End Tidal CO_2 ($EtCO_2$) Monitoring

Applies to:
P Paramedic

Clinical Indications:

1. Capnography shall be used when available with the use of all advanced airway procedures and as required by treatment guidelines.

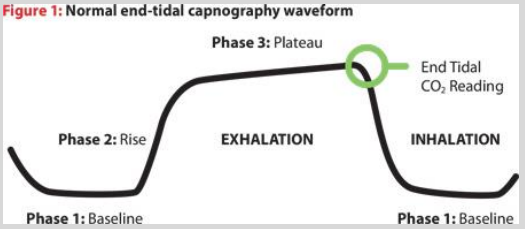
Procedure:

1. Attach capnography sensor to the monitor first to allow for room air calibration, then attach to the advanced airway or any other oxygen delivery device, including bag-valve mask and nasal cannula.
2. Note that $EtCO_2$ level and waveform changes. Values shall be documented in the EHR.
3. The capnometer shall remain in place and be monitored throughout prehospital care and transport.
4. Any loss of $EtCO_2$ detection or waveform may indicate an airway problem and should be immediately addressed and thoroughly documented.
5. Document the procedure and results in the EHR.

Notes:

1. $EtCO_2$ readings may be unreliable if the patient is in shock or has poor perfusion.
2. Normal $EtCO_2$ levels range from 30s and 40s, but this may vary based on the patient's underlying respiratory and metabolic status.
3. $EtCO_2$ levels that rise from a normal baseline to or above 50 may indicate hypoventilation is occurring.
4. Patient stimulation, use of a BVM, or use of Naloxone may be appropriate based on the situation.

Figure 1: Normal end-tidal capnography waveform



Causes of Elevated $EtCO_2$	Causes of Decreased $EtCO_2$
METABOLISM Pain Hyperthermia Shivering	**METABOLISM** Hypothermia Metabolic acidosis
RESPIRATORY SYSTEM Respiratory insufficiency Respiratory depression COPD Analgesia/sedation	**RESPIRATORY SYSTEM** Alveolar hyperventilation Bronchospasm Mucus plugging
CIRCULATORY SYSTEM Increased cardiac output	**CIRCULATORY SYSTEM** Hypotension Sudden hypovolemia Cardiac arrest Pulmonary emboli
MEDICATIONS Bicarb administration