PAEDIATRIC NURSING PRACTICE MANUAL
SECTION 7

CARE OF THE CHILD WITH A RESPIRATORY CONDITION

7.2 OXYGEN THERAPY

7.2.1 OXYGEN ADMINISTRATION

This document excludes the Paediatric Intensive and Neonatal Intensive critical care units

The care described throughout this document is in conjunction with /supplemental to Refer to PNPM 3.1.1 General Observations, including Respiratory Assessment & 7.2.2.1 Oxygen Delivery Devices.

Also refer to PNPM 7.4 Care of a Child with a Tracheostomy

Aim

To provide evidence based guidance for all Nurses registered with the Nursing & Midwifery Board of Australia (NMBA) to initiate, administer, adjust, discontinue and monitor oxygen therapy in order to maintain optimal oxygenation for their patients.

All nursing staff must work within their scope of nursing practice. It is their responsibility to know the limits of their practice relating to oxygen therapy and to seek advice from senior nursing staff and/or medical staff to ensure the best outcome for the patient.

Background Information

Appropriate levels of oxygen are vital to support cell respiration[1] hence the principle of supplemental oxygen therapy is to maintain oxygen supplies to the lungs thereby maintaining the oxygen supply to the tissues.

Children have a lower pulmonary reserve, a higher metabolic rate and can therefore decompensate more quickly if supplemental oxygen is not provided promptly.[2]

Key points

1. **No patient should be denied oxygen therapy in an emergency situation**; patient's commenced on acute oxygen therapy should be assessed promptly by medical staff.[3]
   Consider a medical review, MET call, CODE Blue as indicated by the patient's clinical condition. (PNPM 4.1 Code Blue (55) and Emergency Resuscitation).

2. Prescription of oxygen therapy is not mandatory; however medical advice should be sought where necessary to ensure an optimum outcome for the patient. Any direction from medical staff as to desired flow rates, saturation levels and/or air trials must be clearly documented in the patient's progress notes.

3. Oxygen therapy should be delivered with the consideration to the patient's clinical presentation, general appearance, vital signs and medical condition. [2]

4. Oxygen therapy is potentially life saving therapy; however inappropriate administration could lead to oxygen toxicity which can lead to pathologic tissue damage. [2, 4]

5. Care must be exercised and advice from the appropriate medical team sought prior to commencing oxygen therapy, for patients with the following medical histories;
    - Acute or chronic hypercapnia ie. chronic obstructive pulmonary disease, chronic chest conditions such as cystic fibrosis as it may decrease their respiratory drive and increase $PaCO_2$ levels.[5, 6]
    - A history of bleomycin treatment. [5, 6]
    - Certain congenital heart defects.
6. Oxygen is a continuous therapy but should be weaned as soon as the patient's condition indicates to prevent possible oxygen toxicity and absorption atelectasis.[3, 7]
7. Patients with respiratory problems may benefit from being nursed in an upright position, consider sitting the patient upright/in chair or tilting the head of the bed/cot.[3, 8]

Possible Indicators for the commencement of supplemental oxygen therapy;

- Respiratory deterioration/distress
- Oxygen saturations persistently below 92%
- Marked pallor/cyanosis
- Recurrent apnoeas
- Vital sign and/or neurological deterioration

Documentation

Nursing staff should clearly document, in the patient's progress notes, the reasons for;

- Commencement of supplemental oxygen
- Weaning/increasing of supplemental oxygen
- Air trials and outcome

Medical staff should always be appropriately informed

References:

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3. Department of Health. Operational Directive (OD 0325/11) Use of Acute Oxygen Therapy in Western Australian Hospital. Available from: http://www.health.wa.gov.au/CircularsNew/pdfs/12792.pdf. Accessed: 19 July 2011.
4. McGill University Health Centre, Initiation of oxygen therapy: pediatric site [Expert Opinion]. In: MUHC Interprofessional Protocols. Quebec, Canada: MUHC; 2006.
5. Moloney E, Kiely J & McNicholas W. Controlled oxygen therapy and carbon dioxide retention during exacerbations of chronic obstructive pulmonary disease [Level III-3]. Lancet.357(9255):526-528; 2001.
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7. Malhotra A, Schwartz D & Schwartzstein R. Oxygen toxicity [Expert opinion]. Uptodate for patients 2008. Available from: http://www.uptodate.com/patients/content/topic.do?topicKey=~XyyyYqf2EgC44W. Accessed: 29 January 2009.
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