I. Purpose
   A. Establish practices and standards that will ensure delivery of quality care

II. Policy
   A. Acceptable criteria for high flow oxygen therapy are:
      1. An arterial blood gas sample on room air that demonstrates hypoxemia (PaO₂ below 60 mmHg, or below the normal range for the specific patient in question)
      2. An arterial saturation SaO₂ on room air below or equal to 92%
      3. Medical emergencies where symptoms are evident:
         a. tissue hypoxia may be reasonably expected to be part of the problem due to shock, pulmonary edema, or drug overdose
         b. Physical symptoms of tissue hypoxia (e.g., cyanosis, tachycardia, confusion, etc)
         c. Trauma victims with chest injuries, head injuries, blood loss, etc.
         d. Prophylactic use in-patients with symptoms, which indicate pending hypoxemia (e.g., suspected myocardial infarction).
      4. Additional indications for neonatal and pediatric use:
         a. Neonates < 1000grams requiring oxygen flow rates > 1lpm with adequate spontaneous breathing effort
         b. Neonates > 1000grams requiring oxygen flow rates > 2lpm with adequate spontaneous breathing effort
         c. Neonates or Infants with an oxygen requirement > 2lpm or > 50% with adequate spontaneous breathing effort
         d. Pediatric patients with an oxygen requirement > 4lpm or > 50% with adequate spontaneous breathing effort
   B. Objective for high flow oxygen therapy is:
      1. Correct hypoxemia
   C. Standards for high flow oxygen therapy are:
      1. When oxygen is ordered on an emergency basis or prophylactically, the need should be documented by arterial blood gas analysis or arterial oxyhemoglobin as soon as possible.
   D. High Flow Oxygen will be started immediately after receiving the physician’s order.
SUBJECT: High Flow Oxygen Delivery System

E. Documentation of the time of initiation of therapy, evaluation of the patient’s hypoxemia via arterial blood gases or pulse oximetry saturation, physical signs of cyanosis or response to a medical emergency, pulse rate, respiratory rate, liter per minute of oxygen flow and FIO₂ must be performed at each bedside visit.

F. The patient’s cardiopulmonary status should be evaluated routinely to determine the dosage of oxygen required.

G. The patient’s cardiopulmonary status should be evaluated at least twice daily to determine the dosage of oxygen required.

H. Patients on continuous oxygen therapy at an FIO₂ above 0.6 for more than 48 hours should be reevaluated to prevent overdosing.

I. Patients receiving oxygen therapy to treat hypoxemia should not be removed from oxygen without documentation of their ability to maintain an adequate PaO₂ or SaO₂ on room air.

J. Only sterile distilled water (sterile water, USP) will be used with humidifiers.

K. Oxygen delivery devices may be removed from patient’s room when the safety policy is deliberately and continuously violated by the patient. In cases where the oxygen is removed from the room, the physician will be notified.

III. Equipment

A. High Flow Nasal Cannula, Tracheal Adapter
   1. High Flow Oxygen flowmeter
      a. 0-60 lpm for most applications
      b. 0-15 lpm for pediatric and neonatal administration
   2. Blender
      a. High flow oxygen flowmeter may be attached
   3. Nipple adapter for non-humidified therapy
   4. Oxygen connecting tube
      a. 6-foot disposable oxygen tube
      b. Continuous bubble tubing cut to desired length
      c. Plastic Tubing Connector with 0.25 inch diameter
   5. High Flow Nasal cannula, or tracheal adapter appropriately sized
      a. Adult
      b. Pediatric
      c. Infant
   6. Sterile Water (minimum 300 mL) with IV pressure bag
   7. Single Limb Heated Circuit (F&P RT329 or RT202)
   8. Heating unit

IV. Procedure

A. Instituting High Flow Oxygen Therapy
   1. Collect the appropriate equipment
   2. Proceed with minimum delay to patient area
   3. Locate and scan chart to determine the order, diagnosis, documentation of hypoxemia, and pertinent history and physical
   4. Locate and identify the patient
   5. Identify self and department to the patient
   6. Explain prescribed therapy to the patient, oxygen safety
   7. Wash hands
   8. Apply gloves
   9. Explain safety precautions
SUBJECT: High Flow Oxygen Delivery System

10. Connect quick connect(s) (oxygen, air) into wall outlet
11. Assemble the RT329 (infants and pediatrics) or RT202 (adults) circuit
12. Plug MR850 humidifier into hospital grounded electrical outlet
13. Set the temperature on the heater to the non-invasive mode
14. Insert reservoir bag into the IV pressure bag
15. Aseptically attach delivery device to flowmeter
16. Set desired liter flow
   a. Infant – maximum flow rate 7 lpm
   b. Pediatric – maximum flow rate 8 lpm
   c. Adult – maximum flow rate 50 lpm
17. Assure proper function of equipment
18. If appropriate, obtain room air saturations and evaluate patient for Oxygen Therapy Weaning Guideline
19. Apply oxygen delivery device to the patient
20. Monitor patient’s heart rate and respiratory rate
21. If a pulse oximeter is in use note any change in oxygen saturation
22. Remove gloves
23. Wash hands before leaving the patient’s room
24. Complete appropriate documentation

B. Monitoring High Flow Oxygen Therapy
   1. Scan the worklist to determine pertinent patient demographic information
   2. Obtain patient medical information through report
   3. Locate and scan chart to verify the order, diagnosis, documentation of hypoxemia, and new developments of pertinent history and physical
   4. Locate and identify the patient
   5. Identify self and department to the patient
   6. Inform the patient of the purpose of the visit
   7. Wash hands
   8. Apply gloves
   9. Assess the patient’s vital signs to determine respiratory rate, pulse rate, saturation value and cyanotic state
10. Assess appearance and patency of nasal passage
11. Check equipment for proper function, adequate humidification fluid level, proper FlO2 or liter flow, and proper fit on patient
12. Circuit and oxygen delivery device should be changed out every seven days or following each patient use
13. Remove gloves
14. Wash hands before leaving the patient’s room
15. Complete appropriate documentation

C. Weaning Considerations:
   1. FlO2 should always be weaned first unless physician order dictates otherwise
   2. When desired FlO2 is achieved and physician’s order allows wean lpm as tolerated

D. Discontinuing Oxygen Therapy
   1. Criteria to consider for discontinuation of high flow delivery system
      a. Minimum FlO2 achieved and:
         (1) Flow rate is ≤ 1-2 lpm for neonates and infants
         (2) Flow rate is ≤ 3 lpm for pediatric patients
         (3) Flow rate is ≤ 15 lpm for adult patients
      b. In the presence of nasal thermal injury
      c. Neonatal patients no longer have indication for positive pressure flow
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<td>8.</td>
<td>Inform the patient that oxygen is being discontinued on his/her doctor's order or according to guideline criteria</td>
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<td>9.</td>
<td>Discard all disposable equipment</td>
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<td>10.</td>
<td>Remove all oxygen therapy equipment from the patient room</td>
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<td>Clean heating unit and disinfect when necessary and/or between each patient use</td>
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