Capnography 6.1

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

Indications:

- Routine monitoring of ventilation status and indirectly circulatory and metabolic status in adults and children with:
  - Respiratory distress (CHF, COPD, Asthma, Pulmonary embolus)
  - Altered mental status
  - Traumatic brain injury
  - Diabetic ketoacidosis
  - Circulatory shock
  - Sepsis
  - Cyanide and/or carbon monoxide poisoning
  - Administration of sedative medication
- Advanced Airway Devices:
  - Confirm and document placement of advanced airway devices, see Airway Management 5.0 and 5.1 A&P
  - To confirm continued placement of advanced airway devices after every patient move and at transfer of care.
- Monitoring of CPR quality and for signs of return of spontaneous circulation (ROSC).
  - High quality chest compressions are achieved when the $ETCO_2$ is at least 20 mmHg. If $ETCO_2$ abruptly increases it is reasonable to consider that this as an indicator of ROSC.
- To assist with termination of resuscitation efforts when $ETCO_2$ is <20 mmHg despite adjusting the quality of chest compressions.
  - Low CO_2 production after 20 minutes of effective CPR is a predictor of mortality. See Resuscitation Initiation & Termination Policy 8.16.

E/A/P

Procedure:

1. Attach the sensor to endotracheal tube, supraglottic airway, BVM or apply cannula with $ETCO_2$ mouth scoop or bi-cannula.
2. Assess ETCO2 numeric levels and waveform:
   - Normal $ETCO_2$ range 35-45 mmHg
   - Elevated $ETCO_2$ may indicate hypoventilation/CO_2 retention.
   - Low $ETCO_2$ may indicate hyperventilation, low perfusion, pulmonary embolus, sepsis.
3. With abnormal $ETCO_2$ levels consider adjusting rate and depth of ventilations.

Any abrupt loss of $ETCO_2$ detection or loss of continuous waveform may indicate a catastrophic failure of the airway, apnea, drug overdose, deep sedation and/or cardiac arrest warranting assessment of the airway, breathing, circulation, and/ or airway device.

PEARLS

- Colorimetric CO_2 detectors are not an approved alternative to quantitative waveform capnography. Airway device placement confirmation and device monitoring should always be confirmed using quantitative waveform capnography.
- Numeric capnometry and capnography waveform morphology should be documented in the ePCR.

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