



ASPAN

American Society of PeriAnesthesia Nurses

Clinical Practice: Frequently Asked Question

Q: Is Capnography required in Phase I PACU?

A: ASPAN Standards

The American Society of PeriAnesthesia Nurses (ASPAN) does not currently have a practice recommendation requiring continuous monitoring of etCO₂ in the Phase I PACU. “Practice Recommendation, Components of Assessment and Management for the Perianesthesia Patient,” states that vital signs are monitored, including “end-tidal CO₂ (capnography) monitoring if available and indicated,” and for “initial and ongoing assessment of airway patency, respiratory status, breath sounds and oxygen saturation”.¹

ASA Standards

Monitoring etCO₂ has long been a standard of care for anesthesiologists delivering general anesthesia for intubated patients in the operating room. This practice has expanded to areas outside of the operating room. The American Society of Anesthesiologists (ASA) recently updated their standards for Basic Anesthetic Monitoring.² The Standards state that “Every patient receiving general anesthesia shall have the adequacy of ventilation continually evaluated.....continual monitoring for the presence of expired carbon dioxide shall be performed unless invalidated by the nature of the patient.”³ The ASA goes on to state that “during moderate or deep sedation the adequacy of ventilation shall be evaluated by continual observation of qualitative clinical signs and monitoring for the presence of exhaled carbon dioxide.”³ This applies to nurse monitored sedation as well.² The ASA state in the Standards for Postanesthesia Care that “particular attention should be given to monitoring oxygenation, ventilation, level of consciousness and temperature.”⁴ The ASA does not specifically state that capnography is required in the post anesthesia care unit, but that ventilation is monitored. The most effective way to monitor ventilation is through capnography.

Future of Capnography

Capnography can be valuable in the post anesthesia care unit for heavily sedated patients, those receiving high doses of opioids, and those with diagnosed or undiagnosed obstructive sleep apnea. “Practice Recommendation, Obstructive Sleep Apnea in the Adult Patient,” in the 2023-2024 Perianesthesia Nursing Standards, Practice Recommendations and Interpretative Statements, discusses Phase I and II care as including “routine monitoring and the addition of capnography when available” for obstructive sleep apnea patients. Practice Recommendation, Prevention of Unwanted Sedation, notes phase I and

II recommendations as including “measurement of end-tidal carbon dioxide (ETCO₂ and capnography) can be a useful indicator for respiratory depression in high-risk patients”.¹ “Patients who are at high risk for postoperative respiratory failure may benefit from continuous capnography monitoring in the PACU. Capnography monitoring may decrease PACU length of stay and provide earlier detection of pending respiratory depression or failure than pulse oximetry alone.”⁴ In situations where the patient’s respiratory status has been compromised, capnography monitoring and assessment may prompt the PACU nurse to intervene for patient safety as the patient transitions from PACU care. He/she may advocate for a higher level of care when the patient is discharged from the PACU.

Capnography may also be useful for a period of time after the patient leaves the PACU. Post anesthesia nurses are aware that medical/surgical floors have increased nursing workloads which limit the frequency of the nurse’s presence at the bedside. A trend is for patient-controlled analgesic pumps to incorporate both pulse oximetry and capnography into the pump mechanics. These additional monitors alarm to give earlier warnings of potential respiratory issues and/or a potential crisis. Trends in perianesthesia nursing are regularly discussed as potential additions to the ASPAN Standards. Capnography increases safety and has proven its value with better patient outcomes in anesthesia and sedation venues. With the increasing vigilance needed in Phase I PACU for patients in such a vulnerable state, capnography is a monitoring tool that may be beneficial and recommended in the very near future.

References:

1. American Society of PeriAnesthesia Nurses. 2023-2024 perianesthesia nursing standards, practice recommendations and interpretive statements. Cherry Hill, NJ; ASPAN.
2. American Society of Anesthesiologists. Standards for Basic Anesthetic Monitoring. Last affirmed: December 13, 2020. Available at: <https://www.asahq.org/standards-and-practice-parameters/standards-for-basic-anesthetic-monitoring>.
3. American Society of Anesthesiologists. Standards for Postanesthesia Care. Last amended October 23, 2019. Available at: <https://www.asahq.org/standards-and-practice-parameters/standards-for-postanesthesia-care>
4. Gavitt LN, Tola DH, Funk E, Hooge NB, et al. Implementation of Continuous Capnography Protocol in a Postanesthesia Care Unit for Adult Patients at High-risk of Postoperative Respiratory Depression. J Perianesth Nurs. 2024 Jun 28:S1089-9472(24)00057-1. doi: 10.1016/j.jopan.2024.02.011. Epub ahead of print. PMID: 38944792.

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