Identifying Patients at Risk for Obstructive Sleep Apnea Using the STOP-BANG Questionnaire

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Purpose
The purpose of this evidence based project was to optimize patient safety through improved screening and education for patients at risk for Obstructive Sleep Apnea (OSA) in the Center for Preoperative Evaluation (CPE).

Background
- With the change to a new Electronic Health Record, the OSA screening tool was no longer available. Clinical nurses in CPE wanted to implement a new screening process to ensure patients with OSA were identified to optimize peri and postoperative safety.
- Obstructive sleep apnea (OSA) is prevalent, often undiagnosed, and undertreated.
- An estimated 1 in 4 US adults suffer from OSA and 90% are undiagnosed (Chung, Yuan, & Chung, 2008; The Joint Commission, 2015).
- OSA can contribute significantly to peri-operative complications (Joint Commission, 2015).
- Diagnosis of OSA is associated with a two to four fold increase in postoperative complications (Kaw, Pasupuleti, Walker, Ramaswamy, & Foldvary-Schafer, 2012).

Methodology/Process
Educational Intervention
- All clinical nurses (n=13) and nurse practitioners (n=12) were educated about OSA and the use of the STOP-BANG Tool to assess risk during small group educational sessions.
- Pre and post test data was collected to evaluate the change in knowledge.

Patient Screening
- At every CPE visit the STOP-BANG tool was completed in the electronic health record (EHR).
- Patients with a score of ≥3 received education on general health, peri-operative risk for OSA, the importance of follow-up with PCP, benefits of appropriate treatment, and safety after surgery.

<table>
<thead>
<tr>
<th>STOP-BANG Questions</th>
<th>Responses</th>
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<tbody>
<tr>
<td>Do you snore loudly?</td>
<td>Yes</td>
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<tr>
<td>Do you often feel fatigued or tired after your sleep?</td>
<td>Yes</td>
</tr>
<tr>
<td>Has anyone ever observed you stop breathing in your sleep?</td>
<td>Yes</td>
</tr>
<tr>
<td>Do you have or are you being treated for high blood pressure?</td>
<td>Yes</td>
</tr>
<tr>
<td>BMI &gt; 35kg/m2?</td>
<td>Yes</td>
</tr>
<tr>
<td>Age older than 50 years old?</td>
<td>Yes</td>
</tr>
<tr>
<td>Neck circumference &gt; 17inches male, 16 inches female?</td>
<td>Yes</td>
</tr>
<tr>
<td>Gender male?</td>
<td>Yes</td>
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Risk scoring for the general population
- OSA - Low Risk: 0 – 2
- OSA - Intermediate Risk: 3 - 4
- OSA - High Risk: Yes to 5 - 8

Outcomes
Educational Intervention
- Pre - post test data analysis showed a mean increase of 2.11 in the knowledge test score.

Patient Screening
- Compliance with completing the STOP-BANG screening tool was approximately 89%.
- OSA Screening Results:
  - Prior to the educational intervention 11.02% of patients were identified as increased risk for OSA.
  - After the educational intervention:
    - 36.5% of patients identified with a score of >3
    - 21.7% of patients had a score of 5-8

Implications
STOP-BANG screening is now integrated into usual care in CPE.

Education and use of the STOP-BANG Tool has been expanded to the Preoperative holding area, Post Anesthesia Care Unit and the surgical inpatient unit.

Patients are being educated on their risk factors, the need to follow-up with their PCP, and interventions to reduce risk of post-operative events.