Breathing: Continuous Positive Airway Pressure Device

Clinical Indications for Continuous Positive Airway Pressure (CPAP) Use:

- CPAP is indicated in all patients in whom inadequate ventilation is suspected. This could be as a result of pulmonary edema, pneumonia, asthma, COPD, etc. The patient must have an adequate mental status and a spontaneous respiratory drive in order to permit the CPAP device to function properly.

Clinical Contraindications for Continuous Positive Airway Pressure (CPAP) Use:

- Decreased Mental Status.
- Facial features or deformities that prevent an adequate mask seal.
- Excessive respiratory secretions.
- Inability to maintain own airway.

Device:

- The Positive End Expiratory Pressure (PEEP) is not adjustable on this CPAP device and thus is fixed at 10 cmH₂O.
- The device provides a fixed FIO₂ of ~30% when utilizing the Fixed Control Unit (standard).
- The device provides an adjustable FIO₂ of ~30%, ~60%, or ~90% when utilizing the Trio Control Unit (separate).

Procedure:

1. Ensure adequate oxygen supply to CPAP device. Limit the time spent on portable oxygen.
2. Explain the procedure to the patient.
3. Place the delivery mask over the mouth and nose. To improve compliance and tolerance, manually hold the mask for 3-5 minutes while continuously reassuring the patient. Oxygen should be flowing through the device at this point.
4. Secure the mask with provided straps starting with the lower straps until minimal air leak occurs.
5. Encourage the patient to allow forced ventilation to occur. Observe closely for signs of complications.
6. Evaluate the response of the patient, assessing general appearance, breath sounds, and oxygen saturation.
7. Titrate inspired oxygen levels to the patient’s response, with a goal oxygen saturation ≥ 93%. However, if the patient is improving and an effective oxygen saturation is being maintained with otherwise reassuring vital signs, it is preferable to continue with a lower FIO₂.
8. If the patient is not improving and an effective oxygen saturation is not being maintained, adjust the inspired FIO₂ to 60% then 90% if needed.
9. To modulate the inspired FIO₂, replace the Fixed Control Unit with the Trio Control Unit.
10. Frequently reassess the patient, being vigilant for worsening respiratory failure or arrest. Be wary of emesis as it may result in aspiration.
Nebulization Procedure:

1. Insert desired solution into needless blue medication port on nebulizer canister.
2. Connect supply tubing attached to nebulizer canister to oxygen supply.
3. Remove protective cap from nebulizer port.
4. Firmly push nebulizer canister into nebulizer port turning it ¼ turn to secure.
5. Set flow to 8 LPM. Ensure production of aerosol mist, if necessary, tap device to initiate.
6. Evaluate the response of the patient, assessing general appearance, breath sounds, and oxygen saturation.
7. To add additional medication, simply insert desired solution into needless blue medication port on nebulizer canister without removing it from the nebulizer port.
8. If discontinuing nebulization, remove nebulizer canister and secure nebulizer port with the protective cap.

Certification Requirements:
Maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure. Assessment of this knowledge may be accomplished via quality assurance mechanisms, skills station demonstrations, or other mechanisms as deemed appropriate by the EMS Medical Director.