



Safety Notice 013/19

Incompatibility between Oxygen Cylinders with Inbuilt Regulators and Air/Oxygen Blenders

26 September 2019

Distributed to:

- Chief Executives
- Directors of Clinical Governance
- Regulation and Compliance Unit

Action required by:

- Chief Executives
- Directors of Clinical Governance

We recommend you also inform:

- Directors and Managers of
 - Nursing and Midwifery
 - Clinical Services
 - Anaesthetics
 - Emergency Departments
 - Neonatology Units
 - Obstetric Services
 - Operating Suites
 - Paediatrics
- Anaesthetic staff
- Biomedical Engineering staff
- Emergency Department staff
- Midwives
- Operating Suite staff

Expert Reference Group

Content reviewed by:

- Office of Chief Health Officer
- HealthShare NSW
- Paediatric representation
- Anaesthetic representation
- Neonatal representation
- Biomedical representation

Clinical Excellence Commission

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

Review date

September 2020

There have been two reported incidents in NSW involving Air/Oxygen Blenders alarming when used with oxygen cylinders with an inbuilt regulator.

In NSW there are three models in use: Air Liquide, Coregas and BOC.

Air/Oxygen Blenders are often used in Emergency Departments, Paediatric Units, Neonatal Intensive Care Units, Special Care Nurseries, Birthing Suites and Operating Suites.

In both incidents, staff heard a continued audible hiss during use due to higher pressure from the oxygen cylinder, delivering a 5% higher concentration of oxygen than prescribed. There was no patient harm in either event as staff continued treatment and were guided by patient's clinical observations. Neonatal patients are at highest risk of harm should there be any discrepancy in prescribed versus delivered oxygen concentration.

Consultation with gas manufacturers indicate that oxygen cylinders with inbuilt regulators should not be used with gas blenders. A normal cylinder with separate regulator should be used for this purpose.



Example of O2 cylinder with inbuilt regulator



Example of cylinder with separate regulator

Recommended actions by Local Health Districts/Networks

1. Distribute this Safety Notice to all relevant managerial, clinical and biomedical engineering staff to raise awareness that oxygen cylinders with inbuilt regulators are not to be used with an Air/Oxygen Blender or gas mixer
2. Conduct an audit of areas that use Air/Oxygen Blenders to ensure they are not used with gas cylinders with inbuilt regulators. If any are found, change the cylinder to a cylinder with separate regulator
3. In consultation with hospital Biomedical Departments, review and/or develop checking strategies to mitigate this risk and ensure clinicians are familiar with equipment. Consider incorporating into monthly WHS inspections and annual Biomedical Engineering inspections.
4. By 4 October 2019, provide a response to CEC-Recalls inbox with audit results and confirmation that checking strategies are in place.