All Respiratory Care practitioners and staff technicians dealing with the following equipment shall use the assembly methods described below.

(B) Purpose of Policy

To ensure safe set up and operation of the following equipment.

(C) Procedure

The following are instructions for the set up and use of equipment to be used by the Respiratory Care Department Guidelines listed below are according to manufacturer suggestions as well as accepted standards of practice:

1. Cold Aerosol Oxygen Deliveries:
   Disposable aerosols are used for the administration of humidified oxygen ranging from oxygen concentration (FiO2) of 21% to 100%.
   a. A flow top and its water return tube should be connected to the top of a pre-filled container of sterile water.
   b. The flow top with the container of sterile water should then be attached to the appropriate gas outlet, pressure regulator or N.C.G. medical gas outlet.
   c. The flow top should be adjusted to the prescribed FiO2 and turned on with the flow of gas corresponding to the appropriate FiO2 (between 5 and 10 liters per minute).
   d. Corrugated tubing is attached from the flow top to either a 1- piece, trach collar, face mask or face tent.
   e. Heater systems for increased airway humidification purposes may be used when ordered by a physician, however they must be monitored for a temperature between 30 and 34 degrees Celsius.

2. Mainstream nebulizers used for Intermittent Positive Pressure Breathing (IPPB):
   a. The mainstream nebulizer is pneumatically powered via a 50 psi oxygen or air source, with FiO2 capabilities of either .21, .40 or 1.0.
   b. There are two outlet ports to which the breathing circuit tubing should be connected. A large-bore mainstream port, which should always be used with a disposable filter; and a small-bore high pressure nebulizer port.
   c. Variable parameters which influence IPPB treatments (i.e. flow, peak pressures, inspiratory
and expiratory time, and sensitivity) should be such that the patient receives the most comfortable treatment possible, while still receiving maximum inspired volume from the administration of a positive pressure breathing treatment.

d. The patient should be monitored for pulse, respiratory rate, breath sounds, adverse reactions and general tolerance of treatment.

3. The up-draft or hand-held nebulizer, used for the aerosolization of medications:
   a. The Up-Draft Nebulizer is a disposable plastic device driven by a medical gas source of either air or oxygen at 8 liters per minute, or manufacturer’s recommended flow.
   b. The medical source gas is connected to the nebulizer and a T-piece for administration via face mask, face tent, trach collar, endotracheal tube, ventilator circuit, or mouthpiece.
   c. The patient should be monitored for pulse, respiratory rate, breath sounds, adverse reactions and general tolerance of treatment.

4. The ConchaTherm Neptune humidifier, used to humidify gas delivered by mechanical ventilators, and other situations where heated humidification is indicated:
   Heated Wire mechanical ventilator system and High Flow oxygen system:
   The ConchaTherm system will be operated according to manufacturer’s recommendations.

5. Helium, in conjunction with no less than 21% oxygen for therapeutic purposes:
   a. Cold aerosol with variable FIO2 ranges.
   b. Oxygen flow meter.
   c. Large bore aerosol tubing (approximately 6 feet).
   d. Helium tank (H cylinder).
   e. Helium high pressure regulator (Argon regulator).
   f. Briggs adaptor with oxygen barb.
   g. Oxygen analyzer.
   h. A therapeutic gas delivery device; either oxyhood, mist tent, face tent or face mask.
   i. Bubble diffusion humidifier.

6. Assembly of equipment for helium administration:
   a. Plug in oxygen flow meter to oxygen outlet; attach cold aerosol and large bore tubing.
   b. Cut large bore tubing in half, between the oxygen source and the patient, reconnect with Briggs adaptor and oxygen barb assembly.
   c. Put the regulator on the helium tank, attach bubble diffusion humidifier and connect the helium to the oxygen barb using oxygen tubing.
   d. Turn flow on the oxygen flow meter to 10LPM and set FIO2 to 98%, so that a minimum amount of air is entrained.
   e. Analyze the oxygen concentration distal to the helium inlet.
   f. While analyzing the oxygen concentration, increase the flow of the helium to dilute the oxygen concentration to the ordered oxygen percentage.
   g. Attach the large bore tubing to the patient delivery device and place it on the patient.
   h. Analyze the oxygen concentration in-line continuously with an oxygen analyzer.
References: Operational manuals located in Respiratory Care.

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<td>Michael Taylor</td>
<td>4/4/2001</td>
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<tr>
<td>Vice President Clinical Services</td>
<td>1/6/2005</td>
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<tr>
<td>Director, Respiratory Care</td>
<td>3/5/2008</td>
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<tr>
<td>Daniel Barbee</td>
<td>3/9/2011</td>
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Policies Superseded by This Policy:

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