SCOPE: Physicians, Licensed Allied Health Providers, RNs and Respiratory Therapists in all PeaceHealth patient care facilities.

PURPOSE: To reduce the post-operative risk of patient harm from known or suspected Obstructive Sleep Apnea (OSA) in patients having Total Joint Replacement surgery.

POLICY: All patients going to surgery for Total Joint Replacement are screened preoperatively for OSA. Patients with known or suspected sleep apnea are evaluated and monitored as outlined below.

Regions may have more prescriptive processes, as defined in department and region-wide policies, so long as those processes do not conflict with or attempt to supersede the requirements of this system-wide policy.

REQUIREMENTS:

1. Screening.
   1.1. If the patient has a documented history of sleep apnea, OSA screening is not necessary. The diagnosis is recorded in Centricity and the patient is placed on the OSA Monitoring Protocol postoperatively.
   1.2. If the patient does not have a previous sleep evaluation or documented history, screening is performed using the STOP-BANG Screening Tool.
   1.3. If the STOP-Bang Screening Tool has not been completed within 4 weeks prior to surgery, it is completed preoperatively on the day of surgery.

2. Sleep Apnea Evaluation.
   2.1. If the STOP-Bang score is <3, proceed with surgery as usual.
   2.2. If the STOP-Bang score is ≥ 3, Surgeon and Anesthesiologist are notified to determine whether a formal sleep apnea evaluation is indicated prior to Total Joint Replacement surgery.
      2.2.1. If a sleep apnea evaluation is completed and an oral appliance or positive airway pressure device has been prescribed, therapy should be initiated prior to surgery and the patient rescheduled for surgery after at least a two week period of treatment if possible.
2.2.2. On admission for surgery, the patient should bring their device with them and will be placed on the OSA Monitoring Protocol for the duration of their hospital stay.

2.2.3. Post-op patients transitioned to a non-acute extended length of stay status can be removed from continuous monitoring if the patient is off narcotics, or has transitioned to oral narcotics and has no documented desaturations.

2.2.4. If the patient is unable or unwilling to complete a sleep evaluation prior to Total Joint Replacement surgery, the Anesthesiologist uses clinical criteria, such as co-morbid conditions, to decide with the Surgeon and patient whether to postpone the case or to proceed with increased level of postoperative monitoring and care.

2.2.5. If the Total Joint Replacement surgery proceeds, the patient is monitored during their PACU stay using the PACU 30-Minute Respiratory Events Criteria.


3.1. All post-operative Total Joint Replacement patients with suspected but undiagnosed OSA will be monitored for recurring respiratory events during their PACU stay using the PACU 30-Minute Respiratory Events Criteria.

3.2. Total Joint Replacement patients exhibiting any PACU Respiratory Events are evaluated by Respiratory Therapy for an APAP device. These patients are considered higher risk for post-op OSA or hypoventilatory problems.

3.3. Total Joint Replacement outpatients who exhibit PACU Respiratory Events should be considered for Inpatient admission.

4. OSA Monitoring

4.1. Inpatient

4.1.1. All post-operative Total Joint Replacement patients are placed on a centrally monitored or nurse pager/phone alerted continuous oximetry monitor for their entire post op stay, whenever possible, if they have known OSA, had a PACU Respiratory Event, had a STOP-Bang score ≥ 5, or if ordered by a physician.

4.1.2. The threshold for oxygen saturation nurse alarm is set at 88%, minimum.

4.1.3. Admit patient to nursing unit on room air or at their baseline home oxygen requirement in patients that require home oxygen.

4.1.4. Position patient with head of bed elevated > 30 degrees or in a lateral position rather than supine, unless contraindicated.
4.1.5. Patients who have been shown to benefit from a positive airway pressure device shall be treated either via their own home device or via an APAP device whenever they are unattended, sleeping or have a sedation score of greater than 2 (Modified Wilson Sedation Scale).

4.1.5.1. Treatment may be interrupted for activities including eating, toileting or participating in physical therapy, or as part of a trial to see if the patient is able to be safely discharged without the assistive device.

4.1.5.2. If the patient declines to wear the device, every effort should be made to ensure that device discomfort is not contributing to poor compliance.

4.1.5.3. Patient declination to wear the device is documented in the nursing or respiratory therapy record.

4.2. **Outpatient**

4.2.1. All post-operative Total Joint Replacement outpatients with either known or suspected OSA are kept on continuous pulse-oximetry monitoring for a minimum of 90 minutes after the last dose of either oral or IV narcotic, sedative, or anesthesia administration.

4.2.2. Outpatients spend the final 30 minutes before discharge:

   4.2.2.1. In a non-stimulating environment;

   4.2.2.2. On room air (or at their baseline home oxygen requirement in patients that require home oxygen), with the patient maintaining an oxygen saturation within 2% of their baseline pre-operative saturation and respiratory rate ≥ 10; and

   4.2.2.3. With patient able to maintain own airway.

4.2.3. If patients scheduled as outpatients exhibit PACU Respiratory Events, they should be considered for Inpatient admission.

5. **Post–Operative Follow Up.** Patients who have been newly identified with a positive sleep apnea screen, or who exhibited PACU Respiratory Events, will be referred back to their primary physician for follow up and consideration of additional formal sleep testing as an outpatient.

**DEFINITIONS:**

1. The term “APAP” refers to the automatic positive airway pressure device used in the treatment of sleep apnea and other breathing problems.
2. The term “Modified Wilson Sedation Scale” refers to a four level scale used to measure sedation. The levels are:
   1 – Alert, oriented, easy to arouse;
   2 – Occasionally drowsy, easy to arouse (example: by voice);
   3 – Frequently drowsy, difficult to arouse (e.g. sternal rub or painful stimulus), confused; and
   4 – Somnolent, unable to arouse.

3. The term “Obstructive Sleep Apnea (OSA)” refers to repetitive pauses in breathing (apnea) during sleep due to obstruction of the upper airway. OSA is considered a major risk factor for perioperative adverse events for Total Joint Replacement surgery patients.

4. The term “PACU 30-Minute Respiratory Event” refers to any one of four events that might occur during any 30-minute period in PACU. An event can be:
   1. Oxygen saturation < 90% (3 episodes in 30 minutes);
   2. Bradypnea < 8 breaths (3 episodes in 30 minutes);
   3. Apnea > 10 seconds (1 episode in 30 minutes); or
   4. Pain sedation mismatch - patient reports inadequate pain relief despite a sedation score > 2 (Modified Wilson Sedation Scale).

REFERENCES:

Articles & Books:


**Job Aids & Tools:**
- STOP-BANG Screening Tool
- U.S. Department of Health and Human Services. Body Mass Index Table
- Neck Circumference Measurement, Military

**HELP:** For questions about this policy, or assistance in understanding your obligations under this policy, please contact your Supervisor or Director of Patient Care.

**End of Policy**

*The last page of this policy document contains approval, review and revision information only.*
**CREATION (Original Version):**

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