



Oxygen Administration

Key Terms

Dyspnoea	Hypoxemia	Humidifier
Venturi mask	Anxiety	Cannula

DEFINITION:

Method by which oxygen is supplemented at higher percentages than what is available in atmospheric air.

PURPOSE:

1. To relieve dyspnoea
2. To reduce or prevent hypoxemia and hypoxia
3. To alleviate associated with struggle to breathe

SOURCES OF OXYGEN:

Therapeutic oxygen is available from two sources

1. Wall Outlets(; Central supply)
2. Oxygen cylinders

EQUIPMENTS REQUIRED:

2. Oxygen connecting tube (1)
3. Flow meter (1)
4. Humidifier
5. Oxygen source: Wall Outlets or Oxygen cylinder
6. Tray with nasal cannula of appropriate size or oxygen mask (1)

7. Kidney tray (1)

8. Adhesive tape

9. Scissors (1)

11. Gauze pieces, Cotton swabs if needed

CHARACTERISTICS OF LOW FLOW SYSTEM OF OXYGEN ADMINISTRATION

Method	Flow rate (L/min)	Oxygen concentration delivered	Advantages	Disadvantages
Nasal cannula	1	22-24 %	<ul style="list-style-type: none"> • Convenient • comfortable more than face mask • bring less anxiety • Allows client to talk and eat • Mouth breathing does not affect the concentration of delivered oxygen 	<ul style="list-style-type: none"> • Assumes an adequate breathing pattern • Unable to deliver concentrations above 44 %
	2	26-28 %		
	3	28-30 %		
	4	32-36 %		
	5	36-40 %		
	6	40-44 %		

Face mask	5-6	40 %	<ul style="list-style-type: none"> • Can deliver high concentration of oxygen more than nasal cannula 	<ul style="list-style-type: none"> • May cause anxiety • Able to lead hotness and claustrophobic • May cause dirty easier, so cleansing is needed frequently • Should be removed while eating and talking • Tight seal or long wearing can cause skin irritation on face
	6-7	50 %		
	7-8(10)	60 %		
Venturi mask			<p>This prevents the inhalation of mixed gases.</p> <p>The approximate oxygen received is 99 per cent</p>	
High concentration oxygen masks	10-15 litres required			

PROCEDURE:**NASAL CANNULA METHOD**

S.NO	NURSING ACTION	RATIONALE
1.	Check doctor's prescription including date, time, flow liter/minute and methods	To avoid medical error
2.	Perform hand hygiene and wear gloves if Available	To prevent the spread of infection
3.	Explain the purpose and procedures to the Patient	Providing information fosters the client's cooperation and allays his/her anxiety
4.	Assemble equipments	Organization facilitates accurate skill performance
5.	Prepare the oxygen equipment: 1)Attach the flow meter into the wall outlet or oxygen cylinder 2)Fill humidifier about 1/3 with sterile water or boiled water 3)Blowout dusts from the oxygen cylinder 4)Attach the cannula with the connecting tubing to the adapter on the humidifier	Humidification prevents drying of the nasal mucosa To prevent entering dust from exist of cylinder to the nostril
6.	Test flow by setting flow meter at 2-3L/minute and check the flow on the hand.	Testing flow before use is needed to provide prescribed oxygen to the

		client
7.	Adjust the flow meter's setting to the ordered flow rate.	The flow rate via the cannula should not exceed 6L/m. Higher rates may cause excess drying of Nasal mucosa.
8.	Insert the nasal cannula into client's nostrils, adjust the tubing behind the client's ears and slide the plastic adapter under the client's chin until he or she is comfortable.	Proper position allows unobstructed oxygen flow and eases the client's respirations
9.	9. Maintain sufficient slack in oxygen tubing	To prevent the tubing from getting out of place Accidentally
10.	Encourage the client to breathe through the nose rather than the mouth and expire from the mouth	Breathing through the nose inhales more oxygen into the trachea, which is less likely to be exhaled through the mouth
11.	Initiate oxygen flow	To maintain doctor's prescription and avoid oxygen toxicity
12.	Assess the patient's response to oxygen and comfort level.	Anxiety increases the demand for oxygen
13.	Dispose of gloves if you wore and perform hand hygiene	To prevent the spread of infection
14.	Document the following: Date, time, method, flow rate, respiratory	Documentation provides coordination of care

	condition and response to oxygen	Sometimes oxygen inhalation can bring oxygen intoxication.
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OXYGEN MASK METHOD

S.NO	NURSING ACTION	RATIONALE
1.	Perform hands hygiene and put on gloves if available	To prevent the spread of infection
2.	Explain the procedure and the need for oxygen to the client.	The client has a right to know what is happening and why. Providing explanations alley his/her anxiety
3.	.Prepare the oxygen equipment: 1)Attach the humidifier to the threaded outlet of the flowmeter or regulator. 2)Connect the tubing from the simple mask to the nipple outlet on thhumidifier 3)Set the oxygen at the prescribed flowrate.(for non rebreathing mask fill the reservoir with air)	To maintain the proper setting The oxygen must be flowing before you apply themask to the client
4.	To apply the mask, guide the elastic strap over the top of the client's head. Bring the	This position will hold the mask most firmly

	strap down to just below the client's ears.	
5.	Gently, but firmly, pull the strap extensions to center the mask on the client's face with a tight seal.	The seal prevents leaks as much as possible
6.	Make sure that the client is comfortable.	Comfort helps relieve apprehension, and lowers oxygen need
7.	Remove and properly dispose of gloves. Wash your hands	Respiratory secretions are considered contaminated
8.	Document the procedure and record the client's reactions.	Documentation provides for coordination of care
9.	Check periodically for depresses respirations or increased pulse.	To assess the respiratory condition and find out any abnormalities as soon as possible

Performing Nebulizer Therapy

Definition:

Nebulizer Therapy is to liquefy and remove retained secretions from the respiratory tract. A nebulizer is a device that a stable aerosol of fluid and/or drug particles.

Purpose:

1. To relieve respiratory insufficiency due to bronchospasm
2. To correct the underlying respiratory disorders responsible for bronchospasm
3. To liquefy and remove retained thick secretion form the lower respiratory tract
4. To reduce inflammatory and allergic responses the upper respiratory tract
5. To correct humidify deficit resulting from inspired air by passing the airway during the use of mechanical ventilation in critically and post surgical patients

Types of nebulizer:

1. Inhaler ormeterd-dose nebulizer
2. Jet nebulizer
3. Ultrasonic nebulizer

a. Inhaler**Equipments required:**

1. Dr.'s order card, client's chart and kardex
2. Inhaler (1)
3. Tissue paper
4. Water, lip creamas required

s.no	Nursing Action	Rationale
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1.	Perform hand hygiene	To prevent the spread of infection
2.	Prepare the medication following the Five rights of medication administration: Right drug Right dose Right route Right time Right client Right documentation	Strictly observe safety precautions to decrease the possibility of a medication error
3.	Explain to the client what you are going to do.	Providing explanation fosters his/her cooperation and allays anxiety
4.	Assist the client to make comfortable position in sitting or semi-Fowler position.	Upright position can help expanding the chest
5.	Shake the inhaler well immediately prior to use	Shaking aerosolizes the fine particles
6.	Spray once into the air.	To fill the mouth piece
7.	Instruction to the client: <ul style="list-style-type: none">• Instruct the client to take a deep breath and exhale completely through the nose• The client should grip the mouthpiece with the lips, push down on the bottle,	

	<p>and inhale as slowly and deeply as possible through the mouth.</p> <ul style="list-style-type: none"> • Instruct the client to hold his/her breath for adult 10 seconds and then to slowly exhale with pursed lips • Repeat the above steps for each ordered “ puffs”, waiting 5-10 seconds or as prescribed between puffs. • Instruct the client to gargle and wipe the face if needed. 	<p>The procedure is designed to allow the medication to come into contact with the lungs for the maximum amount of time</p> <p>This method achieve maximum benefits</p> <p>Gargling cleanse the mouth. When steroid remains inside the mouth, infection of fungus may occur.</p>
8.	Replace equipments used properly and discard dirt	To prepare for the next procedure prevent the spread of infection
9.	Perform hand hygiene.	To prevent the spread of infection

- Document the date, time, amount of puffs, and response.
- Report any findings to a senior staff.

Equipments required:

1. Dr.'s order card, client's chart and kardex
2. Ultrasonic nebulizer (1)
3. Circulating set-up (1)
4. Sterilewater
5. Mouthpiece or oxygenmask (1)
6. Prescribed medication
7. Sputummug if available (1)
8. Tissue paper
9. Water, lip creamas required

s.no	Nursing action	rationale
1.	Check the medication order against the original Dr's order	To ensure that you give the correct medication to the correct client
2.	Perform hand hygiene	To prevent the spread of infection
3.	Prepare the medication following the Five rights of medication administration: Right drug Right dose Right route Right time	Strictly observe safety precautions to decrease the possibility of a medication error

	<p>Right client</p> <p>Right documentation</p>	
4.	Explain to the client what you are going to do	Providing explanation fosters his/her cooperation and allays anxiety.
5.	Assist to the client to a make comfortable position in sitting or semi-Fowler position.	Upright position can help expanding the chest
6.	<p>Setting the nebulizer:</p> <p>1) Plug the cord into an electrical outlet</p> <p>2) Fill the nebulizer chamber with the ordered amount of medication</p> <p>3) Turn on the nebulizer at the prescribed time</p>	To ensure that you give the correct amount of medication
7.	<p>Instructing the client during nebulization:</p> <p>1) Instruct the client to close the lips around the mouthpiece and to breathe through themouth</p> <p>2) Instructing the client to continue the treatment until he/she can no longer see a mist on exhalation from the opposite end of the mouthpiece or vent holes in the mask</p>	<p>If the client is using a mask, he/she may breathe normally</p> <p>To ensure that the client inhales the entire dose</p>

	Encourage the client to partially cough and expectorate any secretions loosed during the treatment	
8.	<p>After nebulization finished,</p> <p>Turn off the nebulizer and take off the cord from the electrical outlet.</p> <p>Instruct the client to gargle and wipe the face if needed.</p> <p>Apply lip cream if needed.</p> <p>Disinfect the nebulizer by alcohol swab.</p> <p>Rinse and dry it after each use</p>	<p>Gargling cleanse the mouth. When steroid remains inside the mouth, infection of fungus</p> <p>Applying lip cream provide moisten on lips.</p> <p>To avoid contamination</p> <p>To prepare for the next procedure</p>
9.	Replace equipments used properly and discard dirt.	To prepare for the next procedure and prevent the spread of infection
10.	Performhand hygiene.	<input type="checkbox"/> To prevent the spread of infection

Document the date, time, type and dose of medication, and response.

