University Hospitals of Leicester NHS
NHS Trust

Management of Medical Gas Pipeline Systems Policy & Medical Gas Cylinder Management Guidance

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REVIEW DATES AND DETAILS OF CHANGES MADE DURING THE REVIEW

Minor details have been made to ehance the definations and updated operation procedures.

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KEY WORDS

List of words, phrases that may be used by staff searching for the Policy in PAGL

Oxygen, Nitrous Oxide, Entonox, Medical Air, Surgical Air, Vacuum, Cylinder, Piped, Gas

1 INTRODUCTION AND OVERVIEW

1.1. This document sets out the University Hospitals of Leicester (UHL) NHS Trusts Policy and Procedures for the provision of a Medical Gas Pipeline System (MGPS) across the University Hospitals of Leicester NHS Trust (hereafter referred to as the Trust).

1.2. MGPSs are designed to meet the demands of modern healthcare and, as such, form an integral part of the building services systems supporting the Trust's clinical activities. They are a safe and cost-effective method of supplying medical gases to points where these gases can be used by nursing and clinical staff for patient care. They are also a convenient and cost-effective alternative to the use of portable cylinders, compressors and suction units and provide medical gas and vacuum services for clinical needs without associated problems of portage, noise and space.

1.3. Senior Trust management, acknowledge their responsibilities for maintaining the MGPS to the required standards and for providing training of key personnel associated with its operation.

1.4. The Health and Safety at Work Act 1974 and the Management of Health and Safety at Work Regulations 1992, Medicines Act 1968, Pressure Systems Safety Regulations 2000 and COSHH Regulations 2002 place a duty on the Hospital to publish issue and implement a Medical Gas Pipeline System (MGPS) Operational Policy. This Policy outlines the arrangements and procedures required to achieve the objectives set out in those legislative documents and the Health Technical Memorandum 02-01:2006 Operational Management.

2 POLICY SCOPE –WHO THE POLICY APPLIES TO AND ANY SPECIFIC EXCLUSIONS

2.1. The Trust accepts that safe management of a MGPS requires a high level of professional competence and commitment supported by adequate resources.

The Trust is committed to the provision of appropriate training for key personnel, relevant to their particular roles and activities.

The Trust regards Health and Safety as matters of prime importance which are to be given an equal priority with other business and operating objectives and will ensure so far as is reasonably practicable that the safety of employees at work, patients and other persons is not adversely affected by any of the Hospital's operational activities.

The Trust regards safety at work as also being a responsibility of every employee in order to safeguard themselves, their colleagues and other persons who may be affected by their acts, or omissions.

The effectiveness of the MGPS safety policy depends largely on comprehensive procedures being written and adopted dealing with the operational management of the MGPS and medical gas cylinders. Wherever possible, these procedures will be standard throughout the Trust. The written procedures shall take into account any special considerations requiring to be addressed at individual sites.

This policy is intended for use by all staff involved with MGPS and related equipment as defined in Health Technical Memorandum (HTM) 02-01 at the University Hospitals of Leicester (UHL) NHS Trust.

2.2. It applies throughout the Trust to all fixed medical gas pipeline systems and plant and any areas where medical gases may be used or installed.

2.3. Compressed gas and vacuum supplies for general engineering works and pathology department equipment are separate from the general MGPS, and are not included in this policy, although the general principles in this document should be followed for any such installations.

2.4. MGPS terminal units (gas specific outlets) define the limits of the Authorised Persons (MGPS) responsibility in this policy. Equipment connected to the terminal units is not covered by this policy, other than where its design or mode of use may affect system operation or safety e.g. CPAP patient ventilators.

2.5. Medical equipment maintenance is the responsibility of the Clinical Engineering.

2.6. Medical gases should not be used for non-medical purposes, other than as a test gas for medical equipment.

2.7. Medical air normally should be used as the power source for ventilators; the routine use of oxygen as a driving gas is to be avoided if at all possible.

2.8. MGPS management responsibility for each site resides with the Estates Department. It is the Trust's policy that, before work on the MGPS can commence; a permit-to-work form signed by an Authorised Person (MGPS) must be completed.

3 DEFINITIONS AND ABBREVIATIONS

3.1 Anaesthetic gas scavenging system (AGSS): a complete system which conveys expired and/or excess anaesthetic gases from the breathing system to the exterior of the building(s) or to a place where they can be discharged safely.

3.2 Area valve service unit (AVSU): a valve assembly within an enclosure provided for maintenance, for connecting a temporary supply, for shutting off the gas flow to a specific area in an emergency; or for purging and testing of gas supplies after engineering work.

3.3 Authorising Engineer (AE) (MGPS): a person with suitable qualifications (e.g. a chartered or incorporated engineer) and sufficient relevant experience to oversee and audit a number of medical gas systems and their associated Authorised Persons (MGPS), and who can offer expert technical advice to MGPS managers and users. They He/she will also be responsible for recommending Authorised Persons (MGPS) for appointment.

3.4 Authorised Person (AP) (MGPS): a person who has sufficient technical knowledge, training and experience in order to understand fully the dangers involved, and who is appointed in writing by the Executive Manager on the recommendation of an Authorising Engineer (AE) (MGPS). The Authorised Person (MGPS) should have read, have understood and be able to apply the guidance of Health Technical Memorandum

(HTM) 02-01, especially in relation to validation and verification, and should also be completely familiar with the medical gas pipe routes, their means of isolation and the central plant. He/she should they should ensure that the work described in any permit-to-work is carried out to the necessary standards.

3.5 Competent Person (CP) (MGPS): a person having sufficient technical knowledge, training and experience to carry out his/her duties in a competent manner and understand fully the dangers involved, and whose name is on the register of Competent Persons (MGPS). The register should be maintained either by a specialist contractor or by the Authorised Person (MGPS).

3.6 Designated Medical Officer (DMO) and Designated Nursing Officer (DMO): the medical or nursing officer acts as a focal point for communications related to MGPS in a specified department or departments. These Designated Officers give permission for any interruption to the MGPS.

3.7 Designated Porter (MGPS): a suitably trained person who has been given responsibility for a particular operation involving medical gas cylinders, for example changing cylinders on an MGPS manifold.

3.8. Clinical Engineering (CE): the operational team responsible for the procurement, maintenance and management of the medical engineering equipment outside of the scope of Estates and Facilities.

3.9. Emergency reserve manifold (ERM): a manifold used as an alternative means of supply for a medical gas supply source, for example the automatic manifold supporting a duplex medical air plant. Also the ERM refers to additional manifolds that have been added to an MGPS to protect against supply failure arising from such events as main manifold failure.

3.10. Entonox: BOC trade name for a 50/50 mixture of nitrous oxide and oxygen. Used for pain relief.

3.11. Hazard level: the term used to describe the level of risk to a patient served by an MGPS when work on that MGPS is taking place. In this Policy two levels of hazard are defined: high and low. Either of these will be used to define the type of permit used to manage the MGPS work.

3.12. Local area alarm: an alarm indicator unit sited in areas, especially high dependency, and used to signal high or low medical gas pipeline pressure to local clinical staff.

3.13. Manifold (automatic): a device that allows connection of high pressure gas cylinders to a medical gas system. They are designed such that they will continue to supply gas in the event of an electrical failure.

3.14. Medical gas pipeline system (MGPS): the fixed medical gases pipework, the associated supply plant or pumping equipment, and the warning and alarm systems. This includes medical compressed air, medical vacuum and anaesthetic gas shortage

3.15. Permit-to-work: a form of declaration in five parts used to control work on the medical gas system. Its objective is to prevent inadvertent isolation of, or unauthorized work on, the medical gas system.

3.16. Quality Controller (MGPS): a person appointed in writing by the Executive Manager on the recommendation of the Chief Pharmacist. The Quality Controller (MGPS) should normally be a pharmacist or other suitably trained person, and should have specialist knowledge, training and experience of MGPS and HTM 02-01. The Quality Controller (MGPS) is responsible for the quality of the medical gases; his/her duties include carrying out quality tests specified in HTM 02-01 Part A, Chapter 15.

4 ROLES – WHO DOES WHAT

4.1 Key Personnel and Responsibilities within the organisation

4.2. Chief Executive: ultimate management responsibility for the MGPS rests with the Trust's Chief Executive.

4.3. Director of Estates and Facilities: has delegated responsibility from the Chief Executive to provide written appointment of Authorised Persons (MGPS) for the Trust. The Director of Estates and Facilities herein delegates day-to-day management responsibility for the MGPS to the Authorised Persons (MGPS).

4.4. Authorising Engineer (AE): the Trust will engage the services of an Authorising Engineer (MGPS), who will undertake the following duties:

- to recommend to the (or their representative) those persons who, through individual assessment, are suitable to be Authorised Persons (MGPS);
- to ensure that all Authorised Persons (MGPS) have satisfactorily completed an appropriate training course;
- to ensure that all Authorised Persons (MGPS) are re-assessed every three years and have attended a refresher or other training course before such re-assessment;
- to regularly review the management systems of the MGPS, including the permit-to-work system;
- to monitor the implementation of the operational policy and procedures.

4.5. Authorised Person (AP) (MGPS): the Authorised Persons (MGPS) assumes effective responsibility for the day-to-day management and maintenance of the MGPS. One of these will be nominated by the Head of Facilities for each site to be the Coordinating Authorised Person (MGPS).

The duties and responsibilities of Authorised Persons (MGPS) are to:

- ensure that the MGPS is operated safely and efficiently in accordance with the statutory requirements and guidelines;
- manage the MGPS permit-to-work system, including the issue of permits to Competent Persons (MGPS) for all servicing, repair, alteration and extension work carried out on the existing MGPS;
- supervise the work carried out by Competent Persons (MGPS) and monitor the standard of that work;
- manage the on-call rota for MGPS Authorised Person and MGPS Competent Person to provide 24/7 cover at all times.
- commission MGPS works and sign-off as fitted drawings
- ensure that the site MGPS maintenance specification and schedule of equipment (including all plant, manifolds, pipework, valves, terminal units and alarm systems) are kept up to date;

- liaise closely with Designated Nursing/Medical Officers, the Quality Controller (MGPS) and others who need to be informed of any interruption or testing of the MGPS;
- provide technical advice to those responsible for the purchase of any medical equipment which will be connected to the MGPS in order to avoid issues arising from insufficient capacity and inadequate flow rates;
- prioritise for the replacement of MGPS central plant and associated systems;
- organise such training of Estates staff (and other staff if requested) and/or transfer of MGPS information as is needed for the efficient and safe operation of the MGPS;
- put arrangements in place to monitor contractors;
- develop contingencies for MGPS emergencies.

4.6. Competent Person (CP) (MGPS): This may be either an in-house Maintenance employee, or a Contractor. All contractors carrying out medical gas work shall be registered to BS EN ISO 9001/BS EN ISO 13458, with clearly defined registration criteria.

The duties and responsibilities of Competent Persons (MGPS) are:

- to carry out work on the MGPS in accordance with the site policy/arrangements;
- to carry out repair, alteration or extension work as directed by an Authorised Person (MGPS) in accordance with the permit-to-work system and Health Technical Memorandum 02;
- to perform engineering tests appropriate to all work carried out and inform the Authorised Person (MGPS) of all test results;
- to carry out all work in accordance with the Trust's health and safety policy.

4.7. Chief Pharmacist: It is the responsibility of the Chief Pharmacist to provide a suitably qualified quality control pharmacist with MGPS responsibilities.

The pharmacy department will:

- Receive delivery notes for compressed gas cylinders, check against invoices received and pass invoices for payment.
- Order and supply cylinders of medical gases and special gas mixtures for all of the clinical areas of the hospital.
- Maintain a record of cylinder rental charges and pass rental invoices for payment.
- Ensure that cylinder gases comply with European Pharmacopeia Requirements.

4.8. Quality Controller (QC) (MGPS): This person may be an in-house qualified Pharmacist. It is the responsibility of the Trust to appoint, in writing, on the recommendation of the Chief Pharmacist, a Quality Controller from the Register of QC (MGPS). The Authorised Person (MGPS) will be responsible for liaising with the Quality Controller (MGPS) and organising attendance as required.

The duties and responsibilities of the Quality Controller (MGPS) are:

- to assume responsibility for the quality control of the medical gases at the terminal units (that is, wall or pendant medical gas outlets);
- to liaise with the Authorised Person (MGPS) in carrying out specific quality and identity tests on the MGPS in accordance with the permit-to-work system and relevant Pharmacopoeia standards;
- to carry out quarterly quality control testing of medical/surgical compressed air plant in accordance with HTM 02 / Ph. Eur. Requirements.

They should have received training on the verification and validation of MGPS and be familiar with the requirements of this MGPS operational policy.

4.9. Medical Gas Cylinder Management:

The Pharmacy Department are responsible for purchasing Medical Gas cylinder stock at the Leicester Royal Infirmary and the Leicester General Hospital. These duties and responsibilities are coordinated at the Glenfield Hospital by General Manager ITAPS.

Their duties and responsibilities are to:

- receive delivery notes for compressed gas cylinders, check against invoices received and pass invoices for payment;
- order and supply cylinders of medical gases and special gas mixtures (as required) for manifolds (oxygen, nitrous oxide and medical air), wards and departments:
- hold appropriate Certificates of Conformity for gases/cryogenic liquids for at least one year from delivery of gases to site.
- ensure that cylinder gases are purchased from approved supplier to comply with Ph. Eur. requirements;
- in liaison with Portering and Estates, ensure that safe, adequate and correct storage and facilities are available and that safe handling procedures for medical gas cylinders are followed at all times.
- liaison with Portering to ensure effective systems with supply and renewal of cylinders to and from wards and departments

4.10 Designated Medical/Nursing Officer (DMO/DNO (MGPS))

It is the policy of the Trust that all MGPS work where patients may be affected, should be carried out under the MGPS permit-to-work system and authorised by the nursing staff and senior clinical staff. Henceforth defined as Designated Nursing and Medical Officers respectively.

Appointment, duties and responsibilities of the Designated Medical/Nursing Officer are as follows:

- Designated Nursing Officers (MGPS) are (by job title) the Matron responsible for a series of wards/Department or Nursing Sister/Senior Nurse in charge of a ward will be appointed by The Hospital’s Divisional Nursing Officer.

- Designated Medical Officer(s) (MGPS) used for major, multi-department shutdowns is a senior Anaesthetist and should be nominated by the Hospital's Clinical Director/Divisional Manager.
- It is the responsibility of the Authorised Person (MGPS) to liaise with the DNO/DMO when any interruption or risk of interruption to patient dependent gas supplies is to be undertaken.
- No planned interruption to a medical gas patient dependent supply can take place without the written permission of either a DNO (MGPS) or DMO (MGPS) i.e. by signing of an appropriate MGPS permit to work.
- most work at department/ward level will be controlled by the relevant DNO (MGPS).
- major supply interruptions will require the permission of a DMO (MGPS).

During out of hours work it is not normally necessary to carry out planned work under an MGPS permit to work. However, in the event of any work outside normal working hours, responsibility for liaison with the Authorised Person (MGPS) and signing of necessary permits will be through the Duty Manager and the Estates on-call MGPS Authorised Person.

During emergency situations it will be the responsibility of the senior Duty Nurse / Clinician to liaise with the Duty Manager and the on-call Authorised Person (MGPS) to co-ordinate contingency arrangements for patient care, which may involve provision of alternative gas supplies, including gas cylinder supply.

Although the AP (MGPS) will be able to advise on suitable training for the DNO/DMO (MGPS), it is the responsibility of the Line Manager to organise and monitor such provision for Clinical Staff.

4.11. Designated Porter:

A Designated Porter is a Porter who has undergone specialist training in the identification, safe handling and storage of medical gas cylinders including relevant manual handling training including the handling of compressed medical gas cylinders.

Designated Porters within the Trust will undertake the following duties:

- assist with the delivery of gas cylinders by the gas supplier
- deliver full gas cylinders from the 'FULL' cylinder stores to wards, departments and manifolds and return empty cylinders to the 'EMPTY' stores;
- transfer gas delivery notes from the delivery driver to the Pharmacy Office
- identify, and remove from service, faulty (e.g. leaking) cylinders and subsequently notify Pharmacy Office of the location of such cylinders;
- It is essential that the Designated Person works safely at all times, using the appropriate Personal Protective and Manual Handling Equipment, and they are responsible for reporting only missing or defective equipment immediately to the Portering Manager.

4.12. Head of Clinical Engineering

Is responcible for the routine inspection, servicing, maintenance and actioning safety alerts of pipeline connected medical devices.

He also ensures the emergency regulator kits which are stored at each of the three hospitals Portering lodge are availible and serviced so in event of failure of the pipeline infrastructure they can be utilised.

This includes items such as flowmeters, suction regulators, Entonox regulators, ventilators, anaesthesia machines, CPAP units etc.

4.13. The UHL Medicines Optimisation Committee (MedOC):

Are responsible for overseeing the development of a Trust Piped Medical Gas Policy and management arrangements relating to Medical Gases throughout the Trust. The MMB shall include appropriate staff members, including representatives from Pharmacy, Portering/Estates, Technical Services, Anaesthetics, and Nursing.

Other staff groups will be co-opted as and when required. The Committee reports to the Trust Board.

Currently the Medical Gas Safety Groups role is undertake the Medicine Optimisation Committee with a dedicated session at the start of the meeting.

4.13. Responsibilities of and communication with stakeholders:

The Authorised Person (MGPS) and the Designated Medical/Nursing Officer for the areas affected are responsible for co-ordinating actions and communicating with relevant stakeholders.

5. POLICY IMPLEMENTATION AND ASSOCIATED DOCUMENTS –WHAT TO DO AND HOW TO DO IT

5.1. The approved document will be downloaded onto the INsite documents section of the UHL intranet. Electronic copies of the policy will be forwarded to the UHL Authorised Persons (MGPS) by the Senior Statutory Compliance Manager, for distribution by the Authorised Persons to key MGPS stakeholders.

5.2. This policy is supported by the following procedures in the associated documents as detailed below, which must be used in conjunction with this policy:

- UHL Shortage of Oxygen - Standard Operating Procedure –B23/2021
- Fire Policy & Fire Strategy
- Emergency Action Plans for wards / departments
- Major incident Plan
- DATIX Incident Reporting
- Equipment Decontamination Certificates
- Trust Health and Safety Policy

6 EDUCATION AND TRAINING REQUIREMENTS

6.1. Estates/Contractor Training

It is essential for the safety of patients and staff that no person should operate, or work on, any part of an MGPS unless adequately trained or supervised.

The Maintenance/Site Manager should ensure that all staff working on medical gas pipeline systems is appropriately trained.

The Authorised Person (MGPS) may request training records of contractors or staff at any time.

Following initial accredited training, re-training and assessment should take place at regular intervals as recommended by the Authorised Engineer and the Authorised Person (MGPS).

6.2. Training of Clinical Staff

Although the AP (MGPS) will be able to advise on suitable training for the DNO/DMO (MGPS), it is the responsibility of Clinical Line Management to identify and monitor such provision for Clinical Staff, where required.

6.3. Training of Key Personnel

Retraining and reassessment should be carried out at regular intervals. Table 1 shows recommended intervals, but there will be occasions when additional training may be required (for example response to changes in technology or guidance, equipment failures, and incidents involving risks to staff/patients).

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

7 PROCESS FOR MONITORING COMPLIANCE

7.1. Policy Monitoring Table

Element to be monitored	Lead	Tool	Frequency	Reporting arrangements
Compliance with HTM	Senior Specialist Engineer		Annual	Audit by External Authorising Engineer
Completion of permit-to- work for high hazard work	External Authorising Engineer		Annual	Permit-to-work books audited
Training Records	External Authorising Engineer		Annual	Audit
Changes legislation/guidance documents	Senior Specialist Engineer		On-going	Continuing Professional development
Incidents related to medical gases	Senior Specialist Engineer		6 weekly	MedOC

8 EQUALITY IMPACT ASSESSMENT

8.1. The Trust recognises the diversity of the local community it serves. Our aim therefore is to provide a safe environment free from discrimination and treat all individuals fairly with dignity and appropriately according to their needs.

8.2. As part of its development, this policy and its impact on equality have been reviewed and no detriment was identified.

9 SUPPORTING REFERENCES, EVIDENCE BASE AND RELATED POLICIES

9.1. A non-exhaustive list of documentation relevant to the MGPS.

9.2. Statutory requirements relevant to Medical Gas Pipeline Systems:

- Health and Safety at Work etc. Act 1974
- Management of Health and Safety at Work Regulations 1999
- Workplace (Health, Safety and Welfare) Regulations 1992
- Provision and Use of Work Equipment Regulations 1998
- Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995
- Control of Substances Hazardous to Health (COSHH) Regulations 2002
- Pressure Equipment Regulations 1999
- Pressure Systems Safety Regulations 2000
- Highly Flammable Liquids and Liquefied Petroleum Gases Regulations 1972
- Medicines Act 1968
- Manual Handling Operations Regulations 1992 (as amended 2002)
- Personal Protective Equipment at Work Regulations 1992
- Electromagnetic Compatibility Regulations 2005
- Electricity at Work Regulations 1989**9.3.** Other guidance applicable to medical gas pipeline systems:

Health Technical Memorandum (HTM) 02-01 "Medical Gas Pipeline Systems", 2006 Part A: Design, Installation, Validation and Verification Part B: Operational management

Supplement No 1 – Supplement No 1 "Dental Compressed Air and Vacuum Systems" 2003

Supplement No 2 – “Piped Medical Gases in Ambulance Vehicles" 1997 ‘

- Health Technical Memorandum (HTM) 03-01 "Specialised ventilation for healthcare premises", 2007

- Part A: Design and validation
- Part B: Operational Management and performance verification

- National Health Service Model Engineering Specification C11 – ‘Medical gases’
- European Pharmacopoeia standards for medical gases, including medical compressed air
- National Health Service Model Engineering Specification, C11, “Medical Gases”, 1995

10 PROCESS FOR VERSION CONTROL, DOCUMENT ARCHIVING AND REVIEW

10.1. This policy should be reviewed every three years (or when conditions change) by the Trust Authorised Persons (MGPS) and presented to the UHL Medicines Management Board, the UHL Health and Safety Committee and the UHL Policy and Guidelines Committee for comment and ratification.

10.2. Document control is facilitated by the allocation of a unique reference number by Trust Administration Department and by the Senior Statutory Compliance Manager maintaining the master copy and responsibility for any amendments.

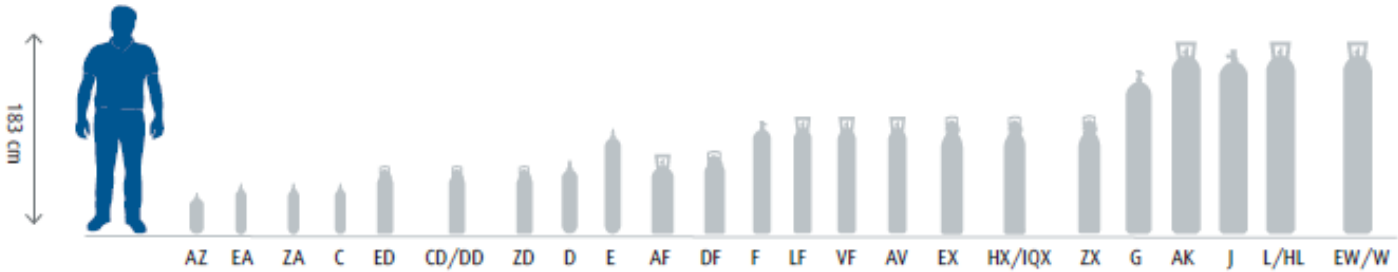
10.3. The updated version of the Policy will then be uploaded and available through INsite Documents and the Trust's externally-accessible Freedom of Information publication scheme. It will be archived through the Trusts PAGL system.

Appendix 1

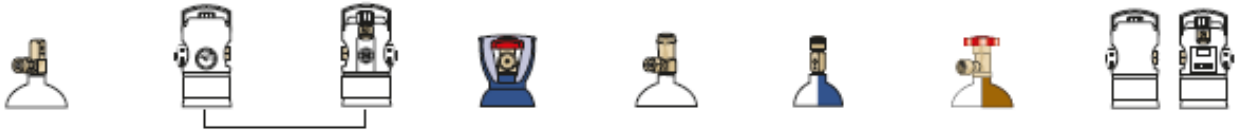
BOC
A Member of The Linde Group

Medical gas cylinder data chart

Cylinder types



Valve types



Pin-index Side Spindle valve | Integral valve | Handwheel valve | Bullnose valve | Pin-index valve | Handwheel side outlet | Digital valve

Pin index valves

Oxygen | Nitrous oxide | ENTONOX | Air | Carbon dioxide

Please note not all products are marketed in both UK and Republic of Ireland.

Appendix 2

Contact details of key personnal

Duty Authorised Person (MGPS) - Contact via Estates Helpdesk, or Duty Manager for out of hours response

Authorised Person (MGPS) - Contact via Estates Helpdesk, or Duty Manager for out of hours response

Duty Pharmacist - Contact via Duty Manager or Switchboard

MGPS Designated Medical Officer - Duty Anaesthetist - contact via Duty Manager or Switchboard

MGPS Designated Nursing Officer - Matron or Sister of area affected

Designated Porter - Contact via the Portering Helpdesk (7888)

QC Pharmacist - Contact via MGPS AP

Appendix 3

Medical gas Cylinder Management (including Oxygen cylinders)

Replenishment of local medical gas cylinder stock is dependent on ward/area clinical staff having arrangements in place to identify the required stock level for their patient needs and ensuring that appropriate levels of stock are maintained locally in the designated holding area. It is their responsibility to monitor usage and return empty cylinders to a designated local area for replacement by porters, or replacement under the arrangements for 'one for one' stock replenishment by BOC. Failure to return empty cylinders to the ward/area designated empty cylinder area may result in local stock not being replenished adequately.

a) Ward/clinical areas where medical gas is used should have a Medical Gas Designated Nursing Officer (DNO) and/or a Designated Medical Officer (DMO) to oversee the patient dispensing and local medical gas cylinder stock management for their patient needs. Where no DNO/DMO is appointed, the duty for medical gas cylinder management reverts to the Matron, Sister, or Senior Nurse in charge.

b) Designated Porters are responsible for ensuring stock is maintained for the Emergency Reserve Manifold rooms and for changing cylinders, where required and for working with BOC to maintain adequate stock levels.

c) Only persons who have had specific training in the safety of Medical Gasses, manual handling techniques and cylinder changing procedures should be allowed to change cylinders on Medical Gas manifolds or medical equipment.

d) Porters with specific Medical Gas training are known as "Designated Porters"

Medical Gas Cylinder Storage in Clinical Area

a) E size cylinders and smaller should be stored horizontally on racks.

b) Gas cylinders must always be firmly secured and never left unsupported.

c) Cylinders in a clinical area (ward or unit) must be stored on a secure trolley or suitable rack in a well-ventilated "parking" area that will not block doorways or fire exits

Ordering additional Medical Gas Cylinders

The responsibility for ordering additional Medical Gas Cylinders is through:

- Pharmacy for the LRI and the LGH
- Theatres for the GH

For out of hour's emergencies, the hospital Duty Manager should be called via the main UHL Switchboard.