

LOS ANGELES UNIFIED SCHOOL DISTRICT
Office of the Chief Medical Director
District Nursing Services

MECHANICAL NEBULIZER TREATMENT

I. GENERAL GUIDELINES

A. PURPOSE

1. To deliver medications directly into the lungs by means of aerosol instillation
2. To provide high humidity to loosen and facilitate the removal of pulmonary and bronchial secretions
3. To improve breathing by dilating the airway

B. GENERAL INFORMATION

Mechanical nebulizer operates with either compressed air or oxygen to convert liquid medications into a fine mist that is inhaled into the lungs through either a mask or mouthpiece. Bronchodilator medications may cause increased heart rate. Students may become jittery or shaky.

C. PERSONNEL

1. School nurse or school physician
2. Designated school personnel under the direct or indirect supervision of the school nurse

D. EQUIPMENT

1. Provided by parent/guardian:
 - a. Mechanical nebulizer compressor (battery operated or electrically powered) with mask or mouthpiece and a cup
 - b. Connection tubing
 - c. Medication(s) as ordered by physician
 - d. Normal saline (if ordered)
 - e. Appropriate adapter for student with tracheostomy
2. Provided by school:
 - a. Aluminum foil
 - b. Plastic bag for disposal of waste
 - c. Disposable, clean non-latex gloves
 - d. Liquid detergent for cleaning equipment

II. PROCEDURE

ESSENTIAL STEPS	KEY POINTS AND PROCEDURES
1. Wash hands.	
2. Assemble equipment and medications as ordered on aluminum foil on clean flat surface. Attach connection tubing to compressor.	May need to recharge battery.
3. Place student in sitting position.	This position facilitates lung expansion and aerosol dispersion. If student is unable to sit unsupported, position upright with pillows or hold student in upright position.
4. Take pulse and respirations.	Pulse and respirations are taken to establish baseline.
5. Put on gloves.	
6. Prepare and place medication in nebulizer cup and turn on machine.	Keep cup in upright position to prevent spillage. Watch for misting. If there is no misting, recheck connections and equipment. <u>Contact school nurse or parent immediately if nebulizer still does not mist.</u>
7. MOUTHPIECE: Have student put mouthpiece between teeth and close lips tightly around it. MASK: Place mask over nose and mouth and adjust elastic strap around the back of the head. FOR STUDENT WITH TRACHEOSTOMY: Connect appropriate adapter to tracheostomy tube and nebulizer.	Mask should fit snugly, covering nose and mouth.

ESSENTIAL STEPS	KEY POINTS AND PROCEDURES
8. Encourage student to breathe normally. Have student take several deep breaths during treatment.	Deep breathing moves medication into the lungs. If solution forms around sides of nebulizer cup, tap cup (while still in upright position) so fluid falls to bottom of cup and is used.
9. <u>Monitor student during the treatment.</u> <ul style="list-style-type: none"> • Observe for expansion of student's chest. • Every 2 minutes, have student take an extra deep breath or two, hold breath briefly, and then exhale as slowly as possible. Resume normal breathing until time for next deep breaths. • Observe for relief of breathing difficulties and/or adverse reactions 	Deep breaths ensure that medication is being delivered to the lower airways, not just the mouth. Bronchodilator may produce rapid heartbeat, palpitation, dizziness, nausea and excessive perspiration. Call school nurse immediately if student has any of these signs and symptoms. If no improvement in breathing or if any adverse reactions occur such as rapid heartrate, increased coughing, wheezing that gets worst, retractions, chest tightness or excessive secretions, nausea and dizziness; CALL 911.
10. When treatment is completed, remove mask/mouthpiece, or remove adapter from tracheostomy tube.	Continue the treatment until all the medication or fluid has been nebulized. Upon completion of treatment, have student take several deep breaths, cough and spit out secretions. Upon completion of treatment, have student take several deep breaths, cough and spit out secretions.
11. Turn off compressor.	
12. Return student to comfortable position.	
13. Observe student's respiratory status. Take pulse and respirations.	If student has hard breathing, retractions, is unable to walk or talk, lips or fingernail beds turn blue, <u>CALL 911.</u>

ESSENTIAL STEPS	KEY POINTS AND PROCEDURES
14. Clean equipment after use.	Daily cleaning: All parts of the nebulizer (including cup, mouthpiece/mask, adapter and connector) should be washed in <u>liquid detergent</u> and hot water then rinsed well. Do not wash tubing. Place on a clean dry towel. Allow to air dry. Do not store in closed plastic bag. Inspect compressor cord and plug weekly and report signs of wear or fraying to parent/guardian.
15. Remove gloves and wash hands.	Universal Precautions require all waste material to be double bagged.
16. Document procedure and medication administered.	Indicate date, time, pulse rate, respiration rate and effort and student's reaction to treatment. Report ant unusual observations to the school nurse.

APPROVED:

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Date



Rosina Franco, MD
Senior Physician, Student Medical Services



Ron Tahimura, Ed.D
Director, Student Medical Services



Sosse Bedrossian, MSN, MA, RN, FNP
Director, District Nursing Services

REFERENCES:

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