Safety Notice 030/23

Issue date
26 October 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, Managers and Staff of:
- Maternity services
- Neonatal services
- Emergency Departments
- Operating Theatres
- Anaesthetics
- Paediatrics
- Biomedical Engineering

Content reviewed by:
CEC Patient Safety Directorate
CEC Systems Improvement Directorate
Neonatologists

Clinical Excellence Commission
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Internet Website
Intranet Website

Review date
October 2024

Updated: Set up of neonatal resuscitaires.

What is updated in this Safety Notice from SN:008/19?
The message has been strengthened to reinforce the correct set up of neonatal resuscitaires and checking processes.

Situation
An incident occurred when a neonatal resuscitaire was incorrectly set up, resulting in a premature baby in respiratory distress not receiving supplemental oxygen.

Background
Neonatal resuscitaires are commonly found in areas where neonatal resuscitation may be required such as birth units, maternity wards, neonatal units, operating theatres, and emergency departments. In NSW, some models have integrated (built in) air/ oxygen blenders while other models still have external blenders. Refer to page 2 for examples.

The 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 premature 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. On review of the incident, it was found that:

- Routine safety checks of the resuscitaire had been completed and did not detect the incorrect hose set up.
- Staff resuscitating the baby were unable to visually identify the equipment problem during the resuscitation.

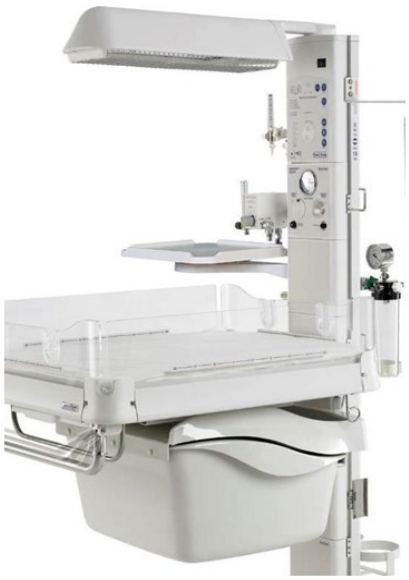
Assessment
- Review of the resuscitaire, and a simulation exercise on a similar model with an external blender demonstrated a potential for two similar problems related to incorrect gas hose set up. There is less of a risk with resuscitaires with integrated blenders.
- Medical gas hoses on the resuscitaire 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., T-piece device), this does not specifically check for correct gas flow.

Clinical Recommendations
- Ensure point of care checking processes include a check for the correct gas flow, specifically:
  - To check the correct gas flow, increase the FiO_2 (oxygen) on the blender to 60% and turn the flowmeter to 15 L/minute for 10 seconds. If the oxygen is not connected correctly, the external blender should alarm within 10 seconds.
- Consider the use of ultra-long hoses to allow direct connection to piped oxygen in settings where piped gas may be difficult to reach.

- Where a gas cylinder is used as the primary source, include a check of the cylinder gas level as a part of routine checking.
- Turn off the cylinders between patients if the machine is unused for a period of time. The cylinders can be depleted due to the design of the blender.
- When resuscitation has been unsuccessful, the equipment should be rechecked for possible error or failure.
- When procuring new resuscitaires, it is recommended to purchase devices that have an integrated blender.

Example resuscitaire and blenders:

Example of external Air/Oxygen blender



Example of resuscitaire with external air/oxygen blender

Example of resuscitaire with integrated air/oxygen blenders

Required actions for the Local Health Districts/Networks

1. Distribute this notice to relevant staff.
2. Include this Safety Notice in relevant handovers and safety huddles.
3. Undertake a local risk assessment and review strategies to mitigate the risk of errors in setting up of neonatal resuscitaires.
4. Report any incidents associated with these devices into ims+ and TGA.