

Continuous **Positive Airway Pressure** (CPAP) has been shown to rapidly improve vital signs, gas exchange, work of breathing, and decrease the need for intubation in patients who suffer asthma, COPD, pulmonary edema, CO poisoning, Near Drowning, CHF, and pneumonia.

INDICATIONS:

Any patient with significant respiratory distress, including one or more of the following:

- A respiratory rate greater than 25 breaths per minute
- Pulse Oximetry of less than 94% at any time
- Use of accessory muscles during respirations

...and **ALL** of the following (unless discussed with Medical Control):

- Is awake and able to follow commands,
- Is over 12 years old and the CPAP mask fits appropriately,
- Has the ability to maintain an open airway,
- Has a systolic blood pressure above 90 mmHg, and
- Shows signs consistent with an emergent respiratory process.

PROCEDURE:

1. Connect CPAP tubing/device to gas source as per manufacturer's recommendations.
2. Activate O₂ source and slowly increase gas flow.
3. Coach the patient on appropriate mask fit/use and slow breathing, and place the face mask securely to the patient's face using head harness.
4. Check face mask fit to patient and device connections for leaks.
5. Slowly **titrate the flow meter per manufacturer's recommendations** until desired pressure is obtained. Not to exceed:
 - a. CHF = 10 cmH₂O
 - b. COPD/Asthma, Pneumonia, or smoke/chemical inhalation = 5 cmH₂O
6. Patient SaO₂ should be monitored using a pulse oximeter and EtCO₂ should be measured with nasal cannula if available.
7. Nebulized medications may be given through CPAP Nebulizer per appropriate guideline.
8. Do not remove CPAP until hospital therapy is ready to be placed on the patient.

A-P4
CONT. POSITIVE
AIRWAY PRESSURE

EMT may initiate CPAP
only if service- specific training
is completed.



CONTRAINDICATIONS:

The use of CPAP is NOT appropriate if:

- Patient is in respiratory arrest/apneic.
- Patient is suspected of having a pneumothorax or has suffered trauma to the chest.
- Patient has a tracheostomy or other injury or deformity to the face prohibiting a good mask fit
- Patient is actively vomiting or having upper GI bleeding.
- Patient is hemodynamically unstable (or any signs of poor perfusion).
- If there is any question about the ability to protect airway (e.g. altered mental status, emesis, etc.).
- The patient **MUST be able to remove the mask themselves** in case of vomiting, or have a provider IMMEDIATELY available to remove it (see “Precautions” below).

PRECAUTIONS:

CPAP may be used with caution in the following situations if closely monitored. If there is any deterioration in the patient’s condition, discontinue CPAP and provide appropriate airway support.

- Has impaired mental status and is not able to cooperate with the procedure.
- Has primary complaint of or recent upper GI bleeding or history.
- Has primary complaint of or recent nausea or vomiting.
- Has poor respiratory effort or excessive secretions.
- Has a minor/partial facial deformity that prevents the use of CPAP.
- Has DNR/DNI status with respiratory distress who otherwise would have been intubated.

A-P4
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NOTES:

- Use of a non-back pressure flow devices (i.e. Flow-Safe) or nebulizer may affect input gas liter flow/pressure. Always verify delivered CPAP pressure on a manometer.
- Flow meters capable of delivering up to 25 LPM may be required to operate both CPAP and Nebulizer simultaneously.
- Watch for gastric distention that can result in vomiting.
- **Procedure may be performed on patients with a Do Not Resuscitate order.**
- Due to the changes in preload and afterload of the heart during CPAP therapy, a complete set of vital signs must be obtained every 5 minutes.
- Always coach the patient to alleviate fear and to allow maximal effectiveness of the treatment.

A-P4
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QI Review Parameters:

1. CPAP use indicated (and not contraindicated) as per guideline.
2. CPAP initiated by: EMS, Fire, Pre-Arrival/Home, etc.
3. Time to initiation of CPAP (from patient contact).
4. Response to Treatment?
5. Adverse events: Yes/No?, Type?