

BIPAP EMV+

1. Level: CCT Paramedic (special training required)
2. Purpose: BiPAP has been shown to rapidly improve vital signs, gas exchange, the work of breathing, decrease the sense of dyspnea, and decrease the need for endotracheal intubation in patients who suffer from dyspnea from congestive heart failure, acute cardiogenic pulmonary edema, COPD and asthma.
3. Indications:
 - 3.1. Dyspnea/Hypoxemia secondary to congestive heart failure, acute cardiogenic pulmonary edema, asthma, COPD exacerbation, drowning **and**
 - 3.1.1. is awake and oriented
 - 3.1.2. has the ability to maintain an open airway (GCS > 10)
 - 3.1.3. has their own respiratory drive/ respirations
 - 3.1.4. has a systolic blood pressure > 90 mmHg
4. Contraindications:
 - 4.1. Pneumothorax
 - 4.2. Cardiac or Respiratory arrest
 - 4.3. Agonal respirations
 - 4.4. Unconscious (unless procedurally sedated with ketamine)
 - 4.5. Systolic blood pressure < 90
 - 4.6. Shock associated with cardiac insufficiency
 - 4.7. Penetrating chest trauma
 - 4.8. Persistent nausea/vomiting
 - 4.9. Facial anomalies i.e. facial trauma
 - 4.10. History of upper GI bleeding or history of recent gastric surgery
5. Procedure:
 - 5.1. Place the patient in a sitting position.
 - 5.2. Explain procedure to patient.
 - 5.3. Check vent tubing for leaks in adult menu mode. Restart. Select Mask CPAP menu. LC is on. Set initial setting to an IPAP of 10 and an EPAP of 5. When ready, push the breath trigger button, all at the same time.
 - 5.4. Secure the mask with the provided straps
 - 5.5. Adjust the mask off the nose by squeezing the tabs on the forehead support.
 - 5.6. Instruct patient to breathe in through their nose slowly and exhale through their mouth as long as possible
 - 5.7. Check for air leaks
 - 5.8. Monitor and document the patient's respiratory response to the treatment.
 - 5.8.1. All patients on BiPAP should have continuous SpO2 and EtCO2 monitoring.
 - 5.9. Continue to coach the patient to keep the mask in place and readjust settings as necessary to meet the patient's demand.
 - 5.10. If respiratory status deteriorates, remove device and provide BVM and/or endotracheal intubation.
6. Considerations:
 - 6.1. BiPAP therapy should not be discontinued unless the patient cannot tolerate the mask or experience respiratory distress worsening to respiratory failure.

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- 6.2. Advise the receiving hospital as early as possible that the patient is on BiPAP so they can be prepared for the patient's arrival. The mask will adapt to any hospital CPAP/BiPAP machine as long as it has a standard respiratory connection.
- 6.3. Do not remove BiPAP until hospital therapy is ready to be placed on the patient.
- 6.4. Monitor for gastric distension.
- 6.5. Frequent assessment of vital signs (q 5 minutes) is paramount with patients receiving BiPAP.
- 6.6. Documentation:
 - 6.6.1. Oxygen should be documented in the medication section of the ePCR
 - 6.6.2. Document the lpm delivered
 - 6.6.2.1. The EMV + ventilator automatically calculates the lpm used and is displayed in the upper right hand corner of the FiO2 section