NHS WALES

Estates and Facilities Alert

GIG CYMRU NHS WALES
Partneriaeth Cydwasanaethau
Gwasanaethau Ystadau Arbenigol
Shared Services Partnership
Specialist Estates Services

Llywodraeth Cymru
Welsh Government

Date: 9 April 2020

Cathays Park, Cardiff
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CF10 3NQ

Oxygen Usage

To: Chief Executives, LHBs
Chief Executives, NHS Trusts
NHS Wales Shared Services Partnership - Contractor Services

A list of people who need to have early sight of this information is given in the Alert

The content of Estates and Facilities Alerts is agreed between staff representatives from the four NHS administrations and issued throughout the United Kingdom. The Alert is endorsed by the Welsh Government as being relevant to NHS Wales and is issued by:

Neil Davies, Director, Specialist Estates Services, NHS Wales Shared Services Partnership

For advice see details on the alert

Note this alert originated in England by NHS Improvements.

NWSSP-SES Authorising Engineer (MGPS) has provided additional guidance on the risks associated with high oxygen flows through VIE systems and is detailed in previous alert WG SES EFA 2020 001.

Contact point in Wales:

Chris East
Senior Performance Standards Engineer
NHS Wales Shared Services Partnership – Specialist Estates Services
4th Floor, Companies House
Crown Way
Cardiff CF14 3UB

Estates and Facilities Alert

Reference SES/EFA -2020/002 Issued 9 March 2020

OXYGEN USAGE

Summary

Every patient requiring O2 on wards draws on the Oxygen storage tank. With hospitals now treating a large proportion of their inpatients for COVID19 infection, the draw is exceptionally high. The result is that some hospitals are drawing more oxygen from their tanks than the maximum flow for which they were designed.

This carries the risk of icing that could cause flow to drop unexpectedly, compromising supply to patients and/or permanent damage to the system.

It is critical that only approved guidance is followed to achieve maximum sustainable flow from existing installations. Unapproved procedures may cause permanent damage, and there may be no spares available to repair.

Your Trust will have an Approved Person and Authorising Engineer for Medical Gasses: it is critical that clinicians and managers engage with their engineers in order to safely look after their patients and plan their surge capacity.

Regional leads should manage the location of care for patients that require oxygen demand through close collaboration with individual hospitals, and ensuring this is considered when planning mutual aid (i.e. transfers between hospitals to increase capacity for patient care). This will help to ensure that critical oxygen systems are not damaged, compromising patient safety and the whole hospital.

- **Please action oxygen alarms if they are triggered.**
- **Ensure that there are cylinders available to replace piped oxygen supply in the case of an emergency**
- **Please ensure that you plan ahead, including the potential for moving patients out of your hospital, if your system is nearing capacity.**

Professor Ramani Moonesinghe, National Clinical Director, Critical Care

Professor Andrew Menzies-Gow, National Clinical Director, Respiratory Medicine

Mr Adrian Eggleton, National Estates Operational Lead and Covid-19 NHS Estates Lead

Action

Action by

- CEOs,
- Medical Directors,
- Critical Care Directors and
- Respiratory and acute medicine directors
- Estates and Facilities Directors
- Directors of Nursing
- EPRR Leads
- Chief Pharmacists

Deadlines for action

Actions underway: ASAP

References

- Advice on Pipework pressure and vaporisation.pptx

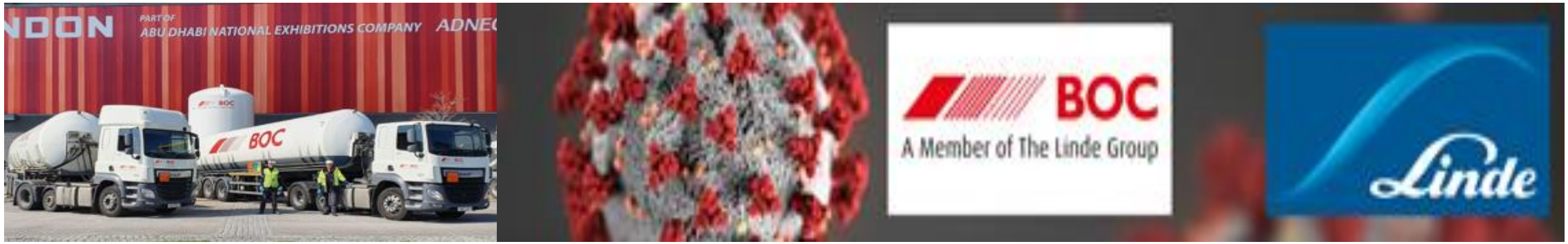
Enquiries

Enquiries should be directed to the Office quoting the alert reference number.

Wales

Enquiries and adverse incident reports in Wales should be addressed to:

NHS Wales Shared Services Partnership – Specialist Estates Services
4th Floor, Companies House, Crown Way, Cardiff CF14 3UB
Tel: 029 2090 4118 or E-mail: efa.ses@wales.nhs.uk



Management of
Bulk Medical Oxygen Systems

Introduction

- BOC is receiving high volumes of requests to increase the flow capacity of customers' Bulk oxygen systems.
- Some of the suggestions/requests that have come through would not be advisable and could impact the capacity of the supply or result in supply interference.

We have therefore put together the following slides to clarify some of the issues in making these changes and put together recommendations and advise for you to follow.

Pipework Pressure Increase

The maximum pressure you can achieve within the pipework is 4.5 barg by using the primary regulators

- Attempting to exceed this could result in regulator failure or regulators creeping to a higher level which would in turn increase the pipework pressure. Thus initiating the common pressure fault alarm or worst case lifting the pipework pressure safety valve and diverting oxygen from the hospital.
  - On request BOC will send a technician to increase the primary regulators to 4.5 barg, leaving the secondary regulators at 3.7barg.
  - If in the future the requests overload our capacity or we have too many technicians in self isolation, we can remotely talk engineers through this on site.

Increase of Vaporisation

Most systems are designed with two Starfin vaporisers for the primary supply
These are designed for an 8 hour duty cycle either manual or timed changeover

- These must be sequenced every 8 hours so that one has a defrost cycle. Due to increased demand, de-icing with warm water may be necessary.
- Please note, if both vaporisers are put on-line, this does NOT double the flow capacity, it actually **REDUCES** it.
  - If customers' are unsure of their set up or type of vaporisation system, they can send photographs to email: cescsc@boc.com or call 0800 222 888. We can then check this against our records and advise accordingly.

Increase of Vaporisation

- The System Back Up Tank usually only has a single vaporiser
- This is sized for 24 to 48 hours at the Hospitals AVERAGE flow
- The back up system CANNOT achieve 3000LPM
- Therefore emergency cylinder supply manifolds or 3rd sources of supply in Intensive Care will be required via cylinders to ensure oxygen can be maintained should a fault occur with the Primary Supply.

Icing on Cryogenic systems.
A guidance note on equipment de-icing.

BOC
A Member of The Linde Group

Linde

It is VERY IMPORTANT that vessel pipe work and vaporisers are defrosted.
It is the responsibility of the CUSTOMER to routinely de-ice equipment.

Do:

- ✓ Use hot water or steam.
- ✓ Work from the top of the equipment downwards
- ✓ Ensure the run-off is appropriately managed (e.g. adequately drained).
- ✓ Ensure you provide safe access arrangements when working on larger vaporisers, specialist access
- ✓ equipment may be needed to reach the top of the unit, for example a Mobile Elevated Working Platform
- ✓ (MEWP) or scaffold tower.

Do Not:

- ✓ Use cold water, especially where vaporisers are in use, as it can increase the volume of ice build-up.
- ✓ Use naked flames or de-icing compounds.
- ✓ Use metal hammers, picks and other mechanical items.
- ✓ Remove ice from the bottom of the vaporiser until the ice above it is cleared. If the ice from the bottom is
- ✓ removed first, ice may fall from the higher parts of the equipment, risking operator injury and damage to
- ✓ the equipment.

Note. A suitable and sufficient risk assessment should be conducted to identify hazards and minimise any risks to personnel carrying out de-icing operations; the outputs of which may require the use of suitable personal protective equipment.

For further de-icing guidance refer to CES/TD 109/604186/0113

Ad hoc advice

Review of Ad hoc requests

- Any ad hoc requests should be directed to the Healthcare co-Ordinator: Paul Shorter (paul.shorter@boc.com)

- Alternatively, email cescsc@boc.com or call 0800 222 888 and we will your pass on your request for review. e.g.
  - Requests for vaporisation rate of the system
  - Excessive icing of the vaporisers due to increase in demand etc.