Subject: PEDIATRIC OXYGEN ADMINISTRATION

Purpose: To discuss delivery of oxygen per nasal cannula, mask, hood, or tent.

Policies:
1. The set-up and administration of oxygen will be the responsibility of the Respiratory Care Practitioners and Licensed Nursing Personnel as evidenced by their scope of practice.
2. Maintain SpO2 per physician order (assuming normal hemoglobin content and no cardiac failure).
3. Monitor SpO2 per continuous oximeter or per physician order.
4. When indicated per SpO2 or ABGs, initiate humidified oxygen therapy with pediatric or intermediate infant size nasal cannula in order to maintain saturations per physician order.

OBJECTIVES:
1. Relief of hypoxemia.
2. Reduction of myocardial work.
3. Reduction of work of breathing.

INDICATIONS:
1. Clinical signs of poor oxygenation.
2. Demonstrated hypoxemia by SpO2 or blood gas analysis.

<table>
<thead>
<tr>
<th>TABLE 1: Estimation of FiO2/LPM</th>
<th>Pediatric Nasal Cannula</th>
<th>Pediatric Mask</th>
<th>O2 Tent</th>
</tr>
</thead>
<tbody>
<tr>
<td>LPM FiO2</td>
<td>LPM FiO2</td>
<td>LPM FiO2</td>
<td></td>
</tr>
<tr>
<td>0.5 22%</td>
<td>6.0 35%</td>
<td>10-15L+ 30-70%+</td>
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<tr>
<td>1.0 24%</td>
<td>7.0 42%</td>
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</tr>
<tr>
<td>2.0 28%</td>
<td>8.0 48%</td>
<td></td>
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</tr>
<tr>
<td>3.0 32%</td>
<td>9.0 54%</td>
<td></td>
<td></td>
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<tr>
<td>4.0 38%</td>
<td>10.0 60%</td>
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</tbody>
</table>

NOTE: The actual delivered FiO2 can vary considerably between patients. Because of the low inspiratory flow rates of infant and pediatric patients, less room air is entrained. This creates higher FiO2’s at what are considered low flow rates for adults.

PROCEDURE:
1. Check the patient’s chart for the physician’s order for the oxygen therapy.
2. Start patient monitoring with continuous oximeter.

NOTE:
1. NASAL CANNULA: Use humidified gas. Pediatric patients under three years may experience nasal irritation with flows greater than 4 lpm if delivered for a prolonged period.
2. PEDIATRIC MASK: Use humidified gas. Titrate between 6-10 lpm to keep saturations as per physician order. Do not decrease liter flow to mask below 6.
lpm. The mask can act as a reservoir for the accumulation of exhaled carbon monoxide if a minimum flow of gas (6 lpm) is not maintained.

3. MIST TENT: Use humidified gas. Minimum gas flow to tent is 10 lpm. Additional oxygen may be bled into the tent canopy with a second flow meter to increase FiO2 and maintain SpO2 per physician order. *Tents require a minimum gas flow of 10 lpm to keep exhaled CO2 at an acceptable level within the canopy.*

4. SPECIAL INFORMATION: Oxygen per “BLOW-BY” is not an acceptable mode for delivery of oxygen. Exception – attended short term delivery of O2 in emergencies

CONTRAINDICATIONS:
1. To Use of O2:
   a. No clinical indications for oxygen.
2. To Use of Nasal Cannula:
   a. Obstruction of the nasal passages
   b. Consistent non-compliance by patient
   c. Oral-nasal surgery or facial trauma
3. To Use of Mask:
   a. Consistent non-compliance by patient
   b. Oral-nasal surgery or facial trauma

HAZARDS:
1. Nasal irritation
2. Drying of nasal mucosa
3. Sinus pain
4. Failure to deliver oxygen due to accidental dislodgement of nasal cannula or mask.

Originated by: Respiratory Care Department
Effective date: 11/99
Authorized by: Director, Respiratory Care
Revision dates: 8/10, 10/10
Review dates: 07/01, 10/02, 05/07