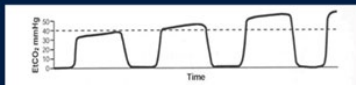


Capnography etCO₂ Tip Sheet

- ❖ Capnography is the non-invasive, continuous measurement of CO₂ (by-product of metabolism; the gas that exits our lungs through the process of exhalation) concentration in the airway
- ❖ More sensitive detection of hypoventilation and apnea than SpO₂
- ❖ **Indications:** PCA and Epidural analgesia
- ❖ **Guidelines for use are found under “Patient Controlled Analgesia (PCA) [Adult and Pediatric]” policy includes**
 - Orders
 - Initiation
 - Monitoring
 - Management
 - Over-sedation
- ❖ Document under vital signs in any inpatient flowsheet, completed:
 - Upon initiation
 - With every set of vital signs
 - Upon discontinuation

Hypoventilation: ↓ RR = ↑ CO₂

HYPOVENTILATION WAVEFORM

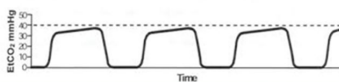


SpO₂ - Normal
EtCO₂ - Increased
Waveform - increased in amplitude and width
RR - very decreased

etCO₂ > 45

Normal ETCO₂ levels are 35-45

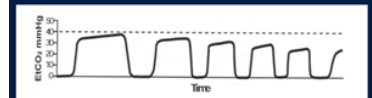
NORMAL WAVEFORM



SpO₂ - Normal
EtCO₂ - Normal Range 35-45
Waveform - Normal
RR - Normal

Hyperventilation: ↑ RR = ↓ CO₂

HYPERVENTILATION WAVEFORM



SpO₂ - Normal
EtCO₂ - decreasing
Waveform - decreasing in amplitude and width
RR - increased

etCO₂ < 35

Normal Waveforms: 35-45mmHg

- ◆ Many patients fall outside of that range
- ◆ **Best practice is to get a baseline measurement and observe trends**
- ◆ A 10% change above or below baseline is considered abnormal and should be addressed.

Abnormal Waveforms: What to do?

- ◆ Assess patient
- ◆ Check sample line position – reposition the tubing as needed
- ◆ Check head/neck alignment, reposition patient as needed
- ◆ Instruct patient to take a deep breath
 - ****If patient is not breathing and not responding, follow airway protocol (ABCs)
 - **** If found to be related to over-sedation, initiate “Stir-up regimen” from PCA policy