Incentive Spirometry

Purpose:

To describe the procedure for patient education and follow up monitoring of incentive spirometry.

Description:

Incentive spirometry is designed to mimic natural sighing or yawning by encouraging the patient to take long, slow, deep breaths. This is accomplished by using a device that provides patients with visual or other positive feedback when they inhale at a predetermined flowrate or volume and sustain the inflation for a minimum of 3 seconds. The objectives of this procedure are to increase transpulmonary pressure and inspiratory volumes, improve inspiratory muscle performance, and re-establish or simulate the normal pattern of pulmonary hyperinflation. When the procedure is repeated on a regular basis, airway patency may be maintained and lung atelectasis prevented or reversed.

Indications:

2. Presence of pulmonary atelectasis.
3. Presence of restrictive lung defect associated with quadraplegia and/or dysfunctional diaphragm.

Contraindications:

1. Patient cannot be instructed or supervised to assure appropriate use of the device.
2. Patient cooperation is absent, or patient is unable to understand or demonstrate proper use of the device.

Hazards/Complications:

1. Ineffective unless performed appropriately.
2. Inappropriate as sole treatment for major lung collapse or consolidation.
3. Hyperventilation.
4. Discomfort secondary to inadequate pain control.
5. Hypoxia secondary to interruption of prescribed oxygen therapy.
6. Exacerbation of bronchospasm.
7. Fatigue.

Equipment:

Incentive spirometer

Personnel:
Cardiopulmonary Services
General Procedures
Proc7.10

1. All Respiratory Care Practitioners (RCP’s); Respiratory Technicians I and II, Respiratory Therapists I and II shall provide initial education with follow up monitoring of proper performance.

2. Nursing and physician personnel may assist with follow up monitoring of proper performance.

Procedure:

1. Upon verifying the order for incentive spirometry, the RCP should identify patient by comparing hospital and billing numbers on the armband to those on the physicians’ orders for therapy.

2. The RCP shall introduce himself/herself to the patient and explain the procedure, its indications, goals, and possible complications.

3. Set the pointer of the incentive spirometer at the target volume.

4. Have the patient exhale normally, place his/her lips tightly around the mouthpiece, and demonstrate a slow, deep breath, sustained for at least 3 seconds, while observing the plunger for maximum inflation. Have the patient perform 5 to 10 efforts.

5. The maximum achieved volume shall be used to track daily performance/improvement.

   Preoperative instruction shall identify the maximum volume, to be used as a postoperative target/goal.

6. Instruct the patient to independently repeat this procedure every 1 to 2 hours while awake. Direct supervision of every patient performance is not necessary once the patient has demonstrated mastery of the technique.

7. Follow up monitoring of performance shall be done as follows:

   Patients who meet one or more of the listed indications for therapy shall be monitored QID X 3 days. The patient will be instructed to perform the procedure every 1 to 2 hours while awake. (Incentive spirometry shall be additionally monitored at each patient contact, such as during other ordered procedures.)

   Patients who meet none of the listed indications for therapy shall be monitored Qday X 3 days. The patient will be instructed to perform the procedure every 1 to 2 hours while awake. (Incentive spirometry shall be additionally monitored at each patient contact, such as during other ordered procedures.)

8. Charting of assessment and procedures shall be done on the Cardiopulmonary Services Progress Flowsheets in the patient’s chart.

9. Age appropriate considerations include assessing the patient’s ability to comply with the procedure.

Infection Control:

1. The incentive spirometer is a single patient device and shall be discarded after the patient’s discharge from the hospital.

2. Standard universal precautions shall be used.

References:

1. AARC Clinical Practice Guidelines.

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