



INDICATIONS:

Adults/Adolescents/Pediatric (age 8 and above) with moderate to severe respiratory distress (dyspnea) that is not related to trauma or injury with any of the following:

- o Pulse oximetry less than 90%, not improving with routine oxygen administration therapy
- o Respiratory rate greater than 26 per minute (SO Pediatric) and pulse oximetry less than 95% and not improving
- o Respiratory distress with accessory muscle use or retractions
- o Wheezes, rales, rhonchi, not improving with routine therapy
- o Respiratory distress with fatigue and decreased effort of breathing

CONTRAINDICATIONS:

- Altered level of consciousness, inability to protect airway from aspiration
- Inability to remain in a sitting position
- Respiratory arrest or failure with agonal respirations (use advanced airway measures)
- Cardiac arrest (use advanced airway measures)
- Nausea or vomiting
- Nasal or oral bleeding
- Blood pressure less than 90 systolic (80 Pediatric) or signs of poor perfusion
- Suspected pneumothorax
- Penetrating chest trauma
- Facial trauma or abnormality
- Upper gastrointestinal hemorrhage or history of stomach surgery in past month (including lap-band)

PROCEDURE:

1. Provide supplemental oxygen for respiratory distress.
2. If wheezing, provide albuterol.
3. Allow patient to assume position of comfort which is often a sitting or upright position.
4. Explain procedure to patient.
5. Document lung sounds before and after initiation of CPAP and every 5 minutes.
6. Monitor pulse oximetry and document oxygen saturation.
7. Assemble CPAP device and attach to oxygen source.
8. Adjust starting CPAP pressure to 5 cm H₂O.
9. If albuterol appropriate, may administer with CPAP in-line nebulizer.
10. Attach CPAP mask to patient; ensure good mask seal and place ETCO₂ monitor.
11. Gradually increase CPAP pressure from 5 cm H₂O to 7.5 to 10 cm H₂O as tolerated and titrated to patient effect (for pediatric age group, gradually increase CPAP pressure to 5 cm H₂O maximum).
12. Continuously observe patient.
 - o Remove CPAP if nausea or vomiting occurs.
 - o Remove CPAP if nasal or oral bleeding occurs.

Approved:

Review Date: 11/2025
Initial Release Date: 12/29/2025
Final Date for Implementation: 4/1/2026
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- o Remove CPAP if blood pressure drops below 90 systolic.
- o Remove CPAP if patient unable to tolerate procedure.
- o Remove CPAP and provide advanced airway control in the event of progression to respiratory arrest or respiratory failure with agonal or hypoventilation.

DOCUMENTATION:

- Document time of CPAP placement, pressure being maintained and initial vital signs, pulse oximetry, and level of consciousness. If CPAP removed, document time and reason.
- Document lung sounds, pulse oximetry, level of consciousness and respiratory effort every 5 to 10 minutes.

REMOVAL OF CPAP:

CPAP therapy is most effective if maintained and continuous. CPAP should not be removed unless the patient cannot tolerate the mask and device, or there is deterioration requiring advanced airway management.

NOTES:

1. Patients may require coaching and encouragement to allow for continued CPAP therapy.
2. Monitor patient for gastric distension which may lead to vomiting.
3. Vomiting into the CPAP mask with subsequent aspiration is the most common serious complication of CPAP use. Care must be taken to avoid this complication. CPAP should not be initiated in a patient who reports nausea or vomiting associated with their symptoms.
4. CPAP is appropriate therapy for a patient with a Do Not Resuscitate (DNR) Order who is in respiratory distress or failure.
5. Advise emergency receiving center (ERC) as soon as possible of CPAP placement so that the receiving hospital can prepare for patient arrival and continued management.

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