

Administration of Updraft/Nebulizer Treatments



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Course Objectives

The participants shall:

1. Identify side-effects of common nebulizer medications
2. Verbalize respiratory assessment components completed before and after nebulizer treatments
3. Demonstrate the correct procedure for the administration of Updraft/Nebulizer Treatments.



Course Outline

- ✓ Nursing Services
(Description of target individual/group)
- ✓ What is Updraft/Nebulizer Therapy?
(Learning assessment needs of target/individual or group)
- ✓ Why is Updraft/Nebulizer Therapy ordered?
(Learning readiness behaviors and other relevant assessment, i.e. environment, that will affect planning and implementation of teaching)
- ✓ Medications
(Learner objectives)
- ✓ Demonstration of Updraft/Nebulizer Treatment
(Specific content to be taught)
- ✓ Questions/Answers
(Teaching actions/strategies including aides)
- ✓ Short Quiz
(Evaluation strategies)



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Medicare Cost Reimbursement

Medicare made changes to the method by which facilities are reimbursed for the care and services provided to residents who are admitted to a Medicare Skilled Care Unit when PPS was implemented.

Under the old payment system, respiratory therapy services, and equipment and nursing time could be billed separately to Medicare. Under PPS, the Centers for Medicare & Medicaid stated that nurses could provide nebulizer treatments with training and therefore they would no longer cover Respiratory Therapy services separately.

Under the new system, the facility receives one daily rate to take care of all the resident's needs during his/her stay in the Medicare. These services include nursing care, PT, OT, & ST, equipment, medications, lab, etc. This daily rate is based upon the skilled needs of the resident. To determine the daily rate the facility will be reimbursed, the facility must thoroughly assess the resident, utilizing MDS (Minimum Data Set) Assessment Tool. Respiratory Therapy is on the MDS and can be coded and covered as a daily skilled service. The treatments are billed in 15 minute intervals.

The MDS states that in order for Respiratory Therapy to be coded and considered a skilled service, "Therapy services that are provided by a qualified professional (respiratory therapists, trained nurse) . . . include aerosol treatments. You must count only the time that the qualified professional spends with the resident. A trained nurse may perform the assessment and treatments when permitted by the state nurse practice act" (HCPro, 2009).

If the resident does it by themselves, then it is NOT considered a skilled treatment. Residents MUST have a "Medication Self Administration Assessment" completed prior to self-administering their own nebulizer treatments.

"What Does This Have To Do With Me?"

Years ago, CMS Medicare removed Respiratory Therapists from the list of skilled therapy providers that are covered for reimbursement. In an effort to contain costs, CMS determined that nurses were capable of providing respiratory nebulized aerosol respiratory medication per "updraft therapy" and the respiratory assessments. These services include nebulizer or aerosolized medication treatments, CPT (chest percussion therapy), oxygen administration, observation, assessment and documentation.

As with Intravenous Therapy, licensed nurses are usually not taught how to provide nebulized aerosol medication administration and most nurses learn on the job but not with a formalized training process.

Nurses should have documentation to reflect that they have been adequately trained in the correct procedures for the administration of nebulizer or aerosolized medication treatment administration, respiratory assessment, and documentation of both. The Texas State Board of Nursing states under Rule 217.11 Standards of Nursing Practice that a LVN, "May perform other acts that require education and training as prescribed by board rules and policies, commensurate with the licensed vocational nurse's experience, continuing education, and demonstrated licensed vocational nurse competencies" (Texas State Board of Nursing, 2007)

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Updraft/Nebulizer Therapy

Updraft Therapy, otherwise known as “Nebulized Aerosol Treatment”, is the process of dispensing a fine mist of saline bronchodilators into the bronchioles of the lungs.

Nebulized aerosols actions include:

1. Relieve Bronchospasms,
2. Decrease Mucosal Edema and
3. Liquefy Bronchial Secretions.

The main objective of treatment is to improve the quality of life, and to treat obstructed airways so as to relieve hypoxia (lack of oxygen).

If the treatment is administered correctly, the particle size in the aerosol mist is small enough to allow the medication to go deep within the tracheobronchial tree. This helps to clear the airways, improve ventilation, control the inflammatory process, and it gives the resident quick relief.

Most Common Medications

• **Albuterol** (Proventil, Ventolin) is the most commonly prescribed medication for use with Neb Therapy, short acting airway smooth muscle relaxer (Epocrates Medical Information Team, 2009)

• **Atrovent** (Ipratropium) bronchodilator (Epocrates Medical Information Team, 2009)

• **Duoneb** (Albuterol/Atrovent) (Epocrates Medical Information Team, 2009)

• **Xopenex** (Levalbuterol) short acting airway smooth muscle relaxer. Newer medication on the market but very expensive and often requires prior approval to be provided first.



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Albuterol- fast acting bronchodilator

Uses:

Bronchial asthma, bronchospasms associated with bronchitis, emphysema, or other obstructive pulmonary diseases.

How Supplied:

It is prescribed as 2.5 mg (0.5 ml of 0.5% solution) and is diluted to 3 ml with 0.9% NaCl (Sodium Chloride). This is dispensed in a unit dose vial.

Most Common Adverse Reactions:

Palpitations/Tachycardia, increase in blood pressure, dysrhythmias, heartburn, nausea/vomiting, restlessness/nervousness, muscle cramps, dry mouth/nose, gastric irritation, flushing and diuresis.

****Major Adverse Effects of Albuterol—Beware – this medication can precipitate angina and dysrhythmias****

Contraindications:

Prior allergic reaction to Albuterol, Cardiac dysrhythmias associated with tachycardia.

Interactions/incompatibilities:

Antidepressants may potentiate the effects on the vasculature. Albuterol may potentiate diuretics leading to diuresis causing hypokalemia.

Onset/Duration:

Onset: 5-15 minutes after inhalation

Duration: 3-4 hours after inhalation

Atrovent (Ipratropium bromide)- short acting anticholinergic

Uses:

For maintenance treatment of bronchospasm associated with chronic obstructive pulmonary disease (COPD), including chronic bronchitis and emphysema.

How Supplied:

As a unit-dose vial containing 500 mcg ipratropium bromide anhydrous in 2.5 ml normal saline.

Most Common Adverse Reactions:

Tachycardia, palpitations, eye pain, urinary retention, urinary tract infection and urticaria. Cases of precipitation or worsening of narrow-angle glaucoma, mydriasis, and acute eye pain. Headache, mouth dryness and aggravation of COPD symptoms are more common when the total daily dose of Ipratropium bromide equals or exceeds 2,000 mcg.

Allergic-type reactions such as skin-rash, angioedema of tongue, lips and face, urticaria, laryngospasm and anaphylactic reaction have been reported.

Contraindications:

In known or suspected cases of hypersensitivity to ipratropium bromide, or to atropine and its derivatives.

Onset/Duration:

Onset: 20-30 minutes after inhalation

Duration: 6-8 hours after inhalation

Xopenex (Levalbuterol)

This is a fast acting bronchodilator equivalent to Albuterol but is said to have fewer side effects. It is also more expensive than Albuterol.

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Always wash your hands before and after therapy

1. Gather Your Equipment:

- Nebulizer Compressor
- Disposable Nebulizer kit with face mask or mouthpiece
- Medication

2. Assess your patient:

- Obtain a baseline blood pressure and pulse
- Listen to the lung sounds
- Count respirations and assess the breathing pattern
- Assess for cough and sputum production

3. Place nebulizer compressor on a flat, sturdy surface.

4. Pull out the power cord from the back.

5. Switch should be in the “off” position.

6. Unpack the disposable nebulizer components and connect one end of the tubing to the tubing outlet.

7. Assemble all components and add the prescribed medication to the top of the nebulizer.

8. Insert the mouthpiece or face mask into the nebulizer and connect the tubing to the inlet on the bottom of the nebulizer.

9. Push switch to the “on” position.

10. Instruct the resident to place the mouthpiece between the teeth, having him/her then close their mouth. Or place the face mask on the patient’s face.

11. Instruct the resident to periodically slowly inhale deeply and hold their breath briefly. Then exhale which will aid in getting the medication deep into the lungs. Repeat this procedure until the medication is completely gone.

12. Periodically tap the medication cup to ensure that the medication is nebulizer completely.

13. Monitor to determine when all the medication has been inhaled by looking at the medication chamber for any remaining medication. Also looking at the end of the corrugated aerosol tube or face mask for any mist.

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14. Assess your patient:

- Obtain a blood pressure and pulse
- Listen to the lung sounds
- Assess for cough and sputum (color and consistency)
- Assess for any complication as discussed in adverse effects

15. Chart how the resident is able to complete the procedure and document your assessment.

*The same nebulizer compressor may be used for more than one resident only if it is disinfected between residents.

Adverse Reaction:

- Heart rate 20 beats per minute higher than starting heart rate
- Breath rate 10 breaths per minute higher than starting breath rate

References

Epocrates Medical Information Team. (2011). *Duoneb*. Retrieved August 18, 2011, from Epocrates Online: <http://www.epocrates.com>

HCPPro. (2009). *MDS 2.0 RAI User's Manual* (2009 Edition ed.). Marblehead: HCPPro.

Texas State Board of Nursing. (2007, November 15). *Standards of nursing practice*. Retrieved March 20, 2010, from Texas State Board of Nursing: <http://info.sos.state.tx.us>

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Questionnaire

1. **The main objectives of nebulizer treatments include:**
 - a. to improve the quality of life
 - b. to treat obstructed airways
 - c. to relieve hypoxia
 - d. All of the above

2. **Major adverse effects of Albuterol may be**
 - a. Shortness of breath and coughing
 - b. Angina and dysrhythmias
 - c. Low blood pressure and heart rate
 - d. Nausea and vomiting

3. **Proper resident instructions for nebulizer treatment includes:**
 - a. Constantly breath in and out deeply throughout the treatment
 - b. Just breath normally throughout the treatment
 - c. Periodically breath in slowly and deeply, then hold it for a few seconds
 - d. Take rest periods from breathing in the aerosolized medication

4. **You will know that all the medication has been inhaled when:**
 - a. Fifteen (15) minutes has passed
 - b. Mist is no longer coming out the end of the chamber
 - c. The patient is no longer cooperative
 - d. There are only liquid drops on the inside of the chamber