

## General

Continuous positive air pressure (CPAP) is a non-invasive positive pressure ventilation (NIPPV) method that helps to improve the work of breathing and oxygenation for individuals with various cardiopulmonary complaints. CPAP allows for a constant increased pressure across alveoli which increases surface area for gas exchange and does not allow alveoli to collapse promoting decreased work of breathing and increased oxygenation.

## Indications

- Adult patient with increased work of breathing
- Significant respiratory distress that is not response to conventional therapy AND
  - o  $SpO_2 < 92\%$
  - o Respiratory rate  $> 25$  breaths per minute
  - o Use of accessory muscles or retractions

## Contraindications

- Hypotension- systolic blood pressure  $< 90$  mmHg
- Unable to form proper seal with mask
- Facial trauma
- GCS  $< 10$
- Inability to maintain open airway
- Current or expected emesis, excessive secretions
- Apnea
- Inadequate respiratory effort
- Suspected pneumothorax or chest trauma
- Tracheostomy

## Considerations

- The mask is not designed to require extensive tightening. A snug fit is normally all that is needed for proper face-mask seal.
- If air leaks are present, lightly loosen the Velcro straps. Rarely does the mask need to be tightened to decrease leaks.
- Anxiolytics or dissociative may be necessary to assist with airway management in a patient who is experiencing low saturation, confusion, or agitated delirium.
- All monitoring equipment should be in place including BP, ECG, Pulse Ox,  $EtCO_2$

## Procedure

1. Connect CPAP circuit directly to an Oxygen source via Ohio adaptor or high flow connector.
2. Attach the circuit to the appropriately sized mask and turn the oxygen on with an initial dialed pressure of 5 cm  $H_2O$ .
3. Instruct the patient on what to expect and, if possible, have the patient place the mask on their face to get use to the flow. If the patient is not able, assist them with placing the mask and forming a seal. A NC may be left on under the mask to promote additional oxygenation and  $EtCO_2$  monitoring if a seal can be maintained.
4. Secure the mask with the provided straps. The OmniClip, forehead piece, should be adjusted to find the best position on the patient's forehead.
5. Upper and lower clips should be secured first to the mask, then Velcro tabs adjusted for a secure fit.
6. Adjust CPAP pressure to desired setting based on appropriate SDO.
7. Nebulized Albuterol/DuoNeb can be administered through the provided circuit.