The University Hospitals and Clinics The University of Mississippi Jackson, MS	**RESPIRATORY CARE POLICY AND PROCEDURE MANUAL**	MANUAL CODE: -
SUBJECT: Aerosolized Medication Therapy		
Effective Date: June 30, 1990	Revised Date: January 23, 2008	Page 1 of 4
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I. Purpose

This policy should establish standards and procedures for administering aerosolized medication therapy.

II. Policy

A. Aerosolized therapy is indicated when:
   1. Pulmonary function studies and/or physical examination data establishes the presence of bronchospasms or an obstructive airways disease reversible by inhalation of bronchodilator drugs
   2. Physical examination, laboratory data, chest x-ray or diagnostic bronchoscopy establishes presence of abnormal quantity or quality of bronchial secretion treatable by mucokinetic drugs or mucolytic agents
   3. Sputum induction is necessary to obtain a laboratory sample to aid in diagnosis
   4. Sputum induction is necessary to obtain a laboratory sample to aid in forming an antibiotic treatment plan
   5. Prophylactic treatment is necessary pre procedures in patients with established airway abnormalities

B. The objective of inhaled medication is to:
   1. Decrease rhonchi and wheezes over major bronchi and segmental bronchi post bronchodilator delivery.
   2. Decrease viscosity of sputum and increase sputum mobility
   3. Prevent bronchospasms
   4. Induce sputum

C. A physician's order is necessary to delivery aerosolized medication therapy.

D. The National Heart, Lung and Blood Institute's "Standards for Asthma Management" standards are used as guidelines for treating patients with asthma.

E. Inhaled medications may be given with small volume nebulizers; nebulizers with large reservoir, metered dose inhalers with or without spacers, intermittent positive pressure breathing machines (IPPB), or spin disk inhalers.

F. Hypertensive patients whose systolic pressure are above 180 mm Hg should not be given bronchodilator drugs via aerosol until the prescribing physician has been notified of the patient's condition.

G. Patients whose heart rate is in excess of 140 or more beats per minute should not be given bronchodilators until the prescribing physician has been notified of the patient's condition.
H. Precipitous increases in pulse rates >15% during treatment will be cause for discontinuing treatment.
I. Patients receiving aerosolized medication therapy should have their cardiopulmonary status evaluated daily to determine the effectiveness of therapy.
J. If oxygen is used to power aerosol devices for short-term treatments, applicable oxygen safety procedures must be observed.
K. The Supervisor may select appropriate administering devices based on the patient's individual need, if the device being used is inappropriate.
L. Aerosol treatments including the time, date, mode of therapy or device used, medications, sputum characteristics, breath sounds, and indications of effective cough must be recorded in the patient's chart post each treatment.
M. Aerosol medication delivery may be delivered intermittently or continuously.
N. Exclusive policies for continuous nebulization therapy (CNT) include:
1. Orders must state amount of medication to be given per hour in milliliters or milligrams.
2. Albuterol Sulfate may be give by CNT. *Albuterol dose is not to exceed 0.3ml/kg/hr.
3. Levalbuterol may be given via continuous nebulization with the mechanical ventilator.
4. Racemic epinephrine may be given via CNT with approval from one of respiratory care's medical directors. Each case will be assessed individually.
5. Terbutaline may be given via CNT with approval from one of respiratory care's medical directors. Each case will be assessed individually.
6. CNT should be delivered in a patient care setting that:
    a. can provide adequate monitoring by nurses and respiratory care practitioners
    b. can provide adequate telemetry monitoring such that available in an ER, an ICU, an ICU step-down, or a telemetry unit.
7. Patients should be monitored Q30 minutes during the first hour. Monitoring will include heart rate, respiratory rate, breath sounds, oxygen saturation and peak expiratory flow rate if applicable. Patients should be monitored PRN as necessary thereafter.
8. Documentation should be performed as often as necessary, but at minimum, every 3 hours. Documentation should include heart rate, respiratory rate, breath sounds and peak expiratory flow rate, if applicable.
9. CNT should not be discontinued unless the patient can tolerate Q2 intermittent bronchodilator therapy. If the patient requires more than four treatments at q1 intervals, the patient should be returned to CNT.
10. Information for dose capping obtained from: LeBonheur Children's Medical Center. C. Papo MD, MPH; J. Frank, RRT; A. Thompson MD, FCCM, "The prospective, randomized study of continuous versus intermittent nebulized albuterol for severe status asthmaticus in children." Critical Care Medicine (1993), Vol. 21, No.10, 1479.

III. Equipment
A. Small volume nebulizer
1. Small volume nebulizer
2. 0-15 liter per minute air or oxygen flow meter with nipple adapter

3. Oxygen connecting tube
4. Aerosol mask, tee-tube, or mouth piece
5. Medications

B. Large Volume Continuous Nebulizers
1. Large volume nebulizer
2. Flow meter via Oxygen/Air Blender
3. Corrugated Aerosol Tubing
4. Appropriate size face mask
5. Medication

C. Small Volume Continuous Nebulizer
1. Mini-Heart nebulizer
2. Aerosol tee-piece
3. Oxygen Tubing
4. 26 inch length of aerosol tubing
5. 15 mm adapter
6. Flow Meter via Oxygen/Air Blender
7. 2 bacterial static filters per two hours of use
8. Medication

D. Metered Dose Inhaler
1. Metered dose inhaler spacer or adapter
2. 15 mm adapter
3. Medication canister

E. Spin disk container with medication

F. Intermittent Positive Pressure Breathing Machine
1. Bird Mark series respirator
2. oxygen tubing
3. disposable circuit
4. corrugated tubing
5. bacterial filter
6. nebulizer medication
7. spirometer
8. nose clip (optional)
9. adapters: mask incubator, multi-access

IV. Procedure

A. Collect the necessary equipment and medication

B. Scan the patient's chart to determine the order, diagnosis, and pertinent history and physical data

C. Locate and identify the patient

D. Identify self and department to the patient

E. Provide patient family education

F. Wash hands

G. Don gloves

H. Assemble equipment and deliver therapy according to Respiratory Care's Clinical Assessment Skill checklists. See Appendix A for a complete collection of competencies.

1. Aerosol Medication Delivery
2. BiPAP Full Mask Continuous or Intermittent Treatment
3. Aerosol Medication Delivery with the MiniHeart Nebulizer
4. Aerosol Medication Delivery, Continuous with Heart Nebulizer
5. Aerosol Medication Delivery, Ventilated
6. Heliox with Bronchodilator Therapy

7. Intermittent Positive Pressure Breathing
8. Metered Dose Inhaler Delivery
9. Sputum Induction