HEALTH HOLDING

HAFER ALBATIN HEALTH CLUSTER
MATERNITY AND CHILDREN HOSPITAL

Department:	Pediatrics		
Document:	Multidisciplinary Policy and Procedure		
Title:	Administering Oxygen via Nasal Cannula or Simple Face Mask in Pediatrics		
Applies To:	All Pediatric Staffs and Respiratory Therapists		
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1. PURPOSE:

1.1 To improve tissue oxygenation.
1.2 To treat or prevent symptoms and manifestations of hypoxia.
1.3 To reduce myocardial oxygen demand.
1.4 To provide short term therapy in case such post anesthetic or surgical procedure.

2. DEFINITIONS:

2.1 **Nasal Cannula (Nasal Prongs)** – is the common low flow device use to administer oxygen. It consists of a rubber or plastic tube that extends around the face with curved prongs that fit into the nostril. It is lightweight and inexpensible method for low flow oxygen delivery (0.5 – 6 L/min).
2.2 **Simple Face Mask** – fit loosely over the nose and mouth. With oxygen flow rates between 4 and 10 L/min, simple masks can provide concentrations of oxygen between 35 and 50 percent, depending on the patient's respiratory rate and mask fit. The plastic mask itself serves as a reservoir for oxygen that is delivered through a small bore tube connected at the base of the mask. Exhaled gas escapes through holes (exhalation ports) on each side of the mask. Room air enters through these ports and mixes with oxygen, thereby decreasing the percentage of oxygen delivered to the patient.

3. POLICY:

3.1 Oxygen administration via nasal cannula is used for the delivery of oxygen from 1 to 4 litres per minute.
3.2 Oxygen administration via simple oxygen face mask is used for the delivery of oxygen from 6 to 10 L/min.
3.3 A Physician written order must specify the prescribed oxygen dosage and method of delivery.
3.4 Oxygen therapy must be administered by qualified Staff Nurse, Physician and Respiratory Therapist.
3.5 Oxygen must be humidified before it is delivered to the patient.
3.6 Patient on oxygen therapy must be connected to cardio – respiratory monitor.
3.7 Blood gas analysis should be monitored as ordered.
3.8 Safety precautions must be observed during oxygen therapy due to combustibility property that potentiates burning.

4. PROCEDURE:

4.1 Check Physician's order for oxygen administration and ensure that it includes oxygen flow rate and method of delivery.
4.2 Identify the patient by using two patient identifiers (4 names for Saudi/ complete name for Non – Saudi and the medical record number).
4.3 Assess the patient for signs of respiratory distress, hypoxia ad decreased level of consciousness.
4.4 Explain to the patient why oxygen is administered and how it will help the condition.
4.5 Connect the patient to cardio – respiratory monitor as baseline data.
4.6 Perform hand hygiene.
4.7 Assemble equipment.
4.7.1 Secure a functional oxygen regulator.

4.7.1.1 Remove any dust particles, to prevent them from being forced into the regulator.
4.7.1.2 Attach the flow meter to the wall outlet, exerting firm pressure. The flow meter should be an off position.

4.7.2 Fills the humidification reservoir with sterile water.
4.7.2.1 Make sure humidifier is clean before use.
4.7.2.2 When refilling humidifier bottles, discard any remaining water then fill with distilled water (do not 'top up').
4.7.2.3 Ensure all connections are tight and not cross threaded. A leak will result in less oxygen being delivered to the patient.
4.7.2.4 Place humidifier at a level below the patient's head.

4.7.3 Test the equipment for proper functioning.

4.8 Connect the oxygen tubing to flow meter outlet. Set the flow rate at the prescribed litres per minute before the mask or nasal prong is applied to the patient.

4.9 Nasal cannula/ nasal prongs:

Flowrate	FiO_2
1 L/min	21 – 24%
2 L/min	25 – 28%
3 L/min	29 – 32%
4 L/min	33 – 36%
5 L/min	37 – 40%

4.9.1 Select the appropriate size nasal prong for the patient's age and size. The prong size should be approximately half the diameter of the nares.
4.9.2 Clean both nares as needed.
4.9.3 Gently fit the prongs into the nostril making sure the curves of the prong follow the contour of nasal passage and adjust straps around ears for snug, comfortable fit.
4.9.4 Tape at the sides of the face, if the nasal cannula will not stay in place. Secure properly and avoid extending the tape near the eyes.
4.9.5 Ensure the tubing is under or over the patient's ear and behind the head. Anchor the tube by sliding the plastic ring up until the tubing is sitting comfortably around the patient's head. Care should be taken to keep nasal cannula tubing and straps away from the neck to prevent airway obstruction.
4.9.6 Assess the client's nares for encrustations and irritations. Apply a water soluble lubricant as required to soothe the mucus membranes.
4.9.7 Instill Normal Saline as ordered and suction as necessary.

4.10 Simple oxygen face mask:

Flow rate	FiO_2
4 L/min	35%
5 L/min	40%
6 – 7 L/min	50%
7 – 8 L/min	60%

4.10.1 Choose a mask of appropriate size that does not posed a pressure on the eyes. A small under mask volume is desirable to minimize rebreathing of exhaled gases.
4.10.2 Place the mask on the patient's face by applying from the nose over the chin. Make sure the mask fits snugly. There must be an air tight seal between the mask and the patient's face to ensure an adequate oxygen delivery.

4.11 Assure patient comfort and tolerance. Infants and children may not tolerate the masks. Modify the fit as necessary to ensure compliance and adequate oxygenation.

4.12 Adjust the flow rate appropriately according to patient's condition, oxygen saturation and inform the physician.

4.13 Check if the patient is receiving the appropriate concentration of oxygen.

4.14 Check if the oxygen administered is being humidified before delivery to the patient.

4.15 Monitor the effectiveness of oxygen therapy by assessing the patient's color, oxygen saturation and PaO_2 in blood gas results.
4.16 Adhere to safety precautions in providing oxygen therapy due to its combustible property.
4.17 Inform physician of any patient request, complaints or reaction to the therapy.
4.18 Document in the nurses notes the date and time the oxygen therapy was initiated or discontinued, type of oxygen therapy and flow rate, all nursing care rendered, all treatment given, patient's condition and tolerance to procedure.

5. MATERIAL AND EQUIPMENT:

5.1 Cardio – Respiratory Monitor
5.2 Nasal Cannula
5.3 Simple Face Mask and Tubing
5.4 Oxygen Source
5.5 Flow Meter
5.6 Humidifier
5.7 Distilled Water

6. RESPONSIBILITIES:

6.1 Physician
6.2 Nurses
6.3 Respiratory Therapist

7. APPENDICES:

N/A

8. REFERENCES:

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8.2 Janice L Hinkle, Kerry Cheever, Brunner and Siddhartha's Textbook of Medical Surgical Nursing, Lippincott Williams and Wilkins, Philadelphia, 13th edition, 2014.
8.3 Audrey Berman, Shirlee Snyder, Kozier and Erb's Fundamentals of Nursing Concept, Process and Practice, Pearson Education, 10th edition, 2015.

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