



## Set up of neonatal resuscitaires

24 June 2019

### Distributed to:

- Chief Executives
- Directors of Clinical Governance
- Director Regulation & Compliance Unit

### Action required by:

- Chief Executives
- Directors of Clinical Governance

### We recommend you also inform:

- Directors and Managers of
  - Obstetric Services
  - Operating Suites
  - Anaesthetics
  - Paediatrics
  - Neonatology
- Midwives
- Anaesthetists
- Operating Suite staff
- Biomedical Engineering staff

### Expert Reference Group

#### Content reviewed by:

- Office of Chief Health Officer
- HealthShare NSW
- Anaesthetic representation
- Biomedical representation
- Human Factors representation
- CEC Patient Safety Directorate

### Clinical Excellence Commission

Tel. 02 9269 5500  
Fax. 02 9269 5599

Email:  
[CEC-Quality@health.nsw.gov.au](mailto:CEC-Quality@health.nsw.gov.au)

Internet Website:  
<http://www.health.nsw.gov.au/sabs>

Intranet Website  
<http://internal.health.nsw.gov.au/quality/sabs/>

### Review date

June 2020

A Local Health District (LHD) recently submitted a Root Cause Analysis (RCA) report about a serious near miss where a resuscitaire was incorrectly set up, resulting in a premature baby not receiving supplemental oxygen during treatment on the resuscitaire. This Safety Notice outlines actions to reduce the risk of reoccurrence.

### Background

A resuscitaire is a piece of equipment used to warm and resuscitate newborns post birth. This equipment is often found in Birthing/Delivery Suites, Maternity Wards, Neonatal Units, Operating Theatres and Emergency Departments. In NSW, some models have integrated (built in) air/oxygen blenders while other models have external blenders. Refer to page 2 for examples.

### Incident information

An incident occurred in a NSW Hospital involving a resuscitaire with an external blender. The oxygen hoses between the wall, twin-o-vac and blender were incorrectly set up, resulting in a newborn baby with respiratory distress not receiving supplementary oxygen. Staff involved reviewed equipment and switched to an alternate oxygen source when unable to identify the problem. The baby stabilised and had a good outcome.

#### The RCA team found:

- Routine safety checks of the resuscitaire had been completed prior to birth and did not detect the incorrect hose set up
- Staff resuscitating the baby were unable to visually identify the equipment problem during the resuscitation
- A review following the event identified the gas hosing from the twin-o-vac to the air/oxygen blender was disconnected
- It was not able to be determined when the gas hosing was incorrectly set up/alterd.

### Assessment

- Review of the resuscitaire and a simulation exercise on a similar model with an external blender demonstrated a potential for two similar problems related to incorrect gas hose set up. There is less of a risk with resuscitaires with integrated blenders
- Medical Gas hoses on the resuscitaire do not require changing regularly, therefore clinical staff may not be familiar enough with equipment to identify an incorrect set up, leading to an incorrect gas flow
- While routine checking practices check functionality of the gas powered resuscitator (i.e. Neofuff), this does not specifically check for correct gas flow.

### Actions to mitigate risk

- Ensure point of care checking processes include a check for the correct gas flow, specifically:
  - To check the correct gas flow, increase the FiO<sub>2</sub> (oxygen) on the blender to 60% and turn the flowmeter to 15 L/minute oxygen **for 10 seconds**. If the oxygen is not connected correctly, the external blender should alarm within 10 seconds
- Ensure there is a process for documenting the resuscitaire check, and retaining the record.

### Additional actions from learnings from RCA

- Consider the use of ultra-long hoses to allow direct connection to piped oxygen in environments where piped gas may be difficult to reach
- Where cylinder gas is used as the primary source, include a check of the cylinder gas level as a part of the routine checking process
- Turn off the cylinders in between patients if the machine is being left unused for a period of time. The cylinders can be depleted over time due to the design of the blender.

### Recommended actions by Local Health Districts/Networks (LHD/SHNs)

1. Distribute this notice to relevant staff
2. Conduct an audit of **all** resuscitaires and return to [CEC-Recalls@health.nsw.gov.au](mailto:CEC-Recalls@health.nsw.gov.au) by Friday 5 July 2019
3. In consultation with hospital Biomedical department, review and/or develop checking processes for resuscitaires, which includes a check of the correct gas flow
4. Send a copy of the checking procedures to [CEC-recalls@health.nsw.gov.au](mailto:CEC-recalls@health.nsw.gov.au) by Friday 26 July 2019
5. When procuring new resuscitaires, it is recommended to purchase devices that have an integrated blender.



Set up of neonatal resuscitaires

24 June 2019



Example of external Air/Oxygen blender



Example of resuscitaire with external air/oxygen blender



Example of resuscitaire with integrated air/oxygen blenders

Obsolete