CUTANEOUS CAPNOGRAPHY IN THE PACU: IMMEDIATE ASSESSMENT OF RESPIRATORY STATUS EMERGING FROM ANESTHESIA
Team Leader: Gail Davis, MSN, ACNS-BC, CCRN
Barnes-Jewish Hospital, St. Louis, MO
Team Members: Elizabeth Cox, MSN, CMSRN; Rachel Stratman-Wolf, Clinical Pharmacist;
Colleen Becker, MSN, CCRN; Director Perioperative Services

**Purpose:** Transcutaneous measurement of carbon Dioxide (TrCO2) is a non-invasive method of estimating arterial pressure of carbon dioxide (PaCO2). Side-stream capnography is common in assessing ventilation but its ability to estimate hypoventilation is affected by patient factors. Measurement of oxygen saturation is a standard of care but is a poor indicator of early hypoventilation. Our Perianesthesia Care Unit (PACU) recovers over 100 surgeries daily. We wanted to assess the use of TrCO2’s ability to provide early recognition and treatment of airway compromise to increase patient safety.

**Discussion:** Transcutaneous capnography was utilized, and trends recorded, on 50 patients admitted to PACU. Documentation of concurrent use of side stream CO2 monitoring was obtained. Arterial blood gases were not routinely performed. If ordered, results were included in the data. Comparisons were made between all results available. It was noted on 12 patients that management of care was altered due to the TrCO2 measurement. One patient arrived with a SpO2 saturation of 98%, 40% FM, drowsy but arousable, and a capnography level of 99. Arterial blood gas confirmed the results. BIPAP was initiated and successfully thwarted intubation. Staff caring for known obstructive sleep apnea patients were diligent at stimulating patients if TrCO2 levels increased.

**Results:** Non-invasive cutaneous carbon dioxide monitoring is more accurate in detecting hypercarbia in patients who were hypoventilated than nasal EtCO2 patients. Using TcCO2 monitoring provides PACU nurses the ability of early recognition and treatment of airway compromise in patients recovering from anesthesia. TcCO2 provides a quick, reliable method for assessment.