NHS
National Patient Safety Agency

Rapid Response Report

NPSA/2009/RRR006

From reporting to learning

29 September 2009

Oxygen safety in hospitals

Issue

Oxygen is one of the most common medicines used in hospital settings. It is administered across a range of specialties and given by various healthcare professionals. Oxygen is indicated in many critical conditions and can save lives by preventing severe hypoxaemia. However, there is a potential for serious harm and even death if it is not administered and managed appropriately.

Evidence of harm

The National Patient Safety Agency (NPSA) has received 281 reports of serious incidents (up to June 2009) which are related to inappropriate administration and management of oxygen. Of these incidents, poor oxygen management appears to have caused nine patient deaths and may have contributed to a further 35 deaths. Common themes identified from the review of these incidents, local investigations and other sources are:

- Prescribing: failure to or wrongly prescribed
- Monitoring: patients not monitored, abnormal oxygen saturation levels not acted upon
- Administration: confusion of oxygen with medical compressed air, incorrect flow rates, inadvertent disconnection of supply
- Equipment: empty cylinders, faulty and missing equipment

Key guidance

The British Thoracic Society (BTS) produced clinical guidance on the use of emergency oxygen (BTS, 2008) and the Department of Health, Estates and Facilities Division issued guidance on medical gases (HTM 02-01; see supporting information). To complement these documents, the NPSA recommends the following:

For IMMEDIATE ACTION by all hospitals (acute, community and mental health) in the NHS and the independent sector

Deadline for ACTION COMPLETE is 29 March 2010

A named senior lead, nominated by the Chief Executive, should ensure that:

1. This Rapid Response Report (RRR) and the NPSA briefing sheets (visit www.nrls.npsa.nhs.uk/alerts) highlighting actions to minimise risks of oxygen therapy are immediately made available to all relevant staff.
2. The use of oxygen cylinders is minimised and, where necessary, a business case for increased piped oxygen provision is developed in accordance with HTM 02-01 Part A.
3. Where the use of oxygen cylinders is unavoidable (i.e. transfer and emergency situations or for mental health trusts), robust systems are in place to ensure reliable and adequate supplies, including checking and stocktaking of cylinders.
4. The risks of confusing oxygen and medical compressed air are assessed and action plans developed (e.g. removing the medical air flow meter from the wall outlet when not in regular use).
5. Oxygen is prescribed in all situations in accordance with BTS guidelines (but note these **do not cover critical care or children under 16 years**). In an emergency, oxygen should always be given immediately and documented later.
6. Pulse oximetry is available in all locations where oxygen is used.
7. A multidisciplinary group (such as a Medical Gas Committee) is responsible for reviewing oxygen-related incidents, developing a local oxygen policy and a training programme.

The NPSA has informed NHS organisations, the independent sector, commissioners, regulators, industry and relevant professional bodies. Further information on this RRR is available at: www.nrls.npsa.nhs.uk/alerts.
Email: rrr@npsa.nhs.uk, telephone 020 7927 9890.

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