

**Respiratory Care Services
John Dempsey Hospital
Policy and Procedure Manual**

Subject: **Hyperinflation Therapy Protocol**

Rationale: For patients unable to tolerate IPPB or CPT due to pain and /or respiratory insufficiency Hyperinflation Therapy is an adjunct treatment. Hyperinflation Therapy is designed to be utilized for either the prevention or treatment of post-operative atelectasis; encouragement and aid in patients' performance of deep breathing exercises; and the facilitation of pulmonary secretion mobilization and promotion of airway clearance. The Respiratory Care Practitioner will utilize the following protocol to select the indicated therapy. This protocol is intended to address the needs of all post operative patients and/or clinically unstable patients.

Equipment Needed:

1. Stethoscope
2. Incentive Spirometry
3. EzPap or Acapella device (if Protocol initiated)

Procedure:

1. All initial orders for IPPB or CPT will be reviewed to determine if patient's needs would benefit from the initiation of the Hyperinflation Protocol.
2. Verify patient's order sheet for specific instructions. Verify the patient's name, DOB, and bed location. Proceed to patient's bed, introduce yourself, and explain what you are about to do. Check the patient's name and DOB verbally and by the patient's wrist band. Offer reassurance.
3. Perform clinical assessment:
 - a. Assess patient's level of dyspnea and respiratory rate (proceed if dyspnea is mild and respiratory rate \leq 25 breaths / minute)
 - b. Assess patients mental status (proceed if patient awake, alert, and demonstrates an ability to follow and perform simple commands when instruction is provide)
 - c. Chest auscultation: assess breath sounds and air movement
 - d. Assess for effectiveness of cough effort in promoting airway clearance
 - e. Assess secretions (frequency, amount , color, and texture)

4. Attempt to provide instruction to patient in Incentive Spirometry.
 - a. If inhaled volume is $>$ than 10 ml/kg, have patient self –administer Incentive Spirometry after initial instruction and proper technique demonstrated. Inform and instruct nursing to call RT if patient needs re-evaluation.
 - b. If inhaled volume is \leq 10 ml/kg, initiate Hyperinflation Protocol and appropriate device (EzPap or Acapella). Refer to chart below.

EzPaP
Indications for Use
<ul style="list-style-type: none">• Presence of Atelectasis• Restrictive Lung Defect• Impending or worsening Hypercapnia secondary to decreased lung tissue (severe atelectasis)• Patient at risk for developing pulmonary atelectasis• Optimize delivery of bronchodilator

OR

Acapella
Indications for Use
<ul style="list-style-type: none">• Aid in Mobilizing retained secretions• Prevent or reverse atelectasis• Optimize delivery of bronchodilator

5. Assess patient’s need for a Bronchodilator.
 - Does patient have a history of obstructive pulmonary disease?
 - Does the patient have a chronic lung disease characterized by airflow obstruction?
 - Does patient receive bronchodilators as treatment for other pulmonary conditions?
 - Does patient have poor expiratory air flow?
 - Is there wheezing or a prolonged expiratory phase?
 - Does patient experience respiratory distress with poor air flow?
6. Document your evaluation and clinical assessment of the patient as a **SOAP Note** within the progress note section of the patient’s chart.
 - ✓ Include the results of the clinical assessment
 - ✓ Include outcome / results of the initial Incentive Spirometry instruction provided to patient.
 - ✓ Indicate whether or not the Hyperinflation Protocol was Initiated

If yes – indicate the device utilized and its indications for use.

✓ Comment as to whether the patient was placed on a bronchodilator. Was it indicated by history or pulmonary assessment?

7. A recommended frequency for Hyperinflation Therapy will be determined from the evaluation and clinical assessment conducted by the respiratory care practitioner (therapist).
 - Critical Care is q 2^o - q 6^o
 - Acute care is 2-4 times per day or as needed.

Patients on Hyperinflation Protocol will be assessed every 48-72 hours.

Patients will be followed by the Respiratory Therapy Department and have their treatment adjusted according as indicated by assessment of their pulmonary status.

The RT will be responsible for reordering or discontinuing Hyperinflation Therapeutic Treatments if the following outcomes are met or not met. (Refer to chart below)

OUTCOMES

- Change in sputum production; able to mobilize secretions or decrease in sputum production
- Breath Sounds: Increased aeration in areas that were previously decreased
- X-Ray: resolution or improvement in atelectasis and localized infiltrates
- Change in Arterial Blood Gas Values (ABG) or oxygen saturation
- Subjective response: Is patient feeling better?
- Ambulatory?