Patients with OSA

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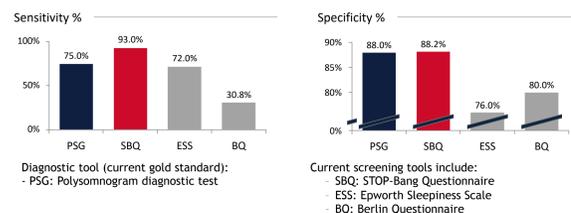
Background

- Obstructive sleep apnea (OSA) affects 22 million in the United States with 80% undiagnosed
- Undiagnosed OSA leads to high healthcare costs and various comorbidities
- Improving OSA screening can help decrease healthcare costs and provide excellent patient care

Purpose

To develop, implement and evaluate an OSA clinical reference (CR) that ensures best practice for screening and treatment recommendations for patients at risk for OSA

Literature Review

STOP-Bang Questionnaire screening tool shows highest sensitivity and specificity

Sensitivity %
100% 75.0% 93.0% 72.0%
30.8%
PSG SBQ ESS BQ

Specificity %
88.0% 88.2%
76.0% 80.0%
PSG SBQ ESS BQ

Diagnostic tool (current gold standard):
- PSG: Polysomnogram diagnostic test

Current screening tools include:
SBQ: STOP-Bang Questionnaire
ESS: Epworth Sleepiness Scale
BQ: Berlin Questionnaire

Clinical practice guidelines have been published with recommendations from the American Society of Anesthesiologists (ASA), American Academy of Sleep Medicine (AASM), and related studies on perioperative management of OSA.
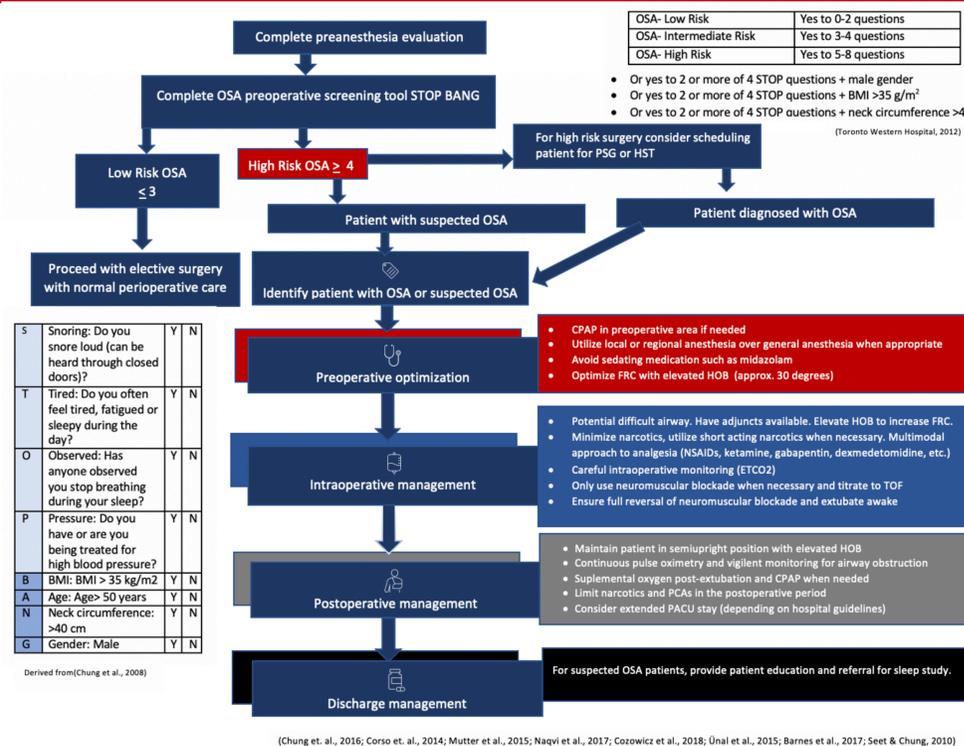
Supporting Framework

Revised Iowa Model
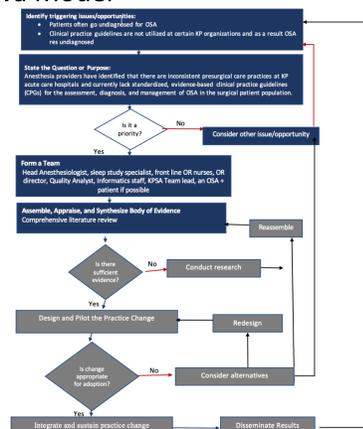
CR Development Overview

- Step 1: Perform a preanesthesia evaluation
- Step 2: Using the STOP BANG (SB) tool, determine if the patient is at a low ($\leq$ 3) or high ($\geq$ 4) risk for OSA
- Step 3: A SB score $\leq$ 3 or previously diagnosed with OSA proceed to surgery with usual care
- Step 4: A SB score $\geq$ 4 or previously diagnosed with OSA, provide ID wrist band and follow algorithm
- Step 5: Preoperative Optimization- Appropriately optimize patient for surgery and anesthesia
- Step 6: Intraoperative Management- Consider the following best practice recommendations
- Step 7: Postoperative Management- Consider the following recommendations listed below
- Step 8: Discharge Management- provide patient with information and follow up care instructions

OSA Clinical Reference

(Chung et. al., 2016; Corso et. al., 2014; Mutter et al., 2015; Naqvi et al., 2017; Cozowicz et al., 2018; Ünal et al., 2015; Barnes et al., 2017; Seet & Chung, 2010)

Methods

Setting: Kaiser Permanente Fontana Medical Center in San Bernardino County, CA

Sample: Patients >18 y/o, ASA I-III, undergoing general anesthesia at FMC between February 2020 through May 2020 *(Excluding patients diagnosed with OSA, pending a sleep study, emergent surgery, or non-operating room anesthesia)*

Measures:

Outcome measure	Compliance rate
<u>The number of patients screened with the new CR</u>	<u>The number of patients referred to the sleep clinic</u>
The total number of patients having surgery	The total number of qualifying surgical patients

Barriers and Limitations

Covid-19 Pandemic

- Unable to collect baseline and post-implementation data
- Skewed data due to cancelation of elective cases
- Altered workflow for providers
- Inappropriate time to implement new knowledge and protocols

Recommendations

Implementation:
- Educational video at department-wide educational meeting
- Pre-/Post- test to evaluate baseline and post-educational knowledge
- Department OSA champion

Data Collection:
- Identify patients who should be screened for OSA
- Baseline spot chart audit followed by retrospective chart audits every 2 weeks post-implementation.
- Results displayed in Shewhart charts using data collection tool to show utilization compliance

Discussion

- Literature supports a brief and organized method of disseminating evidence in order to gain use

- A succinct and easy to follow CR algorithm provides clinicians with a step-by-step approach to patient centered management of conditions such as OSA with the same level of rigor as a CPG

- The use of a flow-chart-like algorithm has been shown to improve learning and adherence to evidence-based practice