

KENT COUNTY EMERGENCY MEDICAL SERVICES, INC.

CPAP ADMINISTRATION PROTOCOL & PROCEDURE

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Purpose: This protocol may be utilized by ALS agencies that have completed the CPAP training, approved by the MCA, and are equipped with CPAP Equipment. For use of this protocol, patients must meet the Inclusion Criteria. Contraindicated patients and those that do not meet the inclusion criteria will be treated according to existing protocols without the application of CPAP.

I. Inclusion Criteria:

- A. Respiratory distress with 2 or more of the following:
 - i. Retractions/Accessory muscle use
 - ii. Pulmonary edema
 - iii. Respiratory rate > 20 bpm
 - iv. SaO₂ < 92%
 - v. Acute/Chronic CHF/COPD
- B. Contraindicated patients
 - i. Pediatrics (less than 8 years)
 - ii. Respiratory/cardiac arrest
 - iii. B/P < 90mmHg
 - iv. Unresponsive to speech
 - v. Inability to maintain patent airway
 - vi. Major trauma, pneumothorax, penetrating chest trauma
 - vii. Vomiting or active GI bleeding with emesis
 - viii. Unstable facial fractures
 - ix. Patient with aspiration risk/history

II. Procedure:

- A. **EXPLAIN THE PROCEDURE TO THE PATIENT**
- B. Ensure adequate oxygen supply to the device (50 PSI): quick connects supply 50 PSI, a wall flow-meter will not, nor will a barb fitting on a portable tank
- C. Place the patient on continuous pulse oximetry
- D. Place the patient on cardiac monitor and record rhythm and vital signs
- E. Secure the mask with provided straps and tighten to obtain a good seal, check for air leaks
- F. Monitor and document the patient's response to treatment
- G. Check and document vital signs every 10 minutes (every 5 minutes for short transport times.)
- H. Administer medications, per respiratory distress protocol, as indicated
- I. Continue to coach the patient to keep the mask in place, readjust as needed, and consider sedation to reduce anxiety (per the sedation procedure)
- J. Advise medical control of CPAP use during radio report
- K. If the patient's SaO₂ is not improving, increase the FiO₂ (inspired concentration of oxygen) by adding 6 lpm via extension tubing connected to the small auxiliary port on the face mask or, if bronchial constriction and/or wheezes are present, attach an in-line nebulizer. The neb is run via 6 lpm of O₂ which will also increase the FiO₂.
- L. If respiratory status deteriorates, remove the device and assist ventilations with a BVM/supplemental O₂; place an appropriate airway control device
- M. The "*Respiratory Distress Field Assessment and CPAP QA Form*" must be completed for any patient receiving CPAP.
- N. **Advise the ED staff receiving the patient of the patient's response to treatment and the steps that have been taken, including adding additional O₂ (as in point K above), as they may choose to increase the FiO₂ prior to discontinuing CPAP and proceeding to intubation, etc.**

III. Removal Procedure

- A. CPAP therapy needs to be continuous and should not be removed unless the patient cannot tolerate the mask or has marked deterioration including respiratory arrest, decreasing LOC or begins to vomit.
- B. Assist ventilations as necessary with BVM and control airway with intubation/Supraglottic airway.

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IV. **Special Notes:**

- A. Do not remove CPAP until hospital therapy is ready to be placed on the patient.
- B. Watch the patient for gastric distention.
- C. CPAP may be used on DNR patients not in arrest.
- D. Due to changes in cardiac preload and afterload during CPAP therapy, a complete set of VS must be obtained every 10 minutes (5 minutes in short transport situations).
- E. The low-flow generator supplies 80 lpm of 31-33% oxygen, at 10 cm of H₂O pressure.
- F. A "D" type O₂ cylinder will last about 40 – 45 minutes at this rate.
- G. **The FiO₂ (concentration of O₂ inspired) supplied is 31 -33 %; if a patient's O₂ sats don't improve, it is necessary to increase the FiO₂ by adding additional oxygen. This can be accomplished by doing an in-line neb if there are any signs of air-trapping, bronchial constriction or wheezing. If not, such as in a typical CHF patient, the FiO₂ can also be increased by attaching extension tubing to the auxiliary port on the front of the face mask (small port with a cover) and hooking it up to 6 liters per minute of O₂.**

Respiratory Distress Field Assessment CPAP QA FORM

MedCom # _____

Age _____

Gender: M / F

Date _____

Agency _____

Personnel # _____ / _____

Signs/Symptoms

Treatment

1.	Retractions/accessory muscle use.	
2.	Pulmonary edema (bilateral rales).	
3.	Respiratory rate greater than 25.	
4.	SpO2 < 92%	
5.	Acute/Chronic COPD/CHF	
6.	Hypotension (B/P <90 systolic).*	
7.	Unresponsive to speech.*	
8.	Inability to maintain patent airway.*	
9.	Pneumothorax *	
10.	Unstable facial fractures.*	
11.	Uncontrolled vomiting.*	
12.	Obvious S/S of respiratory infection*	

1.	Pulse oximetry	
2.	High flow O2	
3.	IV	
4.	Albuterol / Atrovent	
5.	Albuterol alone	
6.	Nitroglycerine	
7.	Lasix	
8.	Morphine	
9.	CPAP	
10.	Intubation	

*** DO NOT USE CPAP**

CPAP Patients

Please record vital signs below. See the 1-10 scale on the back of this page.

Time	1 – 10	SaO2	B/P	Resp	HR
1.	Initial ALS assessment.				
2.	When CPAP was applied.				
3.	10 minutes post CPAP application.				
4.	20 minutes post CPAP application.				
5.	Arrival at Emergency Dept.				

Non-CPAP Patients

Please record vital signs below. See the 1-10 scale on the back of this form

Time	1 – 10	SaO2	B/P	Resp	HR
1.	Initial ALS assessment.				
2.	Post intubation (if done)				
3.	Arrival at Emergency Dept.				

Condition upon Arrival to the Emergency Department (All Patients)

Worse		Same		Better
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Hospital ED Diagnosis:

HOW BAD IS YOUR TROUBLE BREATHING?

Normally:



Worst Prior Event:



Right now:



After 10 min:



At the ED:



YES

NO