Riding the (end) Tidal Wave to CO2 Monitoring:
Using Capnography for Obstructive Sleep Apnea Following Anesthesia

Team Leader: Kathryn Scully MSN RN CCRN CAPA
Inova Fairfax Medical Campus, Falls Church, Virginia
Team Members: Sally Schermer MBA BSN RN CCRN CPAN CAPA, Erin Sever BSN RN, Adrian Jones BSN RN, Parul Shah RRT-NPS ACCS, Catherine Hodgkins MS CRNA, Elspeth Stanley MS CRNA, Jessica Dunn BSN RN DNP Student–George Mason University, Jennifer Rickerby MSN RN DNP Student–George Mason University

Background Information related to Problem Identification: Almost 25% of adult patients entering the hospital for elective surgery have obstructive sleep apnea (OSA), with the majority of these patients (>80%) undiagnosed at the time of surgery (Chest, 2010). At our institution, approximately 150 surgeries occur each day. This large surgical population has hidden, undiagnosed OSA patients that are at increased risk for respiratory complications.
To safeguard these patients, we implemented American Society of PeriAnesthesia Nursing (ASPAN) practice recommendation #10 on three perianesthesia units after we upgraded our monitors to provide ETCO2 monitoring.

Objective of Project: The intent was to educate and implement OSA screening preoperatively and use capnography monitoring in the post anesthesia care unit (PACU), with the end goal of making this the standard of practice preoperatively and in all PACUs across our institution.

Process of Implementation: A multidisciplinary team provided extensive staff education employing a variety of teaching methods. Using the STOP-Bang screening tool, preoperative patients were assessed for OSA, with 5 or more positive responses indicating high risk for OSA. The patient received an identification band, OSA staff alert sign, and additional education on what to expect in recovery. In the PACU, capnography was applied and the patient monitored closely for hypoventilation. A PACU audit tool was used to track use of capnography, identification of hypoventilation events and responsive nursing interventions.

Statement of Successful Practice: Perianesthesia nurses were able to incorporate OSA screening and capnography monitoring into their practice. They quickly identified hypoventilation events via capnography and intervened to prevent respiratory complications. This process is now utilized in all six PACUs at our hospital and we are working to expand its usefulness to all procedural areas where anesthesia is administered.

Implications for Advancing the Practice of Perianesthesia Nursing: Over 90 nurses participated in this project and 100% of those who responded to a survey, said it improved their perianesthesia practice. Using critical thinking, nurses applied capnography to patients beyond the OSA population, and now employ its usefulness to additional PACU patients. Enthusiasm for this project inspired research in the Pediatric PACU to evaluate OSA screening tools for their patient population.