

National Patient Safety Alert

Guidance Notes for Implementation of the Alert in Scotland

Reference: NatPSA/2023/001/NHSPS

Issued: 11 January 2023

Review Date: 11 January 2024

Use of oxygen cylinders where patients do not have access to medical gas pipeline systems

Summary

The attached National Patient Safety Alert (NatPSA) has been issued in England by NHS England Patient Safety. It has been assessed as suitable for implementation in Scotland provided the guidance notes below are applied.

Guidance Notes for Implementation of the Alert in Scotland

1. Background

National Procurement is aware there is increased demand for cylinders due to winter pressure and temporarily reduced filling capacity over the festive fortnight. They are continuing to work with the supplier and NHS England.

2. Action point 1

The action point states that a risk assessment should be undertaken in all areas where patients are being acutely cared for (either temporarily or permanently) without routine access to medical gas pipeline systems. Two additional points should be taken into account:

- a) The fire safety aspects of the risk assessment should include a requirement to allow alcohol hand sanitiser to evaporate before accessing oxygen.
- b) It is possible that oxygen concentrators rather than cylinders are being used in areas without routine access to medical gas pipeline systems. Where this is the case, users should ensure that they have been appropriately trained in the use of oxygen concentrators and in their decontamination between patients. Users should also understand the limitations of these devices and additional help should be sought where necessary from Dolby Vivisol (shoof.dv@nhs.net).
- c) The physical safety aspects of the risk assessment should take into account that cylinders and flowmeters should be routinely decontaminated after use in line with the National Infection Prevention and Control Manual. There may also be specialist requirements for oxygen regulators (refer to manufacturer's instructions).
- d) In place of the NHS England guidance on safe use of oxygen cylinders, the guidance applicable in Scotland is provided by National Institute for Health and Care Excellence (NICE): <https://bnf.nice.org.uk/treatment-summaries/oxygen/>. Particular attention is drawn to the following points:
 - Boards must have a written policy outlining how and when emergency oxygen is to be used and must comply with the [NICE](#) best practice guidance on oxygen.
 - Staff must be regularly trained in emergency oxygen use and in the details of the policy.

Other relevant alerts

REF	Issued	Title
SAN(SC)21/02	29 Jan 21	Oxygen Fire Safety (COVID-19)
IM/2020/008	30 Apr 20	Alcohol based hand rubs - risk of fire

Enquiries

Enquiries and adverse incident reports should be addressed to:

Incident Reporting & Investigation Centre (IRIC)

NHS National Services Scotland

Tel: 0131 275 7575 Email: nss.irc@nhs.scot

Accessibility: Please contact us using the above details if you are blind or have a sight impairment and would like to request this alert in a more suitable format.

IRIC remit: general information about adverse incidents, safety alerts and IRIC's role can be found in [CEL 43 \(2009\)](#), *Safety of Health, Social Care, Estates and Facilities Equipment: NHS Board and Local Authority Responsibilities*, issued 30 October 2009.

Report an incident: Information on [how to report an adverse incident](#)

NHS National Services Scotland is the common name for the Common Services Agency for the Scottish Health Service <https://www.nss.nhs.scot/>



Use of oxygen cylinders where patients do not have access to medical gas pipeline systems

Date of issue:

10 January 2023

Reference no:

NatPSA/2023/001/NHSPS

This alert is for action by: acute trusts with an emergency department and ambulance trusts

This is a safety critical and complex National Patient Safety Alert. Implementation should be co-ordinated by an executive lead (or equivalent role in organisations without executive boards) and supported by leaders in respiratory medicine, emergency medicine, nursing, pharmacy and estates.

Explanation of identified safety issue:

During periods of extreme pressure, often exacerbated by a surge in respiratory conditions, demand on supplies of oxygen cylinders, especially the smaller sizes, increases in the NHS due to the need to provide essential oxygen treatment in areas without access to medical gas pipeline systems.

This surge in demand increases the known risks associated with the use of oxygen gas cylinders, and introduces new risks, across three main areas:

- patient safety
- fire safety
- physical safety

A search of incidents reported to the of the National Reporting and Learning System (NRLS) and Learn from Patient Safety Events (LFPSE) service in the last 12 months identified 120 patient safety incidents, including those with these themes:

- cylinder empty at point of use
- cylinder not switched on
- cylinders inappropriately transported
- cylinders inappropriately secured

Some of these reports described compromised oxygen delivery to the patient, leading to serious deterioration and cardiac or respiratory arrest.

In addition there is a need to conserve oxygen cylinder use to ensure a robust supply chain process.

As a result of current pressures on the NHS, NHS England issued providers with a summary of best practice guidance on the 'Safe use of oxygen cylinders'¹ on Friday 06 January 2023 to support providers to optimise and maintain the safe use of oxygen cylinders. This guidance was issued via the Patient Safety Specialist and Emergency Preparedness, Resilience and Response (EPRR) networks.

Actions required



Actions to be completed as soon as possible, and not later than 20 January 2023.

1. The chair of acute trust medical gas committee, working with key clinical/non-clinical colleagues including the local ambulance trust, should review the NHS England 'Safe use of oxygen cylinders' best practice guidance¹ and ensure a risk assessment is undertaken in all areas where patients are being acutely cared for (either temporarily or permanently) without routine access to medical gas pipeline systems. NOTE A

Risk assessment should pay particular attention to:

- avoiding unnecessary use of cylinder oxygen and excessive flow rates by ensuring oxygen treatment is optimised to recommended target saturation ranges.²
 - ensuring safe use of oxygen cylinders by clinical staff including;
 - safe activation of oxygen flow
 - initial and ongoing checks of flow to patient
 - initial and ongoing checks of amount of oxygen left in the cylinder- especially during transfer or whilst undergoing diagnostic tests.
 - fire safety, including:
 - appropriate ventilation (both in physical environments and in ambulances),
 - safe storage of cylinders
 - physical safety, including:
 - awareness of manual handling requirements
 - safe transportation of cylinders using appropriate equipment
 - safe storage of cylinders.
2. Once the risk assessments have been undertaken, convene the acute trust medical gas committee as soon as possible to review the findings of the risk assessments and formalise an action plan. Ensuring that the committee has executive director representation and ambulance trust input.

Additional information:

Note:

- A. Priority should be given to escalation/transient areas being used to acutely care for patients eg corridors, non-inpatient areas (eg physiotherapy departments), ambulances outside emergency departments.
- B. Any suspected or actual adverse incidents involving medical devices should be reported through your organisation's local incident reporting system and/or to the Medicines and Healthcare products Regulatory Authority (MHRA) through the Yellow Card scheme as appropriate – www.yellowcard.mhra.gov.uk.

Patient safety incident data:

The National Reporting and Learning System (NRLS) was searched via SAS self-service add-in on 05 January 2023 for incidents occurring on or after 06 January 2022, if uploaded to NRLS by 05 January 2023, using free text terms: 'cd cylinder' OR 'cylinder' AND 'O2' OR 'oxygen' OR 'air'. All incidents graded by the organisation as resulting in moderate, severe harm or death were reviewed (n=43), in addition to a combined random sample of 100 low and no harm incidents. In total 95 incidents described safety issues relating to oxygen cylinder use (equivalent to circa 1000 relevant low/no harm NRLS incidents had all low/no harm data had been reviewed).

The Learn From Patient Safety Events (LFPSE) service was searched using a deep dive tool on 05 January 2023 for incidents occurring on or after 06 January 2022, if submitted by 05 January 2023, using free text terms: 'O2' OR 'oxygen' OR 'air' AND 'cylinder' OR "cd cylinder". All incidents were reviewed. In total 25 incidents described safety issues relating to oxygen cylinder use.

References:

1. NHS England. Safe use of oxygen cylinders. 06 January 2022
<https://www.england.nhs.uk/publication/national-patient-safety-alert-use-of-oxygen-cylinders-where-patients-do-not-have-access-to-medical-gas-pipeline-systems/>
2. British Thoracic Society. Guideline for oxygen use in adults in healthcare and emergency settings. June 2017.
<https://www.brit-thoracic.org.uk/document-library/guidelines/emergency-oxygen/bts-guideline-for-oxygen-use-in-adults-in-healthcare-and-emergency-settings/>

Stakeholder engagement:

- National Patient Safety Response Advisory Panel (for a list of members and organisations represented on the panel see <https://www.england.nhs.uk/patient-safety/patient-safety-alerts>)

Advice for Central Alerting System (CAS) officers and risk managers

This is a safety critical and straightforward National Patient Safety Alert. In response to [CHT/2019/001](#) your organisation should have developed new processes to ensure appropriate oversight and co-ordination of all National Patient Safety Alerts. CAS officers should send this Alert to executive lead nominated in their new process to coordinate implementation of safety critical and complex National Patient Safety Alerts, copying in the leads identified on page 1.