

# ADMINISTRATION OF OXYGEN

## PURPOSE

- To prevent Hypoxia.
- To promote comfort and breathing efficiency.

## APPLIES TO

- Registered Nurses
- Licensed Practical/Vocational Nurses
- Therapists
- Other (Identify): \_\_\_\_\_

## EQUIPMENT/SUPPLIES

- Oxygen supply source and delivery device.
- Oxygen flow meter/gauges.
- Portable cart for small cylinder, liquid oxygen portable unit, and cart.
- Carrying shoulder cases or strap for tank or liquid oxygen portable unit.
- Humidifier with tubing (permanent or disposable), adapters, if ordered.
- Oxygen analyzer.
- Cannula with extra on hand; selection for comfort and protection of skin and mucous membranes.
- Reservoir cannula, if used.
- Venturi or Bi-Flo mask, if ordered.
- Water-soluble lubricant.
- Catheter for transtracheal devices, if used.
- Extra delivery system supplies on hand.
- Mild soap, warm water for cleansing delivery adjuncts.

## SPECIAL CONSIDERATIONS

Oxygen is used conservatively in clients with chronic lung disease because high levels of oxygen may suppress breathing stimuli.

1. Signs and Symptoms of Hypoxia:
  - a. Restlessness.
  - b. Headache.
  - c. Visual disturbances.
  - d. Confusion or change in behavior.
  - e. Increased respiratory rate.
  - f. Increased heart rate.
  - g. Elevated blood pressure.
  - h. Shortness of breath (dyspnea).
2. Advanced Symptoms:
  - a. Decreased blood pressure.
  - b. Decreased heart rate.
  - c. Cyanosis Metabolic acidosis.
3. Chronic Symptoms:
  - a. Clubbing of fingers and toes.
  - b. Right sided heart failure.
  - c. Thrombosis.
  - d. Polycythemia (excess number of red blood cells).

## PROCEDURE

1. Obtain orders from the primary care physician for:
  - a. Type of oxygen therapy.
  - b. Administration device and liter flow rate or concentration.
  - c. Arterial blood gas values, if available.
  - d. Respiratory therapy consultation (as ordered).
2. Discuss the indications, purposes, and anticipated outcomes of oxygen therapy with the client and family.

3. Evaluate the client's oxygen needs:
  - a. Prescribed flow rate or concentration.
  - b. Desired portability.
  - c. Humidity requirements.
  - d. Continuous or intermittent use.
4. Select an oxygen delivery system:
  - a. High-pressure cylinder.
  - b. Oxygen concentrator.
  - c. Liquid oxygen system.
5. Coordinate order and delivery of equipment and supplies with the vendor. Follow vendor and manufacturer instructions for equipment operation.
6. Teach or review oxygen safety precautions with the client and family:
  - a. Do not smoke.
  - b. Do not use oxygen near stove, space heater or heat source.
  - c. Do not use electric blankets or heating pads.
  - d. Do not use polyester or nylon bed linens or clothing. Instead, use all cotton bed linens and clothing to prevent static electricity.
  - e. Make sure that all electrical equipment is properly grounded.
  - f. Avoid the use of alcohol and oil-containing skin care products because they are flammable.
  - g. Do not run oxygen tubing under clothes, bed linens, furniture, rugs, etc.
  - h. Keep the oxygen container upright.
  - i. Turn off the oxygen when it is not in use.
  - j. Alert the local fire department and rescue squad about the use and storage of oxygen in the home.
7. Wash hands. Refer to the Hand Washing procedure.

**Nasal Cannula Administration**

You may deliver up to 6L/minute and allow a range of oxygen concentration of 22-40%. Humidification of low-flow oxygen through nasal cannulae is not considered essential and may be contraindicated because it supports bacterial growth.

1. Assemble regular cannula with prongs and tubing, cannula with Oxy-Ears, or cannula with nose pads around nasal prongs.
2. Place straight prongs into nares with smoother side against skin. Curve prongs downward into nares.
3. Place cannula tubing snugly around each ear and under the chin.
4. Adjust to fit securely under chin or by elastic around head. Pad tubing with gauze on face and ears as needed.
5. Apply natural or K-Y gel to nasal passages to prevent friction. *(Use only water soluble products and not petroleum based. Petroleum products are combustible, not absorbed by the body, and difficult to clear from the mucosa).*
6. Set flow rate and turn on oxygen supply.

#### Face Mask Administration

**Four Types of Masks:** Simple face mask, partial rebreather mask with reservoir bag, non-rebreather mask with reservoir bag, venturi mask used specifically to control oxygen concentration.

1. Assemble mask and tubing.
2. Select a mask that fits the client snugly and offers correct oxygen concentration.
3. Place pads around mask if face lacks supporting tissue or is edematous. Pad elastic straps with gauze for comfort.
4. Turn on oxygen flow to liters prescribed. If reservoir bag is attached, partially inflate it with oxygen. Oxygen flow must be at a level to prevent the bag from collapsing. *(A tight fit prevents oxygen from escaping around the eyes or nose.)*
5. Remove mask and use cannula when eating.
  - a. Change mask and tubing per agency policy and provide skin care to face.
  - b. Check equipment frequently. If a humidifier is attached maintain appropriate water level.

#### RELATED PROCEDURES

Suctioning-All, Pulse Oximetry, Arterial Blood Gas Sampling