THE QUEEN'S MEDICAL CENTER
Honolulu, Hawai'i

Don't Ignore My Snore: Reducing Perioperative Complications Related to OSA

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AMERICAN NURSES CREDENTIALING CENTER

BACKGROUND

- 32% of patients were high-risk for Obstructive Sleep Apnea (OSA) based on the STOP-Bang screening tool per a 3-month random chart audit of 25 surgical patient records (October - December 2011)
- 27% of patients at high-risk for OSA experienced adverse postoperative events including oxygen desaturation, re-intubation, cardiac arrhythmias, and myocardial infarction per a 6-month chart audit of 135 patient records (January - September 2012)

PURPOSE

To promote patient safety with the development of an evidence-based guideline for the management of adult surgical patients identified as high-risk for OSA.

METHOD

Inter-disciplinary team created an OSA guideline and algorithm of care
- Utilized the Iowa Model of Evidence-Based Practice to Promote Quality Care
- Critiqued and synthesized over 40 articles researched in PubMed from 2016-2013
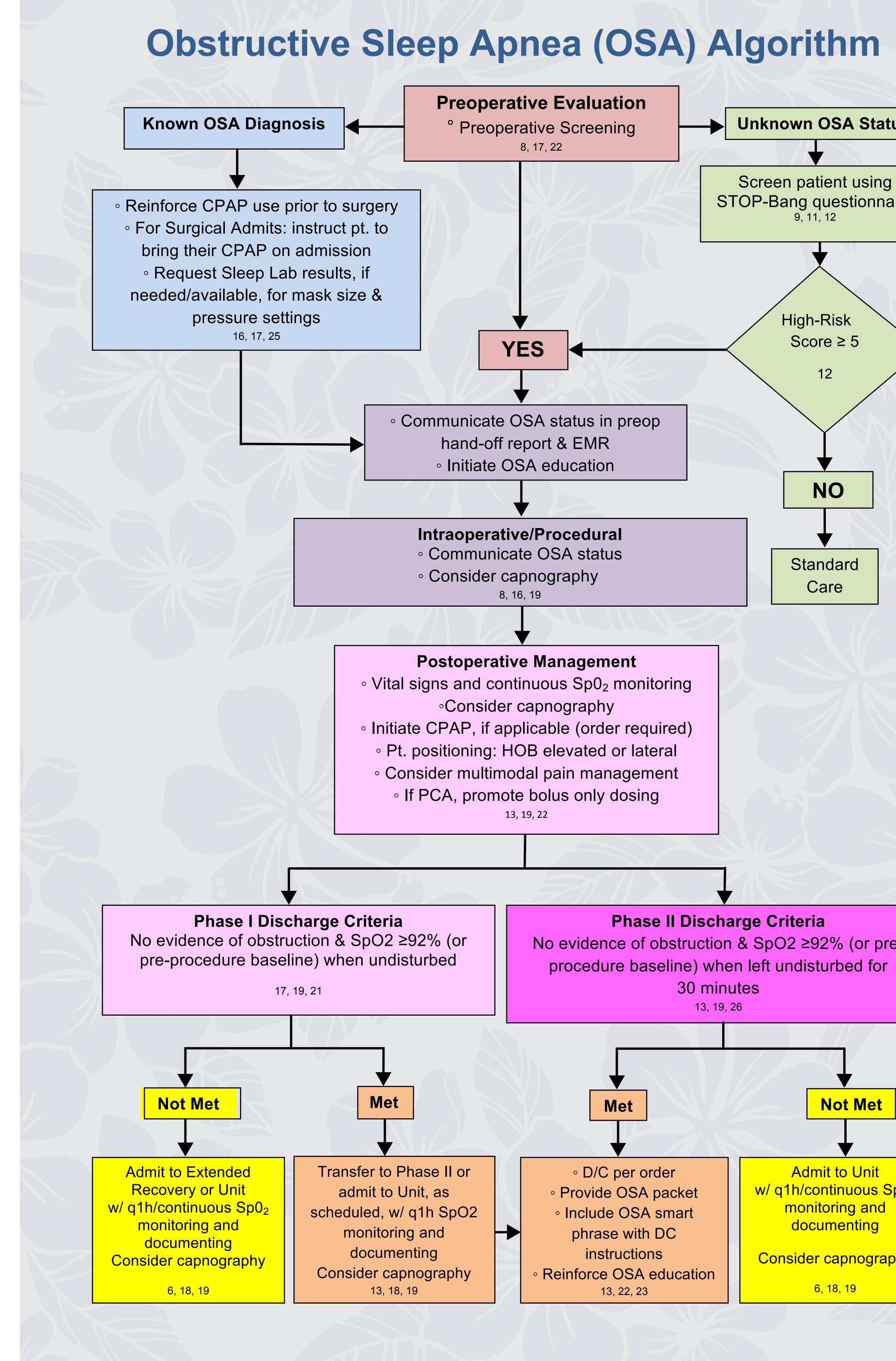- Communicated with organizational committees

Nursing care plans created for diagnosed and high-risk for OSA based on the guideline and process developed for integration into the electronic medical record

Patient education: discharge instructions and handout

Staff education: OSA guideline self-learning module, change champions on the units, unit-based meetings, nursing grand rounds, emails, huddles

Chart Audit completed to assess for cardiopulmonary complication for 24 hours post anesthesia

GUIDELINE ALGORITHM

Obstructive Sleep Apnea (OSA) Algorithm

Preoperative Evaluation
° Preoperative Screening
8, 17, 22

Known OSA Diagnosis

Unknown OSA Status

° Reinforce CPAP use prior to surgery
° For Surgical Admits: instruct pt. to bring their CPAP on admission
° Request Sleep Lab results, if needed/available, for mask size & pressure settings
16, 17, 25

Screen patient using STOP-Bang questionnaire
9, 11, 12

YES

High-Risk Score ≥ 5
12

NO

° Communicate OSA status in preop hand-off report & EMR
° Initiate OSA education

Standard Care

Intraoperative/Procedural
° Communicate OSA status
° Consider capnography
8, 16, 19

Postoperative Management
° Vital signs and continuous SpO_2 monitoring
°Consider capnography
° Initiate CPAP, if applicable (order required)
° Pt. positioning: HOB elevated or lateral
° Consider multimodal pain management
° If PCA, promote bolus only dosing
13, 19, 22

Phase I Discharge Criteria
No evidence of obstruction & SpO2 ≥92% (or pre-procedure baseline) when undisturbed
17, 19, 21

Phase II Discharge Criteria
No evidence of obstruction & SpO2 ≥92% (or pre-procedure baseline) when left undisturbed for 30 minutes
13, 19, 26

Not Met

Met

Met

Not Met

Admit to Extended Recovery or Unit w/ q1h/continuous SpO_2 monitoring and documenting Consider capnography
6, 18, 19

Transfer to Phase II or admit to Unit, as scheduled, w/ q1h SpO2 monitoring and documenting Consider capnography
13, 18, 19

° D/C per order
° Provide OSA packet
° Include OSA smart phrase with DC instructions
° Reinforce OSA education
13, 22, 23

Admit to Unit w/ q1h/continuous SpO_2 monitoring and documenting Consider capnography
6, 18, 19

NURSING CARE PLAN

Patients Identified as High-Risk for OSA

Perioperative STOP-Bang screening tool > 5 of 8 risk factors (Undiagnosed)
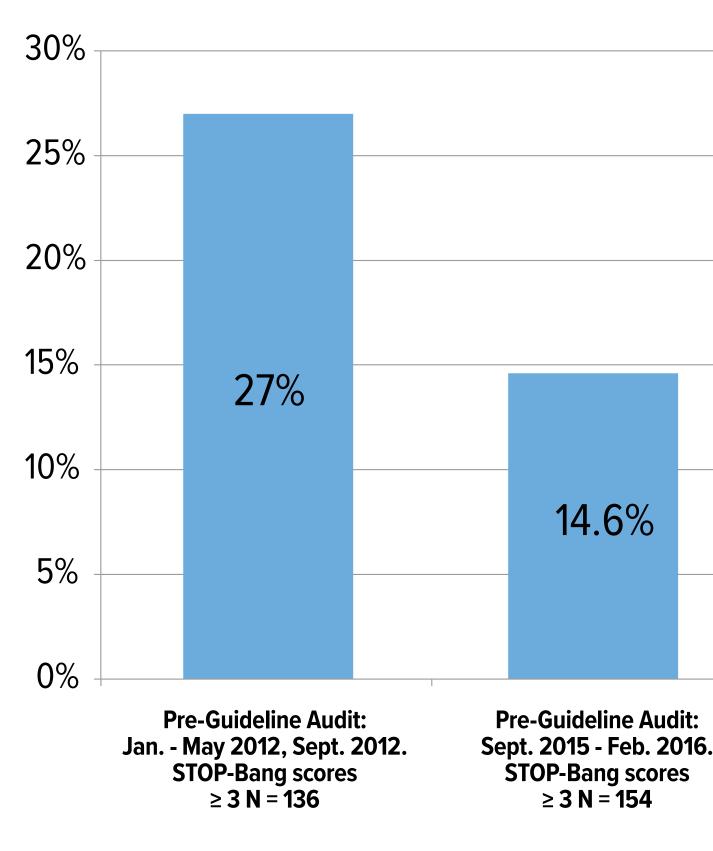Nursing Diagnosis: Ineffective Breathing Pattern

1. Communicate High STOP-Bang score during Time-Out & transfer of care
2. Positioning: HOB elevated or lateral position
3. Pulse oximetry documentation every hour x 24 hours post-anesthesia time or until discharge criteria met
4. Consider capnography monitoring
5. If PCA ordered, promote bolus dosing only and multimodal pain control
6. Discharge education and handout

Outcome: Maintain airway patency and oxygen saturation within normal limits

Patient identified High-Risk for OSA Discharge Instructions

You may be at risk for an ineffective breathing pattern. This condition may cause you to snore or hold your breath while sleeping. You may experience daytime sleepiness, irregular heartbeats, and added stress to your body. To limit these problems, please refer to the following instructions:

- Sleep on your side or upright with 2-3 pillows if possible.
- Take your medication as your doctor has directed.
- Use caution when taking medications that may make you sleepy, like pain pills and/or sleeping pills.
- Follow up with your regular doctor.

OUTCOME

Figure 7: Pre/post Audit of Patients Identified as High-Risk for OSA with postoperative complications

	Pre-Guideline Audit: Jan. - May 2012, Sept. 2012. STOP-Bang scores ≥ 3 N = 136	Pre-Guideline Audit: Sept. 2015 - Feb. 2016. STOP-Bang scores ≥ 3 N = 154
	27%	14.6%

This OSA guideline and nursing care plan specific to OSA was effective in improving patient outcomes.

Reference:

Lemus L, McMullin B, Balinowski H. Don't Ignore My Snore: Reducing Perioperative Complication of Obstructive Sleep Apnea. Journal of PeriAnesthesia Nursing, 2016:ppI:1-8. http://dx.doi.org/10.1016/j.jopan.2016.08005

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Chung F, Subramanyam R, Liao P, Sasaki E, Shapiro C, Sun Y. High STOP-Bang Score indicates a high probability of obstructive sleep apnea. Br J Anesth, 2012; 108:768-775