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Capnography Monitoring: A New Tool for SCH

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What is Capnography?

- End-tidal CO2 (EtCO2) is the measurement of carbon dioxide (CO2) in the airway at the end of each breath.
- Capnography provides a numeric reading (amount) of the EtCO2 and a graphic display (waveform) of CO2 throughout the respiratory cycle. This is a noninvasive measurement of quality of ventilation.
- Breath by breath assessment of ventilatory status.
- Capnography is already a standard of care for anesthesia and mechanically ventilated patients.

How to Interpret Capnography?

- Brenda Swendra-Henry, BSN, RN, CRRN, BC, Imaging Services and Peggy Lange, RRT, Director Respiratory Care

A Review of Literature

- Review of the 2012 Joint Commission Sentinel Alert on the Safe Use of Opioids recommend the use of capnography to measure the quality of ventilation.
- The American Society of Anesthesiologists updated their practice guidelines to recommend capnography monitoring for patients receiving and recovering from procedural sedation.
- Capnography monitoring allows quicker response and intervention during respiratory compromise.
- The American Society for Pain Nursing Guidelines recommend the use of capnography as a tool to assess quality of ventilation.

Why use capnography?

- Pulse oximetry is a direct monitor to reflect the status of oxygenation of the patient.
- Capnography is an indirect monitor and helps in the differential diagnosis of hypoxia to enable interventions.
- Capnography provides information about CO2 production, pulmonary perfusion, alveolar ventilation, respiratory patterns, and elimination of CO2.
- Capnography has been shown to be effective in the early detection of adverse respiratory events.
- Capnography and pulse oximetry together could have helped in the prevention of avoidable sedation and opioid mishaps.
- Capnography has also been shown to facilitate better detection of potentially life-threatening problems than clinical judgment alone.

Oximetry relates to oxygenation
Capnography relates to ventilation

References:

National Guidelines/National Standards/Regulatory


Why use capnography?

- Pulse oximetry is a direct measure of oxygenation status.
- Capnography is an indirect measure of ventilation and provides additional information about CO2 production, pulmonary perfusion, alveolar ventilation, respiratory patterns, and elimination of CO2.
- Capnography has been shown to be effective in the early detection of adverse respiratory events.
- Capnography and pulse oximetry together can provide a more comprehensive assessment of patient status.

Capnography does not change our standards of care, but it is an additional tool to assist with the assessment of quality of ventilation.

The Practice Change

Capnography will be incorporated into the care of patients receiving or recovering from continuous opioid infusions or sedation, or at the discretion of RN or RT for patients with respiratory compromise:

- Capnography monitoring policy approved June 2013
- The Sedation Monitoring policy will include capnography
- CBT will be released July 2013
- Expected implementation September 2013

SCH is above national benchmarks for conscious/procedural sedation within 24 hours prior to code blue event.

A Review of Literature

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