Capnography

Purpose
To provide guidelines for patient selection and capnography monitoring. Capnography may be used as a tool for early detection of respiratory depression and as a trending device for ventilation assessment.

Important Considerations
1. Patients at end of life receiving comfort care do not require capnography monitoring.
2. An arterial blood gas (ABG) may be considered to validate the exhaled carbon dioxide (EtCO₂) value if there is a significant upward or downward trend in patient’s baseline EtCO₂.

Patient Selection
1. Moderate Sedation/Analgesia patients.
2. Patients with opioid use via patient controlled analgesia (PCA) or continuous opioid infusion who are non-ventilated.
3. During cardiopulmonary resuscitation
4. Capnography monitoring may also be initiated as ordered by a licensed independent practitioner (LIP) for patients at risk for respiratory depression. These may include:
   a. Post-operative patients with a pre-existing diagnosis of obstructive sleep apnea (OSA) or who have been identified as at risk for OSA using the Sleep Apnea Risk Assessment tool.
   b. Patient on opioids and concomitant sedatives/medication stacking/other sedating medications
   c. Patient receiving unplanned administration of reversal agents.
   d. Patients at risk for alcohol withdrawal

Equipment
1. Capnography monitor
2. Capnography sampling line as appropriate for patient condition
   a. Sampling line with orange connector is used for short term use.
   b. Sampling line with yellow connector is used for long term use.
3. Pulse oximetry probe.

**Procedure**

1. Refer to Lippincott Procedures for End Tidal Carbon Dioxide Monitoring.

**General Guidelines**

1. EtCO₂ will be documented with each set of vital signs.
2. Monitors will be set up as instructed by manufacturer.
3. If supplemental oxygen is required for non-ventilated patients, patient may be placed on oxygen at flows of up to 5 lpm. If additional oxygen is required, it is ok to place an oxygen mask over capnography cannula.
4. For patients on invasive ventilation:
   a. Place monitor in standby/pump off mode before suctioning patient
   b. For short term capnography monitoring, place sampling line proximal to patient.
   c. For long term capnography monitoring, place sampling line distal to patient on dry side of heat and moisture exchanger (HME).
5. When administering nebulizer therapy, place monitor in standby/pump off mode.

**Alarms**

1. Capnography monitors will have default alarms set to the following:
   a. High EtCO₂ - 50
   b. Low EtCO₂ - 20
   c. High respiratory rate - 30
   d. Low respiratory rate - 6
   e. Apnea alert - 30 seconds
2. Alarm setting may be adjusted based on individual patients, when appropriate.

**References**


**Attachments:**

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