

PAEDIATRIC NURSING PRACTICE MANUAL
SECTION 3

GENERAL CARE OF THE SICK CHILD

3.1 MONITORING VITAL SIGNS

3.1.8 USE OF PULSE OXIMETERS IN GENERAL AREAS

(This document replaces the former 3.1.8 (Pulse Oximetry) and 3.1.9 (Nellcor Oximeter))

Aims

1. To detect the onset of hypoxia.
2. To monitor the adequacy of and detect problems associated with oxygen therapy.
3. To facilitate weaning from oxygen therapy
4. To assist in the observation for complications during air trials.

Key points

1. The care described here is additional to that in [PNPM 3.1.1](#) General Observations, including Respiratory Assessment.
2. **To enable an accurate reading**
 - i. Follow the manufacturer's instructions carefully as accurate readings are dependent on the correct use of equipment.
 - ii. Select correct probe (consider the - patient's weight, sites available).
 - iii. Appropriate signal (the SpO₂ reading is stable and the pulse rate displayed by the oximeter reflects the apical beat).
 - iv. Avoid application to sites distal to IV or IA lines, BP cuffs etc.

3. **Factors that may affect accuracy**

Technical factors: improper probe placement, motion artifact, ambient light.

Patient factors: skin pigmentation, nail polish, poorly perfused tissue ie. poor cardiac output, vasoconstriction, hypothermia, oedematous tissue.

4. If monitored continuously reposition the probe 4 hourly and rotate the probe site. Record the time and position of the probe at each change.

For intermittent monitoring do not leave the probe in situ for more than 4 hours.

5. Do not use pulse oximetry devices to obtain a heart rate reading.

Indications

1. Continuous pulse oximetry should be done in children requiring inhaled bronchodilators more often than every ½ hour.
2. A pulse oximetry reading should be taken prior to inhaled bronchodilators if given every 2 hours or more frequently.
3. For inhaled bronchodilators being given less frequently than every 2 hours, 'spot readings' are required once a shift with vital signs readings, or more often if clinically indicated.



Use of Oximeters

Oxygen therapy

Refer to Section [PNPM 7.2 Oxygen Therapy](#)

Bronchiolitis

Refer to [Bronchiolitis clinical guidelines](#)

Asthma

Refer to [Asthma clinical guidelines](#)

Infants

Refer to [Criteria for use of pulse oximeters – Ward 8A \(Infants\)](#)

Cardiac patients

1. Baseline recordings are required on admission.
2. Postoperative observations on patients with known congenital /acquired heart disease will include pulse oximetry.
3. Acceptable parameters for oxygen saturations will be recorded in the progress notes by attending medical cardiology staff and should be documented in the nursing care plan.

Cleft palate repair or pharyngoplasty

1. Continuous pulse oximetry monitoring is required for 6 hours in the immediate postoperative period, as per [PNPM 8.4.1](#) Postoperative Care of a Child Following Surgery on the Airway, then only during sleep for a total of 48 hours.
2. Patients receiving a narcotic infusion are to have continuous pulse oximetry monitoring for the duration of infusion and / or whilst asleep, for 48 hours.

Post tonsillectomy and / or adenoidectomy

1. Continuous SpO₂ recordings are required as per [PNPM 8.4.1](#) Postoperative Care of a Child Following Surgery on the Airway.
2. Patients with a history of obstructive sleep apnoea receiving a narcotic infusion are to have continuous pulse oximetry monitoring for the duration of infusion.

Care of the patient with a tracheostomy

1. Refer to [PNPM 7.4](#)
2. All children with a tracheostomy should have their oxygen saturations continuously monitored when unsupervised ie. when a parent/carer or nurse are not present and overnight.

Care of the patient receiving Intranasal Fentanyl in Clinical Areas (Ward/OPD)

1. (Refer to [PNPM 10.3.2](#)).
2. The administration of intranasal fentanyl and subsequent monitoring is to be performed by a dedicated staff member. Observations are to be documented at 5-minute intervals and will include pulse oximetry.

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Date Issued: October 1993
 Date Revised: April 2011
 Review Date: April 2013
 Authorised by: Paediatric Nursing Practice Committee
 Review Team: CNM Infants

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 Perth, Western Australia

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