

Massachusetts Department of Developmental Services



CPAP and BiPAP

PURPOSE: **CPAP** and **BiPAP** systems are used to treat sleep apnea or sleep disorders. They help apnea patients to breathe more freely and restfully. The respiratory company will provide appropriate manufacture booklets for all breathing systems used. Note the 1-800- number for staff assistance. They usually have their own respiratory therapist who will train the individual and staff on the proper use of breathing equipment.

INTRODUCTION: **Difference between CPAP and BiPAP**

- The **CPAP** machine delivers a predetermined level of pressure. It releases a stream of compressed air through a hose to the nose mask and keeps the upper airway open under continuous air pressure. This air pressure prevents obstructive sleep apnea, which occurs as a result of narrowing of the airway due to the relaxation of upper respiratory tract muscles during sleep. This machine helps to increase the oxygen flow by keeping the airway open. CPAP, though initially used to treat sleep apnea, is also used for patients with neuromuscular diseases and respiratory problems.
- **Auto-CPAP** or **Automatic Positive Airway Pressure** machine automatically adjusts the air pressure according to the patient's requirement at a particular time.
- **BiPAP**, a non invasive ventilation machine delivers two levels of pressure. Inspiratory Positive Airway Pressure (IPAP) is a high amount of pressure, applied when the patient inhales and a low Expiratory Positive Airway Pressure (EPAP) during exhalation. BiPAP is used to treat central sleep apnea and severe obstructive sleep apnea. It is also prescribed for patients who have respiratory and heart diseases.

APPLICABILITY: Used to treat sleep apnea, sleep disorders, treatment of severe respiratory distress seen in chronic obstructive pulmonary disease (COPD), congestive heart failure (CHF) and to a lesser degree in asthma.

Equipment needed: CPAP or BiPAP machine, mask, or nasal pillows, tubing, head gear, distilled water only for humidification, (maintains humidifying container longer), white vinegar solution (½ and ½ dilution); clean dry towels.

PROCEDURE:

Who can assist: Any direct care staff person (after appropriate training from a licensed person to an individual's needs and the specific equipment) can provide the following:

Connect the required equipment together, per manufactures recommendations. Plug breathing system into a wall outlet. Use a power safety strip to prevent electrical shortages and power surges.

Sleep systems, CPAP/BiPAP sometimes have a "ramp up" or "automatic on" dial/buttons. Ramp up is over a set time, i.e. 15 minutes; it slowly transitions to the full settings. This can be helpful during the adjustment transition of wearing at night.

Some machines have a data reading card that is inserted at the back of CPAP/BiPAP machine. Be sure this is inserted if needed. (Data card is taken out and sent to the respiratory company as needed/ per doctor's recommendations to read compliance and effectiveness of use) You need to have an empty card on hand before you remove data card, to reinsert new card.

If a humidifier chamber is used, be sure it is to the filled with distilled water to the recommended line each night before bedtime. Set the humidification % as recommended by MD. (Dial usually is 1-5, 1 being the least humidification)

Help individual connect the head piece to their head, set the machine to ramp up automatically. You may need to staff 1:1 till person is comfortable with wearing.

When O₂ is administered during an individual's use of the CPAP machine direct care staff monitoring the individual and the machine's use MUST BE MAP CERTIFIED

Cleaning of equipment:

1. CPAP or BiPAP System/Machine Cleaning

- Wipe machine off twice monthly with damp cloth.
- Replace disposable filters monthly or per manufacturer manual.
- Clean non-disposable filters weekly and replace when needed.
- Use warm soapy water and let air dry before inserting back into machine.
- Both disposable & non-disposable filters can be purchased from your home care provider.

2. Headgear (strap)

- Wash as needed.
- Hand wash in mild detergent (i.e. Woolite, Ivory) and air dry. DO NOT machine wash head gear, do not dryer dry. Let air dry only.

3. Masks & Nasal Pillows

- Wash daily with mild detergent (i.e. Ivory); rinse thoroughly with warm water to remove all detergent and residue; air dry. **DO NOT PLACE IN DISHWASHER.**
- Use detergent that is free of perfumes, dyes, and moisturizers. They can shorten the useful life of the mask or pillow.

4. Tubing

- Wash bi-monthly with mild detergent or white vinegar solution, rinse with warm water and air dry between uses.

5. Humidifier (If indicated by physician)

- Change distilled water daily right before bed. It is best to put the distilled water in right before bed.
- Clean chamber weekly and let air dry.
- Do not place in a dishwasher.
- Soak all other humidifier chambers for 30 minutes in a solution of equal parts white vinegar & water. This solution can remain in refrigerator for one week. (Label container with contents and date)

DOCUMENTATION - COMMUNICATION Document on the individual's treatment sheet or medication sheet his/her response to CPAP/BiPAP. Often use of the CPAP is a gradual process of tolerance to wear all night. Do not give up, encourage and support the person to wear as long as tolerated each night. Nightly use of the CPAP machine requires persistence on the part of the staff and the individual but the overall impact on health makes the effort worthwhile.

Recommend adding the wearing and cleaning routine of equipment on the MAR. (Medication Administration Record) Sample one added to this document.

- **Be sure this information is added to the HCSIS Health Care Record and hospital staff is aware of the use when person is hospitalized.**

SPECIAL PRECAUTIONS:

REMEMBER TO KEEP EQUIPMENT CLEAN and DRY BETWEEN USES TO CUT DOWN ON FACIAL RASHES AND INFECTIONS.

Resources:

<http://www.youtube.com/watch?v=XM9HJhswPbg> Great video

http://www.youtube.com/watch?v=0jUAS_xf7UY&feature=related Cleaning video