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Obstructive Sleep Apnea Surgical Screening Protocol: A Journey to Success



Linda Lakdawala DNP, RN, CPAN
lakdawalald@upmc.edu

Flow Diagram Pathophysiology of Obstructive Sleep Apnea / Sedation

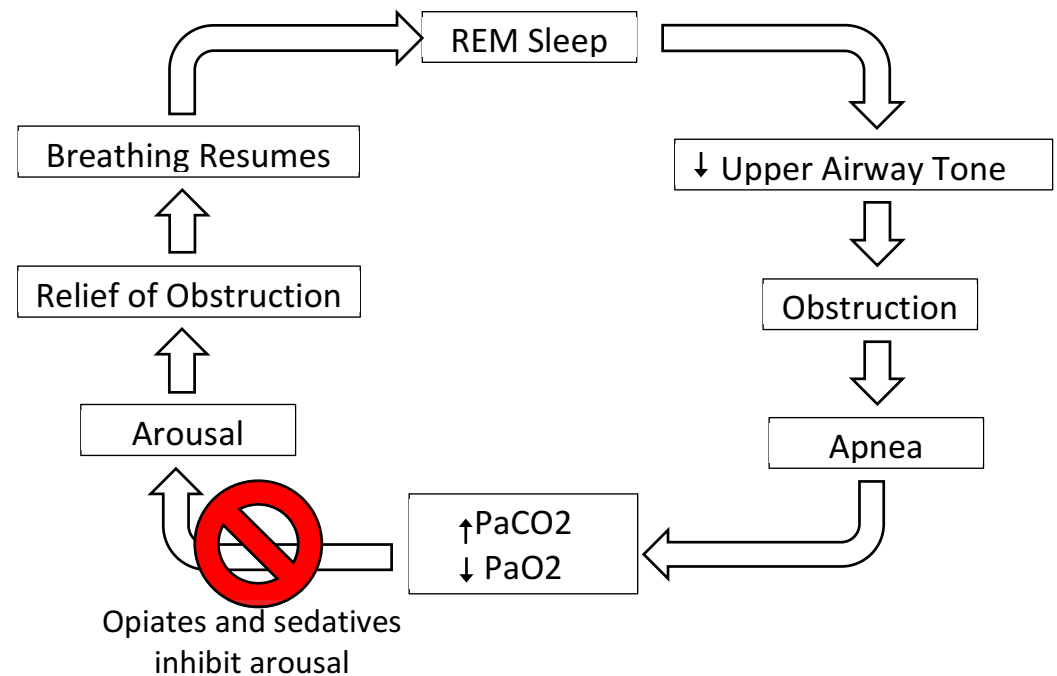


Figure 1: Respiratory pattern is inhibited with opiates and sedatives (Finkel, Saager, Becker, & Tymkew, 2006).

Timeline

2008 -2011

QI project #1

STOP- Bang scores > 3

1st place in Quality Fair:
Safety

Published in JOPAN: 2/2011

2011: 1st place safety
category in JOPAN

2012 -2015

Lead OSA perioperative
UPMC Health System team

Dr. Stollo: Dir. Sleep
Medicine

QI project #2: Pagers to
alert for respiratory
depression (pulse oximetry)

2016 - present

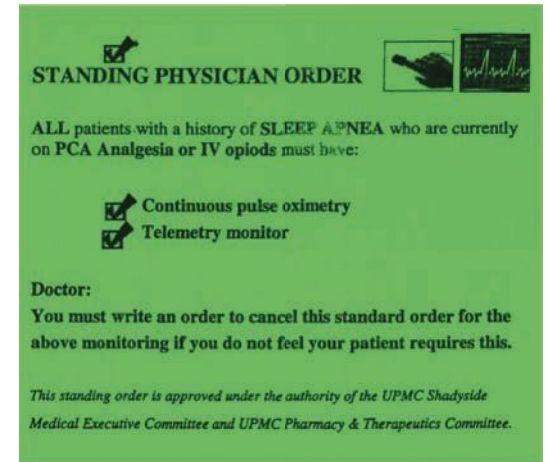
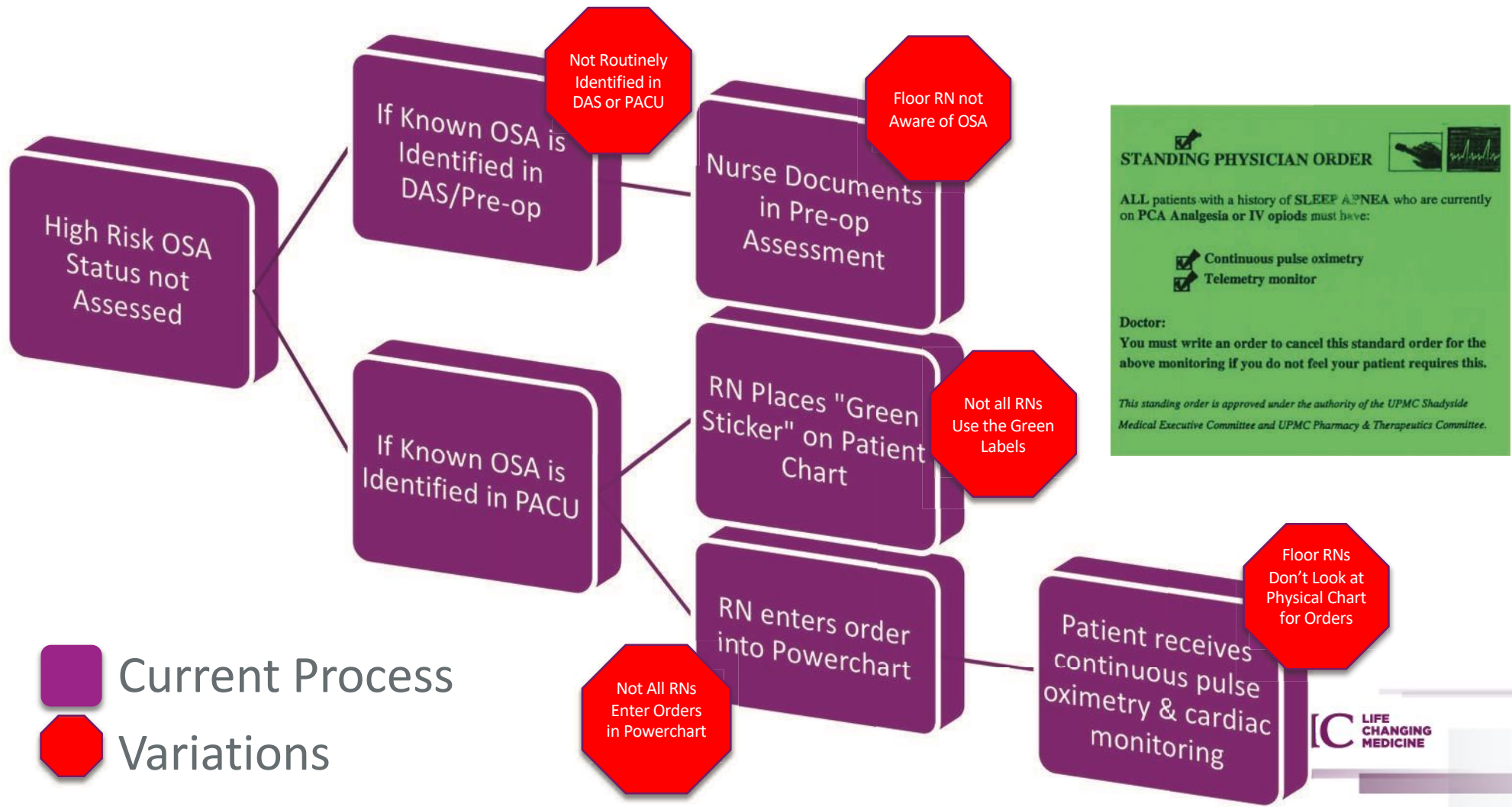
QI project #3

STOP- Bang scores ≥ 5 ;
Added end-tidal CO₂
monitoring (Capnography)

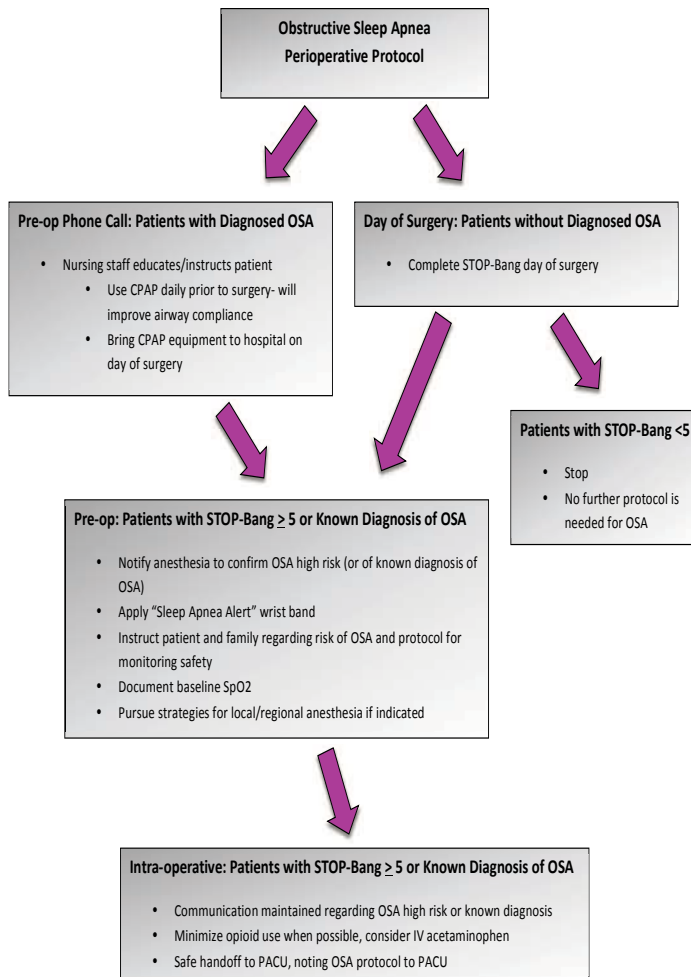
Published in JOPAN:
12/2018

Stop-BANG screening:
electronic health record

Current Process & Variations Identified



New Process



PACU OSA Protocol

- Monitor vital signs, include cardiac monitor and continuous pulse oximetry
- Head of bed > 30 degrees; place patient in lateral, lateral recumbent, or sitting position; avoid supine position unless clinically indicated
- Observe patient undisturbed x 30 minutes once assessed and stable
 - RN to document the 30 minute observation was completed and note the outcome
- Extend PACU observation in the presence of witnessed episode of obstructive apnea
- Post-op OSA analgesia recommendations: multi-modal analgesia, half dose of opioids; IV acetaminophen every 6 hours x 48-72 hours; non-steroidal agents, tramadol, clonidine, COX2 inhibitors, ketamine, gabapentin and dexmedetomidine
- If PCA indicated: no basal rate, demand dose only
 - Must monitor ETCO₂ for OSA or high risk OSA patients
- CPAP/BPAP use early in the postoperative period will reduce respiratory effort
- RN documents safe patient hand-off to receiving unit, noting OSA protocol
- PACU RN gives verbal report to receiving unit noting care of the OSA patient

Inpatient Department

- Cardiac monitor, continuous pulse oximetry for 48 hours or while receiving intravenous opioids
- All PCA patients with OSA or high risk for OSA must be monitored with continuous end tidal CO₂
- Notify respiratory therapy regarding high risk for OSA, CPAP set up if necessary
- Begin OSA education with patient and family regarding risks of postoperative respiratory depression
- Show Emmi video education for OSA
 - High risk of OSA: General OSA video
 - Diagnosed OSA patients: CPAP video
- Give patient Home Sleep Study referral to be given to Primary Care Physician, at time of discharge

Same Day Surgery (Phase II)

- Communication process follows through with discharge department
- HOB > 30 degrees; place patient in lateral, lateral recumbent, or sitting position; avoid placing patient in supine position unless clinically indicated
- Monitor patient a minimum of two to six hours
- Instruct patient and family regarding potential for OSA and postoperative respiratory depression risks
- Room air saturation should (SpO₂) return to baseline
- Return to baseline consciousness
- No evidence of hypoxia when patient is left undisturbed for 30 minutes
- Observe patient while asleep and unstimulated to establish room air SpO₂ remains at baseline
- Admit to overnight observation bed if unable to maintain SpO₂ and/or show signs of hypoxia or obstruction
- Nursing staff educates/instructs patient and family regarding risk for OSA
- Instruct patient and family regarding importance of HOB elevated and or using a reclining chair for rest periods or at sleep for two days
- Warn patient and family regarding the continued risks of postoperative respiratory depression at home
- Home Sleep Study referral at time of discharge

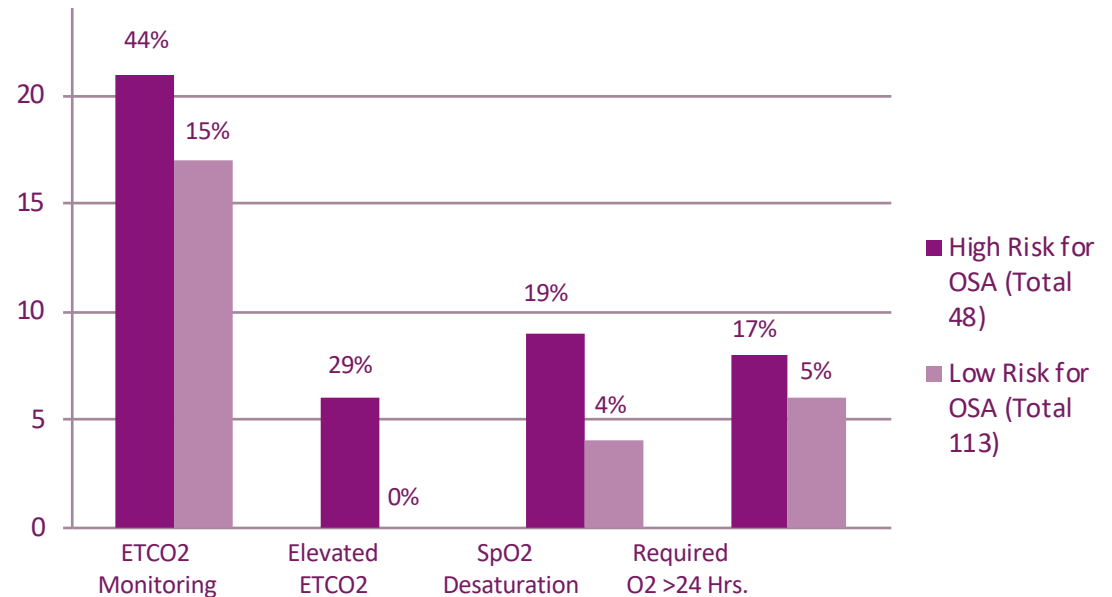
Outcome Results

- For both high risk & low risk groups
 - Condition C: 0
 - Condition A: 0
 - Naloxone use: 0

High risk: 5 or greater

Low risk: less than 5

Post-Operative Monitoring



Electronic Health Record

- ★ Beta Blockers
- ★ Pre-op Checklist
- OSA Screening (S
- CJD Screening Tr
- WAKE Score v2

Correct Date/Time?
OSA Screening (STOP-BANG)

These questions to be completed by Perioperative/Procedure Nurses.

Patient reports diagnosis of sleep apnea
 Yes
 No
 Unable to communicate or emergent
 N/A

Do you snore loudly? Yes No

Do you often feel tired, fatigued or sleepy during the day? Yes No

Has anyone observed you stop breathing during sleep? Yes No

Do you have or have you been treated for high blood pressure? Yes No

BMI greater than 35? Yes No

Age >50 years old? Yes No

Neck Circumference: Males: >17 inches or 43 cm
Females: >16 inches or 41cm Yes No Unable to assess

*Right click in the above box for reference picture

Measure at the level of the thyroid cartilage ("Adam's Apple")

Male Gender Yes No

*Select N/A if patient is under 18 years old or an obstetrical patient

Last 2 Dosing Weights (this visit)		
Date	Weight	Measured
07/17/2018	106.60 kg	Yes

Last 5 Actual (Today's) Weights (this visit)	
Date	Weight
07/20/2018	107.4 kg
07/18/2018	186.7 kg

Last 2 Heights (this visit)		
Date	Height	Measured
07/17/2018	187.9 cm	Yes

Most recent BMI (this visit)	
Date	BMI
07/17/2018	30.2

Total

In Progress



Safety Net

- The STOP- Bang screening tool and perioperative protocol promotes best practice.
- Good catch for safe patient care.
- The DNP prepared nurse is a change agent

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