**Increasing the Utilization of End Tidal Carbon Dioxide (EtCO2) Monitoring in PACU**

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**Background Information:** Literature shows that monitoring end tidal carbon dioxide (EtCO2) in at-risk patients can facilitate early detection of ventilatory compromise. Perceived lack of knowledge about how to identify patients in need for monitoring and how to interpret EtCO2 data contributed to underutilization of this valuable monitoring tool by our PACU nurses.

**Purpose and Objectives of Project:** The purpose of this project was to increase EtCO2 monitoring in patients who meet established criteria. Specific aims were to: a) Increase PACU nurses' awareness of value of capnography monitoring; b) Increase nurses confidence in their ability to interpret EtCO2 waveforms and values; c) Increase the number of EtCO2 monitored patients by at least 50% compared to 2019; and d) Document the number of ventilatory events detected by capnography, and were treated, before any changes in SpO2 were detected.

**Process of Implementation:** This was a two-phase project. In phase one, we collected baseline data from the electronic medical record (EMR) and documented the number of patients who were monitored using EtCO2 over the past 12 months. We also documented the number of at-risk patients who did not receive EtCO2 monitoring. Before implementation, all PACU nurses took a pretest to determine baseline knowledge. PACU nurses were educated on EtCO2 monitoring criteria, identifying at-risk patients, interpreting and documenting EtCO2 monitoring values/waveforms.

Phase two of the project included daily data collection on all patients monitored with EtCO2. Results showed that EtCO2 monitoring increased from 0.4% (n=30) of patients in 2019 to 5.4% (n=203) of patients during the study period. In 95% of the reported respiratory events, the PACU RN intervened based on the EtCO2 reading prior to any change in SpO2.

**Statement of Successful Practice:** This practice change promotes safety by providing an evidence-based, objective tool to assist in early detection of post-operative ventilatory compromise. Monitoring EtCO2 may reduce transfer to a higher level of care and may reduce PACU/hospital length of stay. PACU nurses were able to intervene earlier based on ETCO2 readings/waveforms.

**Implications for Advancing the Practice of Perianesthesia Nursing:** EtCO2 monitoring enables advanced assessment capabilities and assists the perianesthesia nurses to safely manage patient care while optimizing ventilatory status.