SHARP

# Safe and Effective Pain Management

## Carbon Dioxide ($CO_2$) Monitoring

Safe and Effective Pain Management Strategies—Part 4 of 4

### Capnography has expanded to Medical-Surgical and Progressive Care units.

**Capnography is:**

- An indicator of the level of carbon dioxide in the blood by continuous monitoring of end-tidal $CO_2$ ($EtCO_2$).
- Valuable to diagnose the simple presence or absence of respirations, airway obstruction, or respiratory depression.
- Capable of significantly clarifying the respiratory picture regarding over-sedation, and when used in conjunction with oxygen saturation can dramatically enhance the overall picture of the patient's respiratory status.
- More effective than pulse oximetry in providing initial warning of respiratory depression in patients receiving supplemental oxygen.

The number is capnometry, which is the partial pressure of $CO_2$ detected at the end of exhalation

Normal $EtCO_2$ range is 35-45 mm Hg

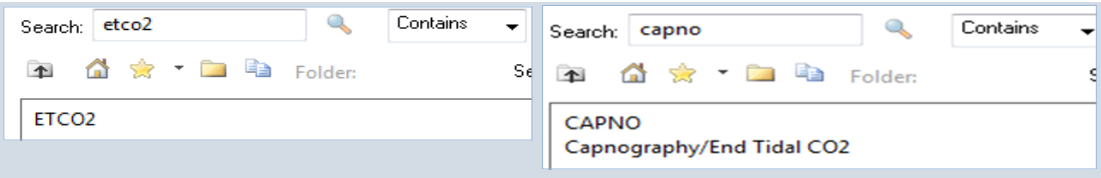
**Limitations:**

- $EtCO_2$ has limitations based on oxygen flow or breathing mechanics:
  - Mouth breathers or patients who are talking may result in nuisance alarms
  - May need to be removed when patient is eating
  - Transcutaneous $CO_2$ monitoring can be used for high-risk patients requiring high flow oxygen or bi-pap
- $EtCO_2$ does not correlate exactly to an ABG.

**Consider $EtCO_2$ for:**

- Patients with obstructive sleep apnea (especially if refusing to wear c-pap).
- Patients on high-dose opioids or multiple sedating medications with potential for dose stacking effects.
- Patients at risk for airway compromise or hypoventilation.

**How to Order $EtCO_2$:**

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We are the stewards of safe and effective pain management.