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**Document Title:** Policy and Procedure of CPAP and BIPAP Units Use During Hospital Stay

**Approval Process**

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**Acronyms:**

BPAP	Bi- Level Positive Airway Pressure
CO2	Carbon Dioxide
COPD	Chronic Obstructive Pulmonary Disease
CPAP	Continuous Positive Airway Pressure
EPAP	Expiratory Positive Airway Pressure
IPAP	Inspiratory Positive Airway Pressure
NIV	Non- Invasive Ventilation
NPPV	Noninvasive Positive-Pressure Ventilation
OSA	Obstructive Sleep Apnea
OHS	Obesity Hypoventilation Syndrome
PAP	Positive Airway Pressure



## **Policy and Procedure of CPAP and BIPAP Units Use During Hospital Stay**

### **1. Introduction**

The use of noninvasive ventilation (NIV) at home is on the rise for patients with obstructive sleep apnea, Obesity hypoventilation and selected COPD patients. CPAP and Bi-level positive airway pressure (BPAP) is a common therapy of choice for this population and can simultaneously improves ventilation and quality of sleep. When such patients are admitted in the hospital, settings on the ventilator or PAP machine must be tailored to a patient's treatment needs and it is necessary to change the equipment used at home to the hospital machine and setup. This is done in order to optimize the treatment leading to a better quality of life, reducing the reoccurrence of exacerbations and reducing hospital readmissions until it is safe again to use the patient equipment after discharge.

### **2. Scope**

This document is applicable to all Respiratory Therapists, Doctors and nurses in all healthcare institutions in Ministry of Health using Non- Invasive Ventilation during hospital stay.

### **3. Purpose**

3.1. To provide guidelines on the use of CPAP and BPAP machines during hospital stay and ensure that proper setup and treatment is given to patients.

### **4. Definitions**

4.1. Non- Invasive Ventilation (NIV) refers to the administration of ventilatory support without using an invasive artificial airway (endotracheal tube or tracheostomy tube)

4.2. CPAP (continuous positive airway pressure), CPAP (continuous positive airway pressure): Is a therapy frequently used in the treatment of an acutely in patient with acute cardiogenic pulmonary edema. This single positive pressure is delivered to the patient through a hose connected to a snug fitting nasal mask by a machine that creates a flow of compressed air.

4.3. BPAP (bi-level positive airway pressure): Is a spontaneous breathing ventilatory mode frequently used in the treatment of Acute/acute on chronic CO<sub>2</sub> retention as in patients with acute exacerbation of COPD and obesity hypoventilation syndrome and in selected



patients with central sleep apnea. BPAP requires two different pressure settings, (IPAP & EPAP).

## **5. Policy**

- 5.1. Patients may use their personal CPAP/BiPAP machines and personal mask with an order from an authorized prescriber while in the hospital on a case to case basis.
  - 5.1.1. The Respiratory Therapist, Biomedical or clinical engineering department shall inspect the equipment for electrical and mechanical soundness before use.
  - 5.1.2. The hospital shall first obtain physicians approval of the suitability of the device for the patients' current condition
- 5.2. Patients presenting in the Emergency Department, Perioperative Units, and/or admitted to the hospital will not be allowed to use their personal CPAP/BiPAP machines if found not suitable for use while in the hospital.
- 5.3. Patients may use the hospital CPAP, BiPAP machines if they are admitted in the hospitals Critical care areas which has an order from an authorized prescriber.
- 5.4. Medical orders for initiation of CPAP/NIV shall be completed prior to commencement of therapy
- 5.5. The initial setup, including interface selection and fitting, will be performed by the Respiratory Care Services/ Respiratory Therapist.
- 5.6. Ventilators, CPAP and BiPAP supplies, including interfaces, circuits and any other required adapters will be stored in the Respiratory Therapy Department.

## **6. Procedure**

- 6.1. BiPAP or CPAP machines will be permitted to leave their equipment at home.
  - 6.1.1. Patients receiving BiPAP or CPAP therapy at home should not bring their equipment with them when being admitted to the hospital unless instructed to do so.
  - 6.1.2. Patient owned equipment varies greatly in brand and model. Cleanliness or micro-organism colonization cannot be controlled.
- 6.2. The admitting physician will write orders including complete BiPAP and CPAP settings. Notify Respiratory Therapy that a patient requires Ventilator, or CPAP/BiPAP machine



- 6.2.1. An inpatient receiving CPAP/NIV must be medically reviewed at least daily or more frequently where their requirement for respiratory support changes.
- 6.3. Patients scheduled for operative or diagnostic procedures will be questioned during the pre-operative assessment about the use of CPAP/BiPAP (include mask size and type). Upon determining the patient's use of CPAP, the ordering physician will be contacted to order the appropriate settings.
  - 6.3.1. Provides lead time to nursing and the possibility for the need for a pulmonary consult.
- 6.4. In the event that the ordering physician cannot be contacted and the patient does not know their CPAP/BiPAP settings, the machine will be set to default settings 10 cmH<sub>2</sub>O for CPAP and 10/5 cmH<sub>2</sub>O for BiPAP
  - 6.4.1. Every attempt will be made to obtain the specific settings from the physician.
- 6.5. The hospital's disposable circuit, mask, and headgear will be discarded after discharge, or replaced if visibly soiled.
  - 6.5.1. Do not allow the patient to take the disposable circuit, mask, or headgear home as it may not be compatible with the patient's equipment at home.
- 6.6. Remove any CPAP/BiPAP unit that is defective or suspected of malfunctioning. Notify Respiratory Therapy.
  - 6.6.1. Call Clinical Engineering and place a "defective" sign that indicates what is wrong with the unit

## **7. Responsibilities**

### **7.1. Respiratory Therapists are responsible for:**

- 7.1.1 Providing all the support to the patient, nurse and physicians by facilitating the machines proper setup, calibration, teaching and troubleshooting during patient's hospital stay
- 7.1.2 Initiating noninvasive positive pressure ventilation as ordered by a physician that included initial set-up and noninvasive positive pressure ventilation setting adjustments
- 7.1.3 Monitoring and adjustment of the NIV equipment
- 7.1.4 Providing ongoing assessment and documentation of ongoing CPAP/NIV requirements of the patient.



**7.2. Doctor or Physician is responsible for:**

- 7.2.1. Ordering NIV and to be contacted for acute respiratory failure
- 7.2.2. Assessments revealing a worsening patient condition despite NPPV.
- 7.2.3. Practitioner will monitor the effectiveness of NIV and work with respiratory therapy and nursing in the management, weaning and discontinuation of NIV

**7.3. Nursing Staff is responsible for:**

- 7.3.1. Monitoring physiological measures, clinical assessment parameters and Hemodynamic instability
- 7.3.2. Contacting the physician for any serious untoward incident involving the patient while using NPPV
- 7.3.3. Providing ongoing assessment and documentation of the patient condition
- 7.3.4. Assisting in re-applying, adjusting, repositioning and removing the mask interface as required

**7.4. Biomedical or Engineering department**

- 7.4.1. Addressing any defective or suspected machine malfunction promptly.
- 7.4.2. Performing safety check of the equipment





## 8. Document History and Version Control

Document History and Version Control			
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01	Initial Release	Respiratory Care Services Team	May/2024
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Respiratory Care Services Team		Khalsa Al Siyabi	Dr. Kadhim Sulaiman

## 9. Related Documents:

There are no related documents for this policy



## 10. References:

Title of book/ journal/ articles/ Website	Author	Year of publication	Page
Effectiveness of nasal continuous positive airway pressure (nCPAP) in obstructive sleep apnea in adults	National Health and Medical Research Council of Australia.	2000-02-20 Archived from the original (PDF) on July 21, 2008. Retrieved 2008-08-13.	
Interdisciplinary Approach to Improved Safety for Patient-Owned Noninvasive Ventilation Devices in the Hospital. Respiratory Care	Travis Wayne Collins, Victoria Roelker, Molly Johantgen and Erica Fye	October 2018	63 (Suppl 10) 3007621
CPAP and Bi-level PAP Therapy: New and Established Roles. Respiratory Care	Andreea Antonescu-Turcu and Sairam Parthasarathy	September 2010,	55 (9) 1216-1229;
<a href="https://www.rch.org.au/rchcpg/hospital_clinical_guideline_index/Continuous_Positive_Airway_Pressure_(CPAP)_and_Non-invasive_Ventilation_(NIV)/">https://www.rch.org.au/rchcpg/hospital_clinical_guideline_index/Continuous_Positive_Airway_Pressure_(CPAP)_and_Non-invasive_Ventilation_(NIV)/</a>			