Peninsula Dental Social Enterprise (PDSE)

Medical Gas Policy

Version 3.0

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Policy will be updated as required in response to a change in national policy or evidence-based guideline.

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Medical Gas Policy

1. Introduction

1.1 This policy is intended for use by all staff involved with medical gas cylinders and related equipment.

2. Cylinder Storage – General Information and Safety Instructions

2.1 General Storage Conditions

Staff must ensure that the following storage conditions are met:

- The Cylinder Store must NOT be used for storage of anything other than medical gas cylinders and must be kept locked when not in use.
- Access to the Cylinder Store is restricted to staff and essential maintenance personnel.
- The Cylinder Store should be kept clean, dry and free from flammable materials and other rubbish. Cylinder trolley and vehicle delivery access must be kept clear at all times.
- An up-to-date medical gas cylinder identification chart is displayed in the Cylinder Store.
- Emergency instructions, including fire safety, no smoking / naked lights and compressed gas warning notices are displayed in the Cylinder Store and in a prominent position adjacent to the access point of the Cylinder Store.
- Full and empty cylinders and cylinders of different gases should be stored in separate, clearly labelled parts of the Cylinder Store.
- Smaller cylinders should be stored horizontally on racks, suitably protected to prevent damage to cylinder paintwork.

2.2 General Cylinder Handling Safety

When handling medical gas cylinders, and in line with current manual handling regulations, it is advisable that the following precautions are followed:

- It is good practice to wear safety shoes and gloves when moving cylinders.
- Cylinders should only be moved with a trolley designed for appropriately sized cylinders.
- Cylinders should be handled with care, never knocked violently or allowed to fall over.
- Small cylinders fitted with thumbwheel pin index valves must be handled with care.
- Only remove the seal fitted to the valve just prior to using the cylinder to maintain the protection in place to prevent the thumbwheel from being opened inadvertently.
- Never roll cylinders along the ground as this may cause the valve to open accidentally. It will also damage the cylinder label and paintwork.
- Never paint or obscure any markings or labels on cylinders.
- Never apply any unauthorised labels or markings to cylinders, unless advised by BOC to identify faulty or incident cylinders.
- Responsibility for the provision and serviceable condition of PPE and cylinder trolleys rests with the unit/department manager.

2.3 Cylinder Stock Control and Rotation

Care should be taken to ensure that excessive stocks of cylinders are not kept in the Cylinder Store, as this will lead to instances where refill dates are exceeded.

Attempts should be made to store cylinders so that they are accessible, so that the most recently acquired cylinders will be used last and vice versa.

2.4 Cylinder Ordering procedure

The stock level will be maintained such that adequate supply is always available. For inhalation sedation purposes this level is determined as 2 full size E oxygen cylinders and 1 full size E Nitrous Oxide cylinder.

2.5 Delivery of Gas Cylinders to Store

When unloading is completed the driver gives the Delivery Note to the staff member who then checks and signs it if correct.

3. Cylinder Changing Procedure

3.1 Preparing a Cylinder for Use:

- Ensure that hands are clean and grease-free before handling any medical gas cylinders or equipment and, where cylinders are handled on a regular basis, that safety footwear is being worn.
- Check the name of the gas on the collar of the cylinder, the expiry date and the cylinder colour code. If in doubt, refer to the cylinder data sheet displayed in the Cylinder Store.
- Inspect the Bodok seal in the cylinder yoke for wear or damage. Change if necessary, taking care not to expose the surfaces to grease or oil: use only one Bodok seal on each cylinder yoke.

3.2 Disconnecting an Empty Cylinder from Equipment:

- Turn off the cylinder valve and vent excess gas from the equipment regulator and connecting hoses by opening the equipment flow control valves for a few seconds.
- Shut off any equipment control valves.
- Using the correct tool, or manually, loosen the equipment connector and remove from the cylinder valve.
- Do not vent the cylinder or leave the cylinder valve open.
- The cylinder should be returned to the Cylinder Store as soon as possible, checking that any contents status label has been amended as appropriate.

3.3 Connecting a Cylinder to Equipment:

3.3.1 Safety

In this operation the equipment is connected to the cylinder via a cylinder yoke, pressure regulator and high-pressure flexible hose or, in the case of star valves (or other integral flow-controller type units), a low-pressure tube.

To ensure patient and staff safety it is essential that:

- Staff ensure a high standard of cleanliness when storing, transporting or connecting medical gas cylinders to regulators or other medical devices, particularly with respect to the presence of oil and / or grease (e.g. barrier creams).
- Users open medical gas cylinders slowly.
- If resistance to opening of the cylinder is excessive, the cylinder should not be used and should be returned to the manufacturer/supplier via BOC with a label to indicate the problem.
- Users read, understand and follow all instructions and labelling provided by the manufacturer/supplier.
- NB. Always make sure that the equipment designed for the gas – oxygen and medical air flow meters read differently if interchanged.
- The threads connecting different gas flow meters to a regulator may be the same.

3.3.2 Procedure

- Prepare the cylinder for use as in 3.1 above.
- Check the sealing washer (Bodok) at the valve / connector interface.
- Offer the equipment connector to the cylinder valve and tighten firmly with the correct tool, or by hand as appropriate. Do not use excessive force.
- Before opening the cylinder, check the equipment and other flow control valves are turned off.
- For two-stage regulators, turn the outlet pressure control to “OFF”, usually fully ANTICLOCKWISE.
- Using the correct key (or knurled valve knob), open the cylinder valve slowly, fully anticlockwise and then back a quarter turn.
- Check for leaks by closing the cylinder valve and observing to see if the high pressure gauge on the regulator starts to fall. Correct if possible, replacing a faulty cylinder where necessary.
- Slowly adjust the pressure regulator / flow controller to the correct setting.
- Open equipment flow control valve(s) slowly, checking for correct equipment operation.

3.4 Reporting Faulty Cylinders

The BOC website explains more fully the procedures for reporting and returning faulty cylinders to BOC. However, if a problem cylinder is discovered, it must be removed from service immediately, labelled (by means of an attached label – do NOT mark the cylinder) and stored away from other cylinders.

The faulty cylinder must be segregated when returned by the shipping company. Faults that should be reported are listed on the BOC website and include seized or leaking valves, empty-on-receipt cylinders, incorrect labelling and incorrect gas in the cylinder.

4. Departmental Procedures

4.1 Staff responsibilities

In all cases of an emergency, oxygen can be administered as part of the resuscitation and immediate care of a patient.

Staff should be trained in the safe use of medical gas equipment, including knowledge of the appropriate Medical Gas Data and Safety Sheets. All staff should exercise care when using this equipment, particularly with regards to gas wastage and fire precautions.

Oxygen and nitrous oxide are vigorous supporters of combustion and every effort should be made to avoid exposure of these gases to sources of ignition.

ALL medical gas equipment must be kept free from oil and grease, as explosions can be caused if high-pressure gas is exposed to these compounds. In particular, barrier creams should not be used when handling medical gas equipment, especially high pressure cylinders.

All staff using medical gas equipment should have access to the BOC website as it contains valuable safety information.

5. Transport

Gas cylinders will be delivered directly to PDSE sites by BOC to avoid the need to transport cylinders unnecessarily.

All vehicles transporting cylinders of medical gases must display a Compressed Gas sticker when carrying gases and must carry a TREM card.