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Dear Customer

Ref: Patient Safety Alert – Failure to open oxygen cylinder

Following the release of the NHS Improvements Patient Safety Alert and recent concerns documented within the media, involving the incorrect operation of oxygen cylinder controls, BOC believe it would be beneficial to provide our customers with some information and guidance on points raised within the alert. We wish to confirm our commitment in providing all Trusts with ongoing support on how to best to manage and mitigate risk when using our medical oxygen cylinders.

BOC Healthcare shares the concerns raised around the significant number of reported patient related incidents where the administration of oxygen has been unsuccessful. Although the technology implemented in BOC's integral valve cylinder package has been in circulation for around 17 years, we are aware that within some NHS Trusts, medical gas training isn't at the level it should be. This fact is confirmed in the British Thoracic Society audit report from 2015, which states, less than 50% of doctors and nurses receive adequate training in the administration of oxygen and less than two thirds of hospitals have medical gas training programmes.

Cylinder Operating Training Material

As a responsible medical gas supplier, we have always provided 'Instructions for Use', on the cylinder label, within our Medical Gas Data Sheet and on separate cylinder instructions (approved by the MHRA) available on the BOC Healthcare website. In addition, we have comprehensive medical gas training programmes available for healthcare professionals, which can be provided via e-learning or face to face training, to understand the safe operation, storage and handling of medical gases.

All BOC instructions and training material clearly detail how we would recommend medical gas cylinders should be operated. To address a concern in the Patient Safety Alert, which implies that staff may believe oxygen is flowing to a patient, when it is not, as a consequence of not operating the cylinder correctly. The cylinder operating instructions, advise the individual using the cylinder that after use, the shut-off valve should be closed and the regulator vented. If this is done, the next person operating the cylinder, would not be confused by hearing gas flowing if they were to select a flow without opening the cylinder valve. Providing all staff operate the cylinder correctly and follow the cylinder Instructions for Use, as intended, there should be no risk to patient safety.

We are also aware that within some NHS Hospital Trusts, the Medical Gas Porters remove the cylinder tamper evident seals and turn on the cylinder valve prior to delivery to the ward. We do not recommend this practice as it can lead to confusion for the operator as to whether the valve is turned on or not.

The HTM 02-01 (Health Technical Memorandum) is a comprehensive document supplied by the Department of Health to give guidance on the management of medical gases. It is BOC's policy, as a minimum, to follow and recommend the guidelines of the HTM 02-01.

The HTM-02-01 recommends that designated parking (storage) areas should be provided for cylinders and the area should have appropriate signage to indicate its purpose. BOC recommend, for ease of availability, that

departmental procedures, Medical Gas Data Sheets and medical gas cylinder instruction documents, should be kept close to the cylinder parking area. BOC can provide wall mounted document holders, which have space to store appropriate medical gas documentation.

The following guides have been attached to the communication:

Cylinder Instruction Guides - These instruction guides can be laminated and placed close to the point of use, or at the ward/department cylinder parking area.

Cylinder Flow Rate Charts -These charts provide guidance on the nominal duration of each integral valve cylinder (CD, ZD, HX, ZX) at selected gas flow rates.

Medical Gas Training Guidance

As a valve fitted to a medical gas cylinder is a classified medical device, they require everyone responsible for using them to be fully trained in their use. Full details for training requirements can be found in section 7 of HTM02-01-part B, operational management, and are detailed below:

7.4 No person should operate medical gas systems or equipment unless they are properly trained or supervised.

7.5 & 7.6 A training programme should be established for all staff responsible for MGPS. All training should be recorded and reviewed regularly.

7.7 The Executive Manager should ensure that all estates/nursing/medical staff have received this training before using the MGPS and that refresher courses are arranged as detailed in **Table 1**.

Table 1 Refresher training and reassessment schedule for personnel working with medical gas systems

Personnel	Retraining	Re-assessment
Authorising Engineer	Every 3 years	Every 3 years
Authorised Person	Every 3 years	Every 3 years
Competent Person	Every 3 years	Every 3 years
Designated Medical Officer	Every 3 years	Every 3 years
Designated Nursing Officer	Every 3 years	Every 3 years
Quality Controller	Every 5 years	Every 5 years
Designated Porter	Every year	Every year
General Nursing staff	Every year	N/A (See note)

BOC Training

BOC are a BTEC accredited training centre and provide a comprehensive range of training programmes that will provide you with the learning outcomes required by the HTM 02-01.

BOC can also provide free online education, which provides basic knowledge on how to operate all medical gas cylinder valves (including bullnose, pin-index and integral valves).

The free online education is available at www.boctraining.co.uk/local/coursecatalogue

Digital Technology Cylinders

As part of our plans to offer more comprehensive cylinder packages that could help with ensuring the gas is administered correctly, BOC have recently launched a new oxygen cylinder package with a digital display. Improvements with this cylinder include having a visible and audible alarm to let staff know if the flow of oxygen to the patient is not flowing. This new technology has a number of additional benefits, as follows:

- The cylinder detects if a flow rate above zero has been selected, but the shut off valve has not been opened. The cylinder will alarm and display a warning to advise there is no gas to the patient.
- The digital display automatically calculates the remaining cylinder contents depending on the flow rate selected. This could be a benefit to staff when transferring patients.
- The cylinder raises an alarm if the patient isn't receiving the required Oxygen flow rate, which could be a result of a kink in the oxygen tubing.

For more information on this release, BOC Training or digital technology cylinders, please contact us on 0161 930 6010 or email bohealthcare-uk@boc.com

Yours Sincerely

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