

CONNECTICUT VALLEY HOSPITAL

OPERATIONAL PROCEDURE MANUAL

SECTION: 1	PATIENT FOCUSED FUNCTIONS
CHAPTER: 2	Provision of Care, Treatment, and Services (PC) Assessment Continuum of Care
PROCEDURE: 2.47	PAP Ventilation (APAP, BiPAP, CPAP)
REVISED:	09/24/12; 08/22/16; 02/18
Governing Body Approval:	02/14/13; 08/25/16; 04/18

PURPOSE: To provide safe and appropriate respiratory and nursing care on non-invasive Positive Airway Pressure (PAP) ventilation.

Indications: Disorders of oxygenation or increased work of breathing, such as Obstructive Sleep Apnea, where positive pressure ventilation is indicated to increase alveolar patency. The use will be determined by a consulting sleep specialist after a formal sleep study is conducted with resultant recommendations.

SCOPE: Clinical Staff

Definitions:

PAP ventilation is a treatment that delivers slightly pressurized air during the respiratory cycle. This assist the airway in staying open during sleep and prevents episodes of apnea in patients with obstructive sleep apnea and other respiratory problems.

1. **APAP:** Automatic Positive Airway Pressure automatically titrates the amount of pressure delivered to the patient to the minimum required for maintenance of an unobstructed airway. By measuring the resistance in the patient's breathing on a breath-by-breath basis, the precise pressure required at a given moment is delivered; thereby avoiding the compromise of fixed pressure.
2. **BiPAP:** Bi-level Positive Airway Pressure is a spontaneous breathing mode which uses flows of constant airway pressure at two different levels – *inhalation and exhalation* – allowing for separate regulation of inspiratory positive airway pressure (IPAP) and expiratory positive airway pressure (EPAP). The patient exhales against an elevated pressure above a zero baseline (EPAP) and inhales on a set pressure above (IPAP).
3. **CPAP:** Continuous Positive Airway Pressure is a spontaneous breathing mode, with a baseline pressure elevated above the zero baseline.

Contraindications:

- Bullous lung disease (relative contraindication)
- Untreated/suspected pneumothorax
- Severe hypotension

- CSF leak or increased intracranial pressure
- Unstable airway
- Acute facial trauma
- Severe cardiac arrhythmias
- Epistaxis
- Refractory vomiting
- Abdominal distention, ~~or~~ recent gastric surgery, or active upper gastrointestinal bleed
- Impaired cough or ability to swallow
- Limited or excessive secretions
- Patient's inability to remove mask quickly, i.e., restrained, decreased level of consciousness, delirium, etc.

Physician Responsibilities:

- The physician will review the sleep study report, accompanying data, and prescription.
- An order for treatment shall be written in Physician Orders section of the patient's medical record and would include the Mode, IPAP and EPAP pressures, as applicable, the respiratory rate, as applicable and, if indicated, an order for supplemental O2. These settings will follow the recommendations delineated in the sleep study prescription.
- The Physician's Order will be faxed to Ambulatory Care Services (x5148).

Nursing Standard of Care

Nursing staff assist patients who have prescribed PAP ventilation to utilize the machine correctly and consistently, while monitoring for any reactions. PAP ventilation machines and masks are varied and numerous with specific recommendations from the sleep study prescription. Staff will follow guidelines that are specific to the equipment being utilized.

POLICY:

PAP ventilation masks are used for patient care as prescribed by a physician. Patient education, assessment, and evaluation are performed by a Registered Nurse.

PROCEDURE:

1. Ascertain that there is a current Physician's Order for PAP utilization, including prescribed pressure (which is set and locked by the supplying company) and utilization guidelines.
2. Transcribe the Physician's Order onto the Treatment Kardex ([CVH-498](#)).
3. Provide the patient with teaching and support regarding the use of the PAP machine. Nursing education will be documented in the Nursing Plan of Care along with any barriers for independent patient usage.
4. Place machine in patient's room at bedtime and indicate it on the Medical Equipment Rounds Sheet ([CVH-613](#)). The patient is to be checked every 15 minutes while the equipment is in use.

5. The mask should be assessed prior to each use for proper fit, no breaks or holes, properly fitting strap and patent hose.
6. Place the mask on the patient's face and adjust the head strap. If using a 4-point face mask, all adjustments should be made symmetrically for a secure fit.
7. Follow the manufacturer's recommendations for machine use, including humidification. Distilled or sterile water is to be used for humidification as appropriate.
8. Initial the treatment on the Treatment Kardex daily, indicating patient compliance or non-compliance as prescribed.
9. Document patient response to PAP ventilation, including degree of compliance, hours of use, hours slept, and any difficulties patient has encountered in the Integrated Progress Notes. The night shift RN/LPN will document daily for the first month and monthly thereafter.
10. The machine and mask are to be cleaned according to a set schedule to reduce the risk of infection. (See [*Infection Prevention and Controls, Chapter II.L*](#)).
11. Follow manufacturer's recommendations for how to accomplish the daily/weekly cleaning. Only warm water is to be used to clean the humidifier chamber and hose. Mild soap and warm water can be used to clean the mask. Detergent, solvents, and alcohol based soaps are to be avoided due to chemical build up. Always ensure that the machine is unplugged before cleaning and dry before plugging it back in again.
12. PAP machines will be stored in the treatment room when not in use, due to patient safety considerations.
13. Any issues, such as cracks in the humidifier or holes in tubing, should be reported to Ambulatory Care Services (x5154) who will contact Connecticut Support Services.