

Part IV

Domiciliary Oxygen Therapy Service

1. Domiciliary Oxygen

Oxygen should be prescribed for patients in the home only after careful evaluation and never on a placebo basis. Oxygen may be supplied in cylinders or where the quantity required justifies it, from a concentrator but in general the appropriate method of supply will depend on the type of therapy, intermittent or long term, to be prescribed.

2. Intermittent Therapy

2.1 The majority of patients will have oxygen prescribed for intermittent use in a variety of respiratory conditions. This type of therapy is used in patients with hypoxemia of short duration, for example, asthma, when the condition is likely to recur over months or years. It may be prescribed for patients with advanced irreversible respiratory disorders to increase mobility and capacity for exercise and ease discomfort, for example in chronic obstructive bronchitis, emphysema, widespread fibrosis and primary or thromboembolic pulmonary hypertension. Such patients will usually be supplied with oxygen in cylinders.

2.2 Arrangements for the prescription and supply of cylinder oxygen to those patients who require intermittent therapy are set out at paragraph A.1 to this part of the Drug Tariff. GPs are asked to co-operate in an effort to make this part of the oxygen service more cost effective. If more than one or 2 are regularly required for a particular period, prescribing in multiples of 3 cylinders would produce savings by reducing the number of journeys. It is accepted that it will not always be possible to prescribe in this way, for example, because of the infrequency of use of oxygen or because of storage problems at the patient's home but whenever possible cylinders should be prescribed in multiples of 3.

3. Long Term Oxygen Therapy (LTOT)

3.1 Long-term oxygen therapy is the provision of oxygen for 15 hours or more a day for a prolonged period and is of benefit to many patients with chronic hypoxemia. For these patients oxygen should, where possible, be provided by a concentrator.

3.2 Since it is important to recognise that long term oxygen therapy is of benefit to a limited number of patients and that the needs of the majority of patients will continue to be met by intermittent therapy from cylinders, clinical guidelines for prescribing long term therapy have been drawn up for the benefit of general practitioners. These guidelines are set out in full below.

4. Guidelines For Prescribing Long-Term Oxygen Therapy (LTOT)

- 4.1 On present information, patients who are likely to benefit from long-term oxygen therapy will by definition have chronic hypoxemia, but may for the purposes of these regulations be divided into three groups: -
1. Those for whom there is an absolute indication, for which there is scientific evidence of the value of long-term oxygen therapy.
 2. Those in whom there are good grounds for assuming the value of oxygen therapy, but for which there is no firm scientific evidence at present.
 3. Patients in whom oxygen would have a useful palliative effect.
- 4.2 GPs who identify patients who might belong to any of these groups will wish to have consultant advice on the need for LTOT.

5 Indicators For The Use Of LTOT

- 5.1 Absolute indication.

Patients for whom there is clear evidence of the value of LTOT will be those with chronic obstructive airways disease, hypoxemia and oedema. Such patients will have ankle oedema or a history of an acute exacerbation when ankle oedema was observed. It will be necessary for such patients to be seen and assessed by a respiratory physician with access to respiratory function services. Suitable patients would have a forced expiratory volume (FEV₁) of less than 1.5L, a forced vital capacity (FVC) of less than 2L, and arterial oxygen tension less than 7.3kPa (55 mm/mercury) and some elevation of arterial carbon dioxide tension (PaCO₂) greater than 6.0kPa or 45mm/mercury. These tests are the minimum requirement and they should be made in a stable phase of the condition when all reversible factors have been adequately treated e.g. infection, reversible airways disease, cardiac disease etc. In order to establish stability, the spirometric measurements and the arterial blood gases should be repeated at an interval of not less than 3 weeks. There should be variation of no more than $\pm 20\%$ in the spirometric measurements and a variation of no more than ± 5 mm/mercury or 0.6kPa in the arterial oxygen tension. If such variations are exceeded then a further 3 weeks interval should elapse before the tests are repeated again.

- 5.2 Other patients with chronic obstructive airways disease.

The second group will include all patients with chronic obstructive airways disease having the same spirometric characteristics and the same levels of arterial oxygen tension as those described in para 1.3.1, but in whom hypercapnia is not present and oedema has not been witnessed. Many such patients were studied in American trials of long-term domiciliary oxygen therapy and benefit was clearly shown but such patients were excluded from the British studies. However, many of these patients, including refractory asthmatics and sufferers from cystic fibrosis could be expected to benefit from long-term oxygen therapy. On present evidence long-term domiciliary oxygen therapy should not be denied but the same criteria of stability should be applied to ensure that they are established cases of chronic hypoxemia. We hope that further studies on this group of patients can be urgently carried out.

5.3 Palliative use of oxygen.

This group should include patients with other respiratory conditions associated with severe arterial hypoxemia, but without hypercapnia, for which oxygen therapy may have a useful, palliative effect, without necessarily affecting survival. Examples would be severe hypoxemia associated with the terminal stages of fibrosing alveolitis, industrial lung fibrosis, terminal stages of emphysema, and lung infiltrations such as in sarcoidosis, lymphangitis carcinomatosa and certain collagen disorders.

5.4 Other conditions.

There are other conditions in which palliation of chronic respiratory failure might be considered, for example in severe kyphoscoliosis, gross obesity and the end stage of irreversible peripheral neuropathies and muscle disorders. However, these conditions are associated with such serious disturbances of ventilatory drive that the abolition of hypoxemia by providing additional inspired oxygen may be dangerous. There is also preliminary evidence that long-term oxygen therapy may help some children with pulmonary hypertension. For all these patients the initial assessment would have to be even more detailed than that already described for patients with chronic obstructive airways disease.

6. Post Assessment

- 6.1 If LTOT is to be prescribed and used effectively it must be remembered that the treatment involves a minimum of 15 hours oxygen per day and whenever possible this should be provided by means of a concentrator. The patient must be fully acquainted with the installation, the working of the concentrator and the need to keep to the arduous therapeutic regimen. The initial flow rate of oxygen through standard nasal prongs will be 2L/min, but may need to be modified between 1.5 and 2.5 litres per minute when the arterial blood gases have been checked with the patient breathing oxygen. The aim is to elevate PAO_2 to 60 mmHg (8kPa) or more without excessive hypercapnia.
- 6.2 Full co-operation by the patient is essential and expert support will be necessary to enable the 15 hours daily treatment period to be achieved. Regular monitoring in the home by appropriately trained nurses or lung function technicians and follow-up in respiratory outpatients by thoracic physicians will be necessary to ensure that the treatment is achieving optimum results.

7. Patients For Whom Long-Term Oxygen Therapy Is Not Useful

- 7.1 It is important to stress the circumstances under which LTOT is not indicated. Patients with respiratory conditions that merely produce breathlessness without hypoxemia should not be treated. Long-term therapy is not intended for acute conditions such as lobar pneumonia and other chest infections. Patients with lesser degrees of chronic obstructive airways disease (i.e. not conforming to the criteria in para 1.3.1) or reversible obstructive airways disease including those having acute exacerbations are not candidates for this form of oxygen delivery since their hypoxemia is likely to be only of short duration.

8. Smoking And Long-Term Oxygen Therapy

- 8.1 Patients who continue to smoke are unlikely to gain much benefit from LTOT and every effort must be made to persuade them to discontinue smoking. There is also the additional hazard of fire.

9. Summary

- 9.1 It is anticipated that the provision of oxygen concentrators for such patients described above who have proven chronic hypoxemia will be an additional service. It is not intended that oxygen concentrator installations will compete with intermittent oxygen therapy at present provided for patients by cylinder supplies. Patients who would benefit from LTOT from concentrators will need to be carefully selected and carefully monitored and will be relatively few in numbers compared with those having intermittent short burst therapy.

A. Domiciliary Oxygen Therapy Service Provided By Chemists To Health Service Patients**1. General Arrangements for the Service**

- a. The Board's list of contractors who provide oxygen therapy services includes only those chemists who are authorised to hold a number of lightweight single unit oxygen sets (Specifications 01 A and B) and stands and
 - i. regularly stock oxygen equipment, as specified in the Drug Tariff, and oxygen gas on the premises;
 - ii. are prepared, when it would not be reasonable to expect that a patient's representative could safely do so or when he is unable to do so, to deliver the oxygen set and cylinders to the patient's home, to collect empty cylinders when they are being replaced, and to collect the set and cylinders when informed that treatment has been discontinued; and
 - iii. are prepared to erect and explain the operation of the oxygen set and cylinders at a patient's home, particularly when the patient is having oxygen therapy for the first time.
- b. At any time a chemist willing to provide this service may apply to the Board for inclusion on the list.
- c. A copy of the Board's list of oxygen contractors, with details of the services being provided, is supplied to every chemist and doctor.
- d. If a prescription for an oxygen set or cylinders is presented to a chemist whose name is not included in the list, he should normally provide the patient or his representative with the name, address and telephone number of at least 2 chemists who provide oxygen therapy services at the time the need arises and who are nearest to the patient's home.
- e. Except where, in emergency, a set has been loaned by a distant contractor, oxygen gas should normally be supplied to a patient only by the chemist who has loaned the set. When, exceptionally, cylinder replacements are provided by a chemist other than the one who supplied the set, he should at the time when cylinders are supplied satisfy himself that the patient continues to operate the equipment satisfactorily.
- f. Delivery and collection of sets and/or cylinders is to be undertaken by a patient's representative where he is willing and where the chemist can fully satisfy himself that the representative is able to transport a set and/or a cylinder, carry it and secure it in position in the house and fit the mask after the instructions provided in the set have been explained to him. In other circumstances delivery, erection and collection of sets and/or cylinders and the explanation of the operation of oxygen equipment at the patient's home, particularly at the commencement of treatment, is to be undertaken by the contractor.
- g. The recovery of empty cylinders from patients, and their prompt return to the suppliers for refilling, is essential if adequate supplies of oxygen for the use of patients are to be maintained.

- h. As part of the explanatory information under (f), **the chemist must provide appropriate advice on procedures** to be followed to ensure safe use of oxygen equipment in the home. In particular any **safety instructions** issued by the manufacturers of the equipment **must be brought to the attention of the patient or his representative**. In addition chemists will wish to advise the patient or his representative that the Fire Prevention Officer from the local Fire Brigade is prepared to visit the patient's home to provide practical advice which will help ensure safe use of the oxygen therapy equipment.

2. Oxygen Equipment, which may be supplied on loan by chemists to patients

a. Oxygen Sets

The following sets* (see Specification 01A and 01B) are approved for use within the oxygen therapy service, and any one may be loaned against a prescription for a set:

- i. BOC Set (BOC 330228) Specification 01A
- ii. Ohmeda Domiciliary Set (MDS 240) Specification 01B
- iii. Oxylitre Set (MR 210) Specification 01A
- iv. Air Apparatus and Valve set (D24) Specification 01B
- v. Ohmeda Domic 2/4 Set Bearing 'S' Stamp (9155033) Specification 01A
- vi. BOC Domiflow Set (888830) Specification 01A
- vii. Puritan Bennett Set (778435) Specification 01A

* Spare O-rings may be supplied by the manufacturer with the set, but these should be removed by the contractor before the set is supplied to the patient.

On no account should chemists attempt to modify any oxygen set to produce a higher flow rate than that for which it has been designed. To do so could create a hazardous situation for the patient.

b. Oxygen Administration Equipment

The following masks are approved for use within the oxygen therapy service:-

- | | | |
|-----|------------------------------|---------------------------------------|
| i. | Constant performance masks:- | See descriptions
and illustrations |
| a. | Ventimask MK IV, 28% | |
| b. | Intersurgical 010 Mask 28% | |
| ii. | Variable performance masks | See descriptions
and illustrations |
| a. | Intersurgical 005 Mask | |

Constant performance masks provide a nearly constant concentration of 28% oxygen in air over a wide range of oxygen supply, and irrespective of breathing pattern. When a constant performance mask is supplied to a patient, the recommended flow rate is 2 litres per minute (the Medium setting on the control head).

Variable performance masks provide a variable concentration of oxygen in air. The concentration varies with the rate of flow of oxygen supplied and the breathing pattern of the patient.

Two Ventimask MK IV, 28% constant performance masks will be supplied by the manufacturer with each oxygen set. (On account of bulk, these masks require to be packed separately from the remainder of the set).

Where a prescriber considers that the Ventimask MK IV 28% mask is not appropriate for the treatment of a patient, he must state on the prescription which alternative approved mask is to be supplied.

Every mask is supplied for the use of one patient only. All masks, therefore, are "disposable" but each is sufficiently robust to withstand usage even over a long period of treatment.

- c. **Connection plastic tubing** (see Specification 01A and 01B). A new length of connection plastic tubing (approx. 150 cm) is to be supplied for each new patient. During extended loan periods, replacement lengths of tubing may also need to be supplied.

- d. **Oxygen**

Oxygen should only be prescribed in 1360 litre cylinders.

The lightweight aluminium cylinder supplied by BOC is free-standing and obviates the need for a cylinder stand to be supplied to the patient.

3. **Procedure to be followed in loaning equipment, confirming continued use, and termination of BSO's liability.**

- a. The chemist shall on making the loan include a note with the set, saying "This equipment is the property of the chemist, and must be returned immediately to the chemist in good condition when it is no longer required. Any loss of or damage to the equipment is the responsibility of the patient".
- b. The chemist shall endorse the prescription with
 - i. name of set supplied;
 - ii. the date of commencement of loan; and
 - iii. size and number of cylinders supplied.
- c.
 - i. Where the return shows that the set has been on loan for at least 3 months and has not been returned to the chemist, the Board shall ascertain from the doctor whether the equipment is still required; 2 similar enquiries shall be made if necessary during the first year of the loan.
 - ii. In cases where the equipment has been on loan to a patient for 18 months or more the Board should make special enquiries as to the circumstances of the loan.
 - iii. Where the Board is satisfied, after making enquiries that the equipment is no longer required by the patient it shall notify the chemist to arrange recovery.
- d. Where the patient fails to return the equipment the onus of collecting it rests on the chemist.

4. **Method of claiming compensation for financial loss in respect of Oxygen Equipment**

Where the chemist suffers financial loss as a result of the act or default of a person causing the loss of, or damage to, oxygen equipment loaned, and the chemist forthwith informs the Board of such financial loss and of the action taken by him, short of actual litigation, to recover the equipment and compensation for its loss or damage from the person concerned, the Board shall investigate the matter and if in their opinion the financial loss was not occasioned by the act or default of the chemist or by his failure to take the appropriate action to recover the equipment and compensation, the Board shall make a payment to him based on the value of the equipment at the date of loss, or equivalent to the cost of repairing the said damage, as the case may be:

Provided that where the contractor is dissatisfied with the decision of the Board he may refer the matter to the Department who shall give such direction to the BSO as it thinks fit.

In this paragraph, the expression "person" means the person supplied, the patient concerned, members of his household, or the authorities of an institution to which the equipment is delivered, as the case may be.

B. Additional Specifications And Descriptions**Lightweight Single Unit Sets****Specification 01A** (see also diagram)

The SET comprises:-

- i.
 - a. a valve which reduces the gas cylinder pressure from 13,650 k.P.a. to a pressure of 70 to 415 k.P.a;
 - b. a miniature cylinder contents (pressure) gauge calibrated with $\frac{1}{4}$, $\frac{1}{2}$ and full markings;
 - c. a cap consisting of a 2 flow selector which can be turned from the ratchet position marked "OFF" to ratchet positions marked "MED" and "HIGH", these being designed to correspond to flow rates of 2 litres and 4 litres respectively per minute;
 - d. an outlet, being the male portion of a bayonet type connection;
 - e. a standard bull-nose cylinder adaptor designed for finger tightening and preferably incorporating an O-ring washer;
 - f. a safety device, such as a sintered filter, to prevent the spontaneous combustion of particulate material in the control head or in the neck of the cylinder.
- ii. **Connection Plastic Tubing:** 150 cm (approx.) plastic tubing, 5 mm bore, 8 mm externally (Ref. Portex 800/012/300) with at one end a bayonet fitting to the control head.
- iii. **A Key Spanner** of 100 mm to 150 mm length, for opening the oxygen cylinder valve.

The set parts i-iii are packed in a strong box with full operating instructions being given in the lid.

Two Ventimask MK IV, 28% constant performance masks, each in a closed plastic bag, will be supplied by the manufacturer with each oxygen set. (On account of bulk, these masks will require to be packed separately from the remainder of the set).

NOTE: Spare O-rings may be supplied by the manufacturer with the set, but these should be removed by the contractor before the set is supplied to the patient.

Specification 01B (Lightweight (Single Unit) Oxygen Set) (see also diagram)

The SET will comply with all the requirements of Specification 01A with the exception of Clause i.c. where the following Clause will apply:-

"The head comprises: a control knob which permits the flow of gas to be turned on and off. It will be suitably labelled to indicate the ON and OFF position and the direction of rotation to turn ON ... A ratchet selection device to enable the gas flow to be set at predetermined positions to give flow rates of 2 litres and 4 litres per minute respectively. The positions will be clearly indicated and labelled 2 L (MED) and 4 L (HIGH)."

Lightweight sets which comply with the above requirements may be loaned against an order for a set.

Specification 01C**Throw Away Tubing Assemblies****1. Tubing Specification**

Clear PVC Tubing

Tubing length 50 cms

Tubing Bore 5 cms

Suitable for connection to BOC (MDS 240) Oxygen Therapy Equipment.

2. Connector Specification

Metal tubing connector with knurled bayonet coupler for connection to BOC (MDS 240) Oxygen Therapy Equipment.

3. Tubing and Connector Assembly Specification

1 x 150 cm length 5 mm Bore Clear PVC Tubing (Plain Ends). 1 Metal Tubing Connector with knurled bayonet coupler. Complete assembly packed in clear polythene protective wrapping.

Specification 02

Oxygen Masks and Nasal Cannulae.

a. **Ventimask MK IV 28%** (see figure 2)

The mask consists of a one piece transparent flexible moulded face piece incorporating a lightweight rigid clear plastic venturi device that ensures near constant concentration.

It is fitted with an adjustable elastic head-band, and has a soft metal reinforcing strip to ensure a good fit over the bridge of the nose.

Weight (less supply tube) 66 grams

b. **Intersurgical 005 Mask** (see figure)

A flow rate of 2 litres per minute is recommended, no claim being made for the resulting oxygen concentration.

The Intersurgical 005 Mask comprises a soft moulded plastic facepiece, adjustable elastic headstrap and a metal nose clip to ensure a close fit across the nose. A swivel connector on the front of the mask, to which the oxygen tube is connected, can be rotated to suit varying positions of the connecting tube.

Weight (less supply tube) 40 grams

c. **Intersurgical 010 Mask, 28%** (see figure 1)

The mask comprises a soft moulded plastic facepiece, an adjustable elastic headstrap and a metal nose clip to ensure a close fit across the nose. A lightweight white venturi diluter fitted to the front of the mask ensures a near constant oxygen concentration. This can be rotated to suit varying positions of the connecting tube.

Weight (less supply tube) 44 grams

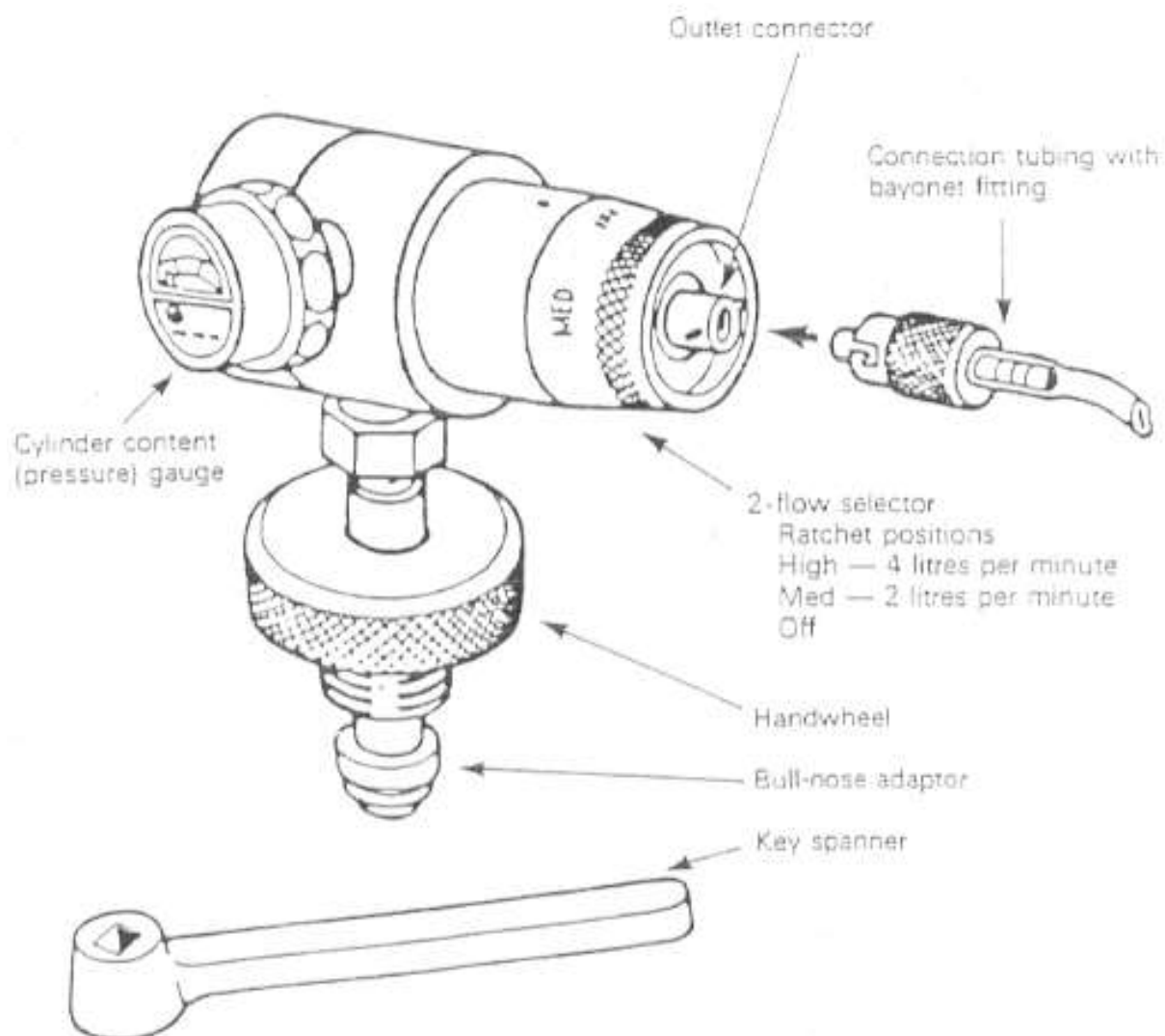
d. **Oxygen Nasal Cannula. Intersurgical 1161**

The oxygen nasal cannula consists of two soft PVC prongs about 10mm long, which project into the nostrils. The nasal prongs when positioned into the nostrils are fed through two PVC tubes of 3mm bore which are placed over the ears and tightened under the chin, by means of a toggle. The two 3mm tubes are joined to an oxygen supply tube of 5mm bore and length 2 metres.

e. **Venticaire Mask** (see figure 4)

This mask comprises a soft moulded clear plastic face-piece, with either an adjustable elastic headstrap, or earloops. A swivel connector is provided on the front of the mask, this rotates to suit varying positions of the oxygen supply tube (not included).

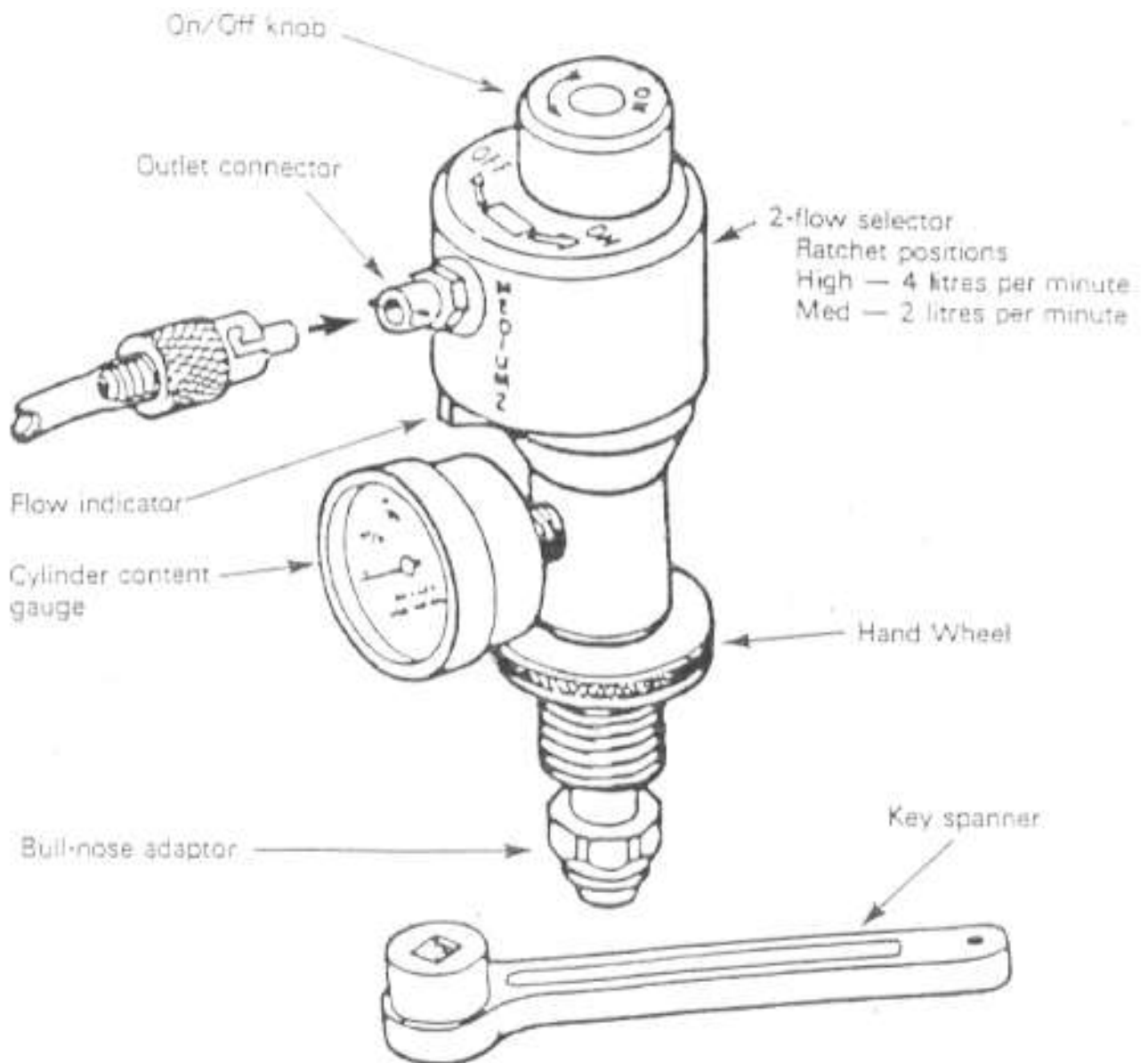
Weight 39 grams

Lightweight Single Unit Set 01A**NB: Actual shape of control bead varies with make**

The set is packed in a strong box

A constant performance mask is packed separately with the boxed parts.

Lightweight Single Unit Set 01B



The set is packed in a strong box

A constant performance mask is packed separately with the boxed parts.

Illustration Of Approved Oxygen Masks



Figure 1
Inter-Surgical Q10 Mask



Figure 2
Ventimask Mk1V, 28%



Figure 3
Inter-Surgical Q05 Mask



Figure 4
Venticare Mask

C. Oxygen Concentrator Service**1. Equipment Which May Be Prescribed**

Oxygen concentrator -

Accessories - face mask, nasal cannula, humidifier

Emergency back-up supply (comprising regulator, tubing, administration mask and cylinder of oxygen BP)

2. Claims For Payment

The contractor shall despatch prescription forms together with the appropriate claim forms to the Board not later than the seventh day of the month following that in which the supply was made.

3. Concentrator Supplier

Following a competitive tender exercise carried out by the BSO the supplier of oxygen concentrator services from 1 January 2013 will be:

BOC Ltd
Prince Regent Road
Castlereagh
Belfast
BT5 6RW

Phone : 0800 136 603

Fax: 0800 1699 989

4. Oxygen Concentrator Service

An oxygen concentrator is an electrically powered machine, which separates a high proportion of nitrogen and some other components from ambient air and thus delivers oxygen-enriched gases to patients. Oxygen concentrator services will comprise the supply, installation, maintenance, and removal when no longer required, of a concentrator and associated equipment in a patient's home on the prescription of a general practitioner. The service also includes the provision of full instructions to the patient.

- 5.** Concentrators are generally reliable and the risk of breakdown is low, but in the event of a breakdown suppliers will be responsible for responding to an emergency call-out within 10 hours. However, where a doctor considers a patient to be at risk in the event of a concentrator failure, he may prescribe an emergency back-up supply of cylinder oxygen BP that the patient could use until the concentrator is repaired. When it is considered to be necessary, such back-up equipment should normally be prescribed along with the concentrator but the general practitioner should review the need for back-up oxygen regularly and the supply should be withdrawn if no longer required. The emergency back-up supply will form part of the services to be provided by the concentrator supplier. The supplier will also be responsible for the payment of patients' electricity costs associated with concentrator usage.

- 6.** It is accepted that some doctors and most patients will have little knowledge of concentrators and how they are installed. It will, however, be important for a general practitioner to be able to reassure his patient about the advantages of a concentrator before the supplier's initial visit to install the equipment. To assist in this the supplier will be required to provide the Board with copies of a leaflet giving general information on the equipment and services to be provided. The Board should arrange for all general practitioners on the medical list to have a copy of this leaflet in advance of the commencement of the new service. On installation the supplier will provide the patient with a comprehensive booklet.

7. Liaison

Each Board already has an Authorised Officer who is the duly authorised representative for all purposes connected with the contract and will be the point of contact for all enquiries about the concentrator service. The Authorised Officer will liaise with the contractor providing concentrator services and with general practitioners.

8. Prescribing Arrangements For Oxygen Concentrators

Concentrators will normally be prescribed when a patient requires long term oxygen therapy (i.e. 15 hours or more a day over a prolonged period). However it will still be cost effective to prescribe a concentrator for patients who require or are using the equivalent of 21 cylinders or more per month (i.e. 8 hours per day). In no circumstances should a concentrator be prescribed for patients requiring less than 8 hours oxygen per day. When a general practitioner decides that a patient should receive long term oxygen therapy he should take the following action to obtain a concentrator for his patient.

- a. Using form HS21, prescribe a concentrator and any other related equipment (e.g. humidifier) specifying on the form the amount of oxygen required (i.e. hours per day) and the flow rate. If a back-up oxygen set and cylinder are required (see paragraph (g) below) these should be ordered at the same time.
- b. The GP should give the prescription form to the patient along with an explanation of what a concentrator is and advise the patient that the supplier will be in touch shortly to arrange installation. The patient should also be instructed to give the prescription form to the supplier when he visits the patient's home.
- c. The GP should then advise the concentrator supplier by telephone that he has prescribed a concentrator for the patient and ask the supplier to arrange for its installation. The supplier will acknowledge receipt of the order by sending written confirmation to the GP, the patient and the Board.
- d. If at any time during the patient's treatment the GP wishes to order additional equipment e.g.. emergency back-up set and cylinder if not previously ordered, he should follow the procedure at (a) to (c) above.
- e. If for any reason the GP wishes to alter the regimen he should inform the patient, complete the card which has been given to the patient by the concentrator supplier (entering the date, recommended flow rate, hours of use and his initials) and tell the patient to show it to the supplier when he next visits his home to service the machine.

- f. If the patient intends to move to a new address the GP should issue a new prescription for an oxygen concentrator to be provided at the new address or liaise with the patient's new GP if the patient is also changing doctor, so that he/she may issue a prescription.
- g. It is essential that the GP notifies the Board immediately the concentrator is no longer required by a particular patient.
- h. In the event of a breakdown of a concentrator, the supplier must respond to an emergency call-out by the patient within 10 hours. The Department is advised that patients who are suitable for long term oxygen therapy are generally not clinically at risk if their oxygen supply is interrupted for a few hours but for those patients considered to be at risk GPs may wish to prescribe emergency back-up cylinder oxygen in case of such a breakdown. It is expected that prescribing of emergency back-up oxygen will be limited to only a small number of patients.

9. Under-Use Of A Concentrator

Once a patient has had a concentrator installed in his home it will be important to monitor the volume of oxygen consumption. If the patient's oxygen consumption falls below the level prescribed it may not be cost-effective for him to continue to have a concentrator. Under the terms of the contract, the supplier is required to submit to the Board a statement accompanying claims for reimbursement of patients' electricity costs, setting out in respect of each patient a comparison between the patient's average daily usage of the concentrator over the period of the claim and the daily usage as prescribed by the general practitioner. In those cases where it appears that there may have been a significant under-use of the concentrator the Board should bring the matter to the attention of its Medical Adviser for General Practice/GP Adviser so that he/she may discuss the matter with the prescriber.

In those cases where the average daily usage has fallen below the specified level at which a concentrator should be prescribed (see para 8) prescribers should be asked specifically to confirm that the patient has been counselled and that usage of the concentrator will increase. Where no such confirmation is obtained Boards should arrange for the concentrator to be withdrawn and for the doctor to prescribe cylinder oxygen for the patient. Similar action should be taken if, after receiving a prescriber's confirmation of a continuing need for a concentrator at the first enquiry, a further statement from the supplier indicates that usage is still below the specified level.

10. Transfer Of Existing Patients From Cylinders To Concentrators

Some patients who had had cylinder oxygen prescribed for their treatment may reach a point where their oxygen requirements are such that supply would be more economical by concentrator. The Board will identify such patients using the specified level at paragraph 8 and will contact the patient's general practitioner to consider whether the prescription of a concentrator would be a more appropriate form of providing oxygen therapy. If so, the GP should follow the procedure at paragraph 8 (a-h). In such cases a close liaison between the doctor, the concentrator supplier and the patient's existing cylinder supplier will be necessary to ensure that the patient receives sufficient cylinder oxygen to meet his needs until but only until the concentrator is installed.

The Board should ensure that oxygen cylinder contractors are aware of concentrator installations and that they withdraw their equipment and any cylinders (empty or full) from the patient's home as soon as possible after the concentrator has been installed.

11. Withdrawal Of A Concentrator And/Or Associated Equipment

Where a GP advises the Board that a concentrator and/or emergency supply of cylinder oxygen is no longer required for a particular patient the Board should immediately arrange with the supplier for removal of the equipment from the patient's home. At the same time the Board should note their records with the details and date of removal notification.

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