

# Safety Action Notice

Reference **SAN(SC)21/02**Issued **29 January 2021**Review Date **29 January 2022**

## Oxygen Fire Safety (COVID-19)

Source: This notice is based on the English Estates and Facilities Alert NHSE/I – 2020/003 issued by NHS Improvement

### Summary

Health boards are reminded to be aware of the fire risk associated with the use of high flow open circuit oxygen devices where there is a risk of increasing ambient oxygen concentration

### Action

Working with local Incident Management Teams, establish specific leadership teams including key clinical leaders and fire safety teams to reduce the risk of physical hazards associated with oxygen use through:

1. Reviewing the fire risk assessment and significant findings, to ensure it includes the additional challenges of care during the COVID-19 pandemic. This includes having a fire evacuation plan for patients on NIV/ventilation and evaluating /addressing risks to staff and other patients when evacuating patients who are COVID-19 positive. This may initially involve a desktop exercise supported by the Fire Safety team followed by a walk through inspection by a designated member of that team.
2. Arranging a system of atmospheric monitoring to frequently measure oxygen levels and a procedure to disperse by ventilation where increased levels are encountered. Oxygen is heavier than air and can gather in pockets, therefore the monitoring procedure should ensure this is taken into account. Consideration may be given to the use of personal oxygen monitor and alarm devices on members of staff to supplement the periodic sweep of the room with more detailed monitoring exercises. For the more detailed sweep of the space, each space should be studied to establish the most appropriate equipment/method (e.g. battery power/mains powered; mobile/fixed, central panel with remote sensors, noise levels, etc.)
3. Arranging evacuation training for staff including additional challenges related to COVID19 patients. Particular emphasis should be placed on the training of ward managers – SHTM 83 Part 2: Fire Safety Training provides further detail.
4. Risk assessing the use of oxygen cylinders. Oxygen cylinders create a potential explosion hazard in the event of a fire. Therefore, use of cylinders in usual practice should be minimised, and ideally reserved for emergencies and transport.
5. Establishing effective systems for ensuring used and emptied cylinders are identified and promptly collected and returned for refilling
6. Procuring/securing safe holders for oxygen cylinders for use at bedsides, trolleys, wheelchairs, etc

7. Reviewing and strengthening existing restrictions for the whole hospital site of ignition sources e.g. patients' smoking materials and e-cigarettes, and other personal items that could provide a source of ignition
8. The **COVID-19 Fire Safety Note** should be reviewed alongside these actions. (**see Annex 1**)
9. Establishing at least daily checking systems for good oxygen housekeeping on every ward and department (**see Annex 2**)
10. Administering high flow oxygen with potential oxygen leakage in to the room should be avoided if the room is not adequately ventilated. As such, rooms designed to accommodate oxygen delivery should only be considered after a risk assessment.

Note many of the actions to reduce oxygen wastage will also have a positive effect on reducing fire risk

#### **Action by**

- Chief Executives, Medical Directors, Directors of Nursing, Critical Care Managers, Respiratory Care Managers, Medical Physics Manager, Pharmacy Managers, Directors of Estates and Facilities and Fire Managers

#### **Deadlines for action**

Actions underway: Immediately

Actions complete: 04 March 2021

## **Problem / background**

As hospitals come under increased pressure from acute respiratory admissions due to COVID-19 and winter viruses, oxygen estates may also come under pressure due to:

- Admitting large numbers of COVID-19 patients in addition to their usual workload of elective, urgent and emergency care;
- Creating new bays or wards to care for patients with COVID-19 or other respiratory illnesses;
- Have older estates, or;
- Using Continuous Positive Airway Pressure CPAP, non-invasive ventilation (NIV) and/or High Flow Nasal Oxygen (HFNO2) as part of the care pathway for acute respiratory patients (COVID-19 or non-COVID-19);

Demand for oxygen this winter is also likely to be higher than in spring because:

- There are more general and acute patients in hospital than in the spring, many of whom require some oxygen; and
- There is proportionately greater use of HFNO2 and CPAP in patients with COVID-19 and in general, these devices use more oxygen than critical care ventilators (due to the proportionally higher quantity of them compared to the number of ventilators)
- Operating theatres and recovery wards are largely continuing to run as normal rather than acting as COVID-19 surge capacity.

It is therefore particularly important that Boards continue to follow previously issued guidance and good practice in relation to oxygen supplies

## Distribution

Ambulance Services, Capital Planning & Design, Critical care, Emergency Department, Estates and Facilities, Fire Safety Advisors, Health & Safety, Hospices, Infection Control Staff, Intensive Therapy Units, Medical, Medical Physics, Nursing, Operating Departments, Pharmacy, Respiratory Medicine, Risk Management, Supplies/Procurement

## References

- NHS Scotland COVID-19 Fire Safety Note for new premises / temporary wards provided for treatment of COVID-19 positive patients, March 2020 (see Annex 1)
- SAN(SC)20/05 Protection of hospital oxygen pipeline systems through managed distribution of oxygen-dependant patients (COVID-19), April 2020  
<https://www.nss.nhs.scot/media/1309/san-sc-2005.pdf>
- IM/2020/005 Use of high flow Oxygen therapy devices (including CPAP and high flow face mask or nasal oxygen) during the Coronavirus epidemic – urgent patient safety notice, April 2020 <https://www.nss.nhs.scot/media/1277/im-2020-005.pdf>

## Enquiries

Enquiries (and adverse incident reports) in Scotland should be addressed to:

### **Incident Reporting & Investigation Centre (IRIC)**

NHS National Services Scotland

Gyle Square, 1 South Gyle Crescent, Edinburgh EH12 9EB

Tel: 0131 275 7575 Email: [nss.irc@nhs.scot](mailto:nss.irc@nhs.scot)

Report options are available on the HFS website: [How to report an Adverse Incident](#)  
Further information about reporting incidents can be found in [CEL 43 \(2009\)](#) or by contacting IRIC at the above address.

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# ANNEX 1

## **COVID-19 Fire Safety Note**

### **Fire risk assessment**

A fire risk assessment should be carried out for all new premises that are intended for use for COVID-19 patients

Where it is intended to use existing premises for COVID-19 patients, the fire risk assessment should be reviewed in view of the higher risk patient group and the issue of more oxygen being in use.

Refer to 'Firecode guidance documents at;

<https://www.nss.nhs.scot/publications?keywords=fire&department=&publicationType=&updatedAfter=&updatedBefore>

The Scottish Fire and Rescue Service have offered assistance with risk assessing new premises and NHSS Boards should contact their local SFRS Prevention and Protection department if this is required.

### **General Considerations**

It may be possible to carry out the review using plan layouts and local knowledge.

There may be a requirement for increased staffing levels

PPE considerations for NHSS fire response personnel

Increased oxygen use and oxygen saturation of clothing and bed linen increasing the combustibility of these items

Limiting electrical charging to essential medical equipment and excluding the charging of personal electrical items such as laptops and mobile phones within oxygen enriched wards.

Training to ensure staff are aware of the risks, the need for increased vigilance

Training for staff on the setting of oxygen flows and reading the oxygen flow meters.

Minimising the requirement of evacuation through COVID-19 wards in the event of a fire occurrence in adjacent wards

Liaison with local fire crews to agree a protocol for their attendance at fire incidents such as an agreed rendezvous point outside of the entrance of the premises where fire crews can meet with an authorised member of NHSS staff. This would minimise the numbers of fire service personnel who enter the facility particularly if they are responding to a fire alarm activation that may not be an actual fire

### **Minimising disruption from Unwanted Fire Alarm Signals**

NHSS Boards that have an internal telephone reporting system e.g. 2222 should consider that all fire incidents are reported by staff calling 999 in the first instance and following this up by calling the internal reporting number so that NHSS fire response teams can be mobilised.

This will minimise the number of fire appliances that have to be mobilised and attend our facilities if the alarm activation is a result of an unwanted fire alarm signal. It will also decrease the disruption to essential medical services caused by fire crews unnecessarily entering premises. Furthermore, it will assist in the combat of infection transmission from patients to fire crews and vice versa.

If you require clarification or further assistance please contact Bill Connolly, National Fire Safety Advisor at [wconnolly1@nhs.net](mailto:wconnolly1@nhs.net) or tel. 07905 328081

## **ANNEX 2**

### **Good Oxygen Housekeeping** **For use on ALL WARDS AND DEPARTMENTS**

#### **Ward and Department checklist**

Complete before shift handover and during pharmacy rounds

- Advise all staff working of the location of the oxygen outlet alarm panel
- Check stock of oxygen cylinders is readily available in case of emergency
- Replace empty or near empty oxygen cylinders
- Turn off oxygen flowmeters which are not in use
- Remove medical air flowmeters when not in active use

#### **Patient checklist**

- Titrate patient's oxygen to targeted SpO<sub>2</sub> consistent with local clinical guidance.
- Turn off oxygen flowmeter if not in use
- Ensure no more than 15L/Min are given by a standard ward oxygen flowmeter.

#### **High flow nasal oxygen (HFNO<sub>2</sub>) and CPAP/NIV devices patient checklist**

- Turn off devices when not in use
- Limit large mask leaks with CPAP / NIV devices: call for help to review / refit mask if required
- Where possible avoid the use of oxygen cylinders to support CPAP / NIV devices (both risk of oxygen failure and potential fire risk)

**If an oxygen alarm sounds, this must be taken seriously and not ignored  
Please contact [Insert local point of contact] as a matter of urgency.**