



## SA Department of Health ADVISORY

Attention:

**Chief Executives, General Managers**

**For distribution to :**

**Managers**

**Directors**

**Safety and Quality Risk Managers**

**Supply**

**Biomedical Engineering**

**Engineering Services**

**All Clinical Areas**

### ***Confusion between Oxygen and Medical Air***

#### **Background**

Most wards and patient treatment areas have gas panels supplied with 100% oxygen and medical air. The flow meters used for connection to the gas panels outlets are identical in design and are only differentiated by colour and sometimes labelling. The outlets are typically located adjacent to each other on the gas outlet panel.

To permit connection of any plastic delivery tubing, the flow meter outlet is usually fitted with a removable tapered barbed nipple.

Australian Standards specifies that oxygen wall outlets, hand wheel and control knobs are coloured white. Medical air wall outlets, hand wheel and control knobs are coloured black.

By convention, as it is not explicitly specified in standards, the oxygen nipple should also be white and medical air black. Green nipples may be seen fitted to either flow meter, as green is the American oxygen convention and would have been fitted to imported equipment.

White oxygen nipples, black medical air nipples or green nipples are interchangeable between either types of flow meter.

There has been adverse events involving patients' being connected to medical air rather than oxygen, as a result of a white nipple being inadvertently fitted to a medical air flow meter. As well as adverse

events where incorrect connection to air has occurs, even though the nipples were correctly colour coded.



A typical oxygen flow meter fitted with the correct white tapered barbed nipple connection.



## Actions

All clinical areas to check that all flow meter nipples comply with the Australian colour convention for oxygen and medical air –

- White nipples – attached to oxygen flow meters
- Black nipples – attached to medical air flow meters

Ensure that adequate stocks of spare nipples of either colour are available to replace lost or broken nipples.

Consider alternative methods of supplying compressed air that will facilitate the removal of medical air flow meters.

Inform all clinical staff of the importance of maintaining the correct colour convention on oxygen and medical air flow meters.

Instruct all clinical staff to verify the gas source, by checking the gas panel and flow meter, rather than relying on the nipple colour.

Consider removing medical air flow meters, when not in regular use.

Ensure that the flow meters are not obstructed by curtains or other equipment which may lead to inadvertent connection.

Request the medical gas maintenance contractor / staff verify and replace as required nipples to maintain the Australian colour convention as part of the flow meter maintenance program.

Consider improving the prominence of the labelling of oxygen and medical air outlets.

Removal from service of any green nipples, they are not an Australian convention and thereby introduce further point of confusion.

## Report all events

Utilise AIMS for reporting any adverse events concerning mistaking medical air for oxygen or oxygen for air.

## Further Information

Please contact Christy Pirone or Peter Senn, Safety and Quality Unit, Department of Health 8226 6698 or email [christy.pirone@health.sa.gov.au](mailto:christy.pirone@health.sa.gov.au)

Or view <http://www.safetyandquality.sa.gov.au/>

References: Patient Safety Advisory, US Veterans Health Administration.  
Thin Air, commentary by David M. Gada, MD Agency for Healthcare Research and Quality



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