Issue date
28 March 2023

Distributed to:
Chief Executives
Directors of Clinical Governance
Director, Regulation and Compliance Unit

Action required by:
Chief Executives
Directors of Clinical Governance

We recommend you also inform:
- Directors of Neonatology
- Neonatal Intensive Care Unit Managers
- Special Care Nursery Unit Managers
- Directors of Paediatrics
- Directors of Emergency Departments
- Emergency Departments Unit Managers
- Ambulance NSW
- Newborn and Paediatric Emergency Transport Service
- Directors of Community Health
- Directors of Medical Services
- Directors of Nursing/Midwifery
- Midwifery Unit Managers

Expert Reference Group
Content reviewed by:
- HealthShare ENABLE
- MOH Paediatric Advisor
- MOH Neonatology Advisor
- State Preparedness and Response Unit
- CEC Paediatric Safety
- ACI Paediatric Network
- Senior Clinicians Paediatrics/ Neonatology/Community

Clinical Excellence Commission
Tel: 02 9269 5500
cec-recalls@health.nsw.gov.au
Internet Website:
http://health.nsw.gov.au/sabs
Intranet Website:
http://internal.health.nsw.gov.au

Review date
March 2025

UPDATED: Paediatric stationary oxygen concentrator set-up - Absence of low flow alarm for flow rates less than 2 litres per minute

What is updated in this Safety Information from SI:003/21?
The notice has been reformatted and the review date has been extended.

Situation


Oxygen concentrators provide continuous supplemental oxygen in the home environment. An oxygen concentrator removes nitrogen from the air and produces concentrated oxygen at levels up to 95 percent. All oxygen concentrators used in Australia require a set of alarms to warn users in certain conditions, for example, an alarm sounds if there is a mains power failure.

The paediatric stationary oxygen concentrator set-up includes a flow meter with ranges between 0 to 1L/min or 0 to 2L/min (depending on the device type) and increments of 0.1 or 0.125L/min on the concentrator.

Background
There is a potential absence of low flow alarm in flow rates less than 2L/min. A low flow or no flow situation could happen if there is a significant reduction in expected flow such as a major kink or twist in the tubing.

Oxygen concentrators reliably deliver oxygen at low rates of flow (less than 2L/min).

None of the paediatric stationary oxygen concentrators on the current NSW state contract have low flow/ no flow alarms that operate below 2L/min.

Other paediatric stationary oxygen concentrators that are not on NSW state contract may not have low flow/ no flow alarms that operate below 2L/min.

Assessment
Clinicians and families discuss what is best for their situation.

- Risk assess patients requiring flow less than 2L/min and their individual tolerance/impact for undetected low flow or no flow situations
- Clinicians understand and discuss the specific features and limitations of paediatric oxygen concentrators with the suppliers of these devices
- For patients on oxygen flow rates of 0.5L/min or more, consider choosing a ‘standard’ oxygen concentrator (0 to 5L/min with 0.5L/min increments). At these flows on the ‘standard’ concentrator, the low flow alarm is designed to function
- Consider use of oxygen monitoring devices for patients with low tolerance for periods with no oxygen flow.

Clinical Recommendations
It is important to check flow and minimise risks by:

- Checking the tube location and ensuring tubing is not kinked, caught or squashed between furniture. Using a shorter tube length may assist with this.
- Checking the flow meter to ensure the prescribed flow rate is set correctly
- Checking/feeling for flow from the nasal cannula.

Required actions for the Local Health Districts/Networks

1. Distribute this safety information sheet to paediatric, neonatal, and biomedical staff
2. Provide families/carers with information and education on safe management and use of paediatric oxygen concentrators and low flow oxygen delivery
3. Ensure a process for, and documentation of, risk assessment for the patient suitability, and carer needs regarding home oxygen use
4. Discuss the content of this information sheet with families
5. Update local guidance with the information from this document
6. Report any incidents associated with these devices into ims+ and TGA.