Guidance for the Prescribing and Administration of Oxygen in Adult Inpatients

PROV 64
January 2011
### Document Management

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<th><strong>Title of document</strong></th>
<th>Guidance for the Prescribing and Administration of Oxygen in Adult Inpatients</th>
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<tr>
<td><strong>Type of document</strong></td>
<td>Guidance</td>
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<tr>
<td><strong>Description</strong></td>
<td>Provides legal and best practice guidance on the use of Oxygen for patient's identified as requiring it.</td>
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<tr>
<td><strong>Target audience</strong></td>
<td>All staff working on in patient ward areas</td>
</tr>
<tr>
<td><strong>Author</strong></td>
<td>Head of Governance/ Senior Pharmacist</td>
</tr>
<tr>
<td><strong>Department</strong></td>
<td>Professional Development and Practice</td>
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<tr>
<td><strong>Directorate</strong></td>
<td>Clinical  Governance</td>
</tr>
<tr>
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<tr>
<td><strong>Contact details</strong></td>
<td>Name: Senior Pharmacist</td>
</tr>
<tr>
<td></td>
<td>Address: York House, Wellingborough</td>
</tr>
<tr>
<td></td>
<td>Tel: 01933 235861</td>
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1.0 Introduction

The administration of supplemental oxygen is an essential element of appropriate management for a wide range of clinical conditions; however oxygen is a drug and therefore requires prescribing in all but emergency situations. Failure to administer oxygen appropriately can result in serious harm to the patient. The safe implementation of oxygen therapy with appropriate monitoring is an integral component of the Healthcare Professional's role.

2.0 Aim

The aim of this guidance is to ensure that:

- All patients who require supplementary oxygen therapy receive therapy that is appropriate to their clinical condition and in line with national guidance (BTS Guideline; Thorax, 2008).
- Oxygen will be prescribed according to a target saturation range. The system of prescribing target saturation aims to achieve a specified outcome, rather than specifying the oxygen delivery method alone.
- Those who administer oxygen therapy will monitor the patient and keep within the target saturation range.

3.0 Prescribing, administering and monitoring oxygen

3.1 Identifying appropriate target saturations

Guidance on identifying appropriate saturations for patients is provided for the medical staff and other prescribers in Appendix 1. In summary oxygen should be prescribed to achieve a target saturation of 94-98% for most acutely unwell patients or 88-92% for those at risk of hypercapnic respiratory failure.

3.2 Prescribing oxygen on the drug chart

Oxygen should be prescribed on the medication administration chart, using the designated area where available and the appropriate target saturation should be indicated/ circled on the chart. If target saturations are not indicated this should be clearly recorded and documented by the prescriber.

3.3 Administering oxygen

Once the target saturation has been identified and prescribed, guidance regarding the most appropriate delivery system to reach and maintain the prescribed saturation is provided for those administering oxygen in Appendix (b), (c).

Oxygen can be administered by any qualified doctor, registered nurse or physiotherapist.

3.4 Monitoring and recording oxygen

The patient's oxygen saturation and oxygen delivery system should be recorded on the bedside observation chart alongside other relevant physiological variables. The type of oxygen delivery device should also be recorded on the observation chart. Patients should be monitored as follows:
1. Visual observations of skin colour for central cyanosis
2. Respiratory rate
3. Any sign of respiratory distress should be reported immediately
4. If the arterial oxygen saturation is above or below the target saturation the observer must inform the nurse or doctor caring for the patient
5. Check the patient’s mouth, nose and behind the ears
6. Record all observations on appropriate chart:
   - 4hrly if on continuous oxygen
   - 8 hrly if on intermittent oxygen

In order to accurately monitor the patient for signs of improvement or deterioration

To identify signs of infection and pressure sores as soon as possible

To ensure accurate record keeping

All patients on oxygen therapy should have regular pulse oximetry measurements. The frequency of oximetry measurements will depend on the condition being treated and the stability of the patient. Critically ill patients should have their oxygen saturations monitored continuously and recorded every few minutes whereas patients with mild breathlessness due to a stable condition will need less frequent monitoring.

Oxygen therapy should be increased if the saturation is below the desired range and decreased if the saturation is above the desired range (and eventually discontinued as the patient recovers).

Any sudden fall in oxygen saturation should lead to clinical evaluation of the patient and in most cases, consideration given to transfer to acute care.

Patients should be monitored accurately for signs of improvement or deterioration. Nurses should also monitor skin colour for peripheral cyanosis and respiratory rate. Oxygen saturations of less than 90% in patients not at risk of hypercapnoeic respiratory failure, with or without oxygen, noisy or laboured breathing or respiratory rate of less than 8 or more than 25 should be reported immediately to the medical staff where available or transferred to acute care.

Patients may receive oxygen as part of palliative care or patients on the end of life care pathway in which case, the prescriber should indicate ‘target saturations not indicated’ on the drug chart.

3.5 Emergency situations

In the emergency situation an oxygen prescription is not required. Oxygen should be given to the patient immediately without a formal prescription or drug order but documented later in the patient’s record.
All peri-arrest and critically ill patients should be given 100% oxygen (15 l/m reservoir mask) whilst awaiting immediate medical review. Patients with COPD and other risk factors for hypercapnia who develop critical illness should have the same initial target saturations as other critically ill patients pending the consideration of transfer to acute care.

All patients who have had a cardiac or respiratory arrest should have 100% Oxygen provided along with basic life support.

A subsequent written record must be made of what oxygen therapy has been given to every patient alongside the recording of all other emergency treatment.

Any qualified nurse/health professional can commence oxygen therapy in an emergency situation.

5.0 Indications

The rationale for oxygen therapy is prevention of cellular hypoxia, caused by hypoxaemia (low PaO2), and thus prevention of potentially irreversible damage to vital organs.

Therefore the most common reasons for oxygen therapy to be initiated are:

- **Acute hypoxaemia** (for example pneumonia, shock, asthma, heart failure, pulmonary embolus)
- **COPD** - patient’s who have been assessed as requiring either long term or short term oxygen therapy. Short term oxygen therapy should be continued only if the patient’s breathlessness improves. Inappropriate oxygen therapy in patients with COPD may cause respiratory depression.
- **Ischaemia** (for example myocardial infarction, but only if associated with hypoxaemia (abnormally high levels may be harmful to patients with ischaemic heart disease and stroke).
- **Abnormalities in quality or type of haemoglobin** (for example acute GI blood loss or carbon monoxide poisoning).

Other indications include:

- **Pneumothorax** – Oxygen may increase the rate of resolution of pneumothorax in patients for whom a chest drain is not indicated.
- **Post operative state** (general anaesthesia can lead to decrease in functional residual capacity with in the lungs (especially following thoracic or abdominal surgery) resulting in hypoxaemia (Ferguson 1999). There is some evidence to suggest a decreased incidence of post operative wound infections with short-term oxygen therapy following bowel surgery.

6.0 Contra-indications

There are no absolute contraindications to oxygen therapy if indications are judged to be present. The goal of oxygen therapy is to achieve adequate tissue oxygenation using the lowest possible oxygen concentration for the shortest duration.

7.0 Cautions
7.1. **Oxygen administration and carbon dioxide retention**

In patients with chronic carbon dioxide retention, oxygen administration may cause further increases in carbon dioxide and respiratory acidosis. This may occur in patients with COPD, neuromuscular disorders, morbid obesity or musculoskeletal disorders. There are several factors which lead to the rise in CO$_2$ with oxygen therapy in patients with hypercapnic respiratory failure and details are in the BTS guideline.

7.2. **Other precautions/ Hazards/ Complications of oxygen therapy**

- Drying of nasal and pharyngeal mucosa
- Oxygen toxicity
- Absorption atelectasis
- Skin irritation
- Fire hazard
- Potentially inadequate flow resulting in lower FiO$_2$ than intended due to high inspiratory demand or inappropriate oxygen delivery device or equipment faults

8.0 **Transfer and transportation of patients receiving oxygen**

Patients who are transferred from one area to another must have clear documentation of their ongoing oxygen requirements and documentation of their oxygen saturation. If a patient transfers from an area not utilising the target saturation system (see specialist areas above) their oxygen should be administered as per the transferring areas prescription until the patient is reviewed and transferred over to the target saturation scheme, which should occur as soon as possible.

Patients requiring oxygen therapy whilst being transferred from one area to another should be accompanied by a trained member of the nursing staff wherever possible. If this does not occur, clear instructions must be provided for personnel involved in the transfer of the patient, which must include delivery device and flow rate.

**Transportation on a home visit**

It is safe to carry medical gas cylinders in vehicles so long as care is taken. Where staff are transporting oxygen on Trust business approved signage indicating "oxygen on board" must be displayed at all times.

9.0 **Nebulised therapy and oxygen**

When nebulised therapy is administered to patients at risk of hypercapnic respiratory failure, it should be driven by compressed air. If necessary, supplementary oxygen should be given concurrently by nasal prongs at 1-4 litres per minute to maintain an oxygen saturation of 88-92% or other specified target range.

10.0 **Normal Oxygen saturations**

- In adults less than 70 years of age at rest 96% - 98% when awake.
- Aged 70 and above at rest at greater than 94% when awake.
12.0 Summary Oxygen Administration protocol (and weaning protocol)

<table>
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<tr>
<th>ACTION</th>
<th>RATIONALE</th>
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<tbody>
<tr>
<td>All patients requiring oxygen therapy will have a prescription for</td>
<td>Oxygen should be regarded as a drug and should be prescribed. BTS National guidelines (2008). British National Formulary (2008).</td>
</tr>
<tr>
<td>oxygen therapy recorded on the patients drug prescription chart. N.B</td>
<td></td>
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<tr>
<td>exceptions- see emergency situations</td>
<td></td>
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<tr>
<td>The prescription will incorporate a target saturation that will be</td>
<td>Certain groups of patients require different target ranges for their oxygen saturation, see Appendix (a).</td>
</tr>
<tr>
<td>identified by the clinician prescribing the oxygen in accordance with</td>
<td>Certain groups of patients are at risk of hyperoxaemia, particularly patients with COPD.</td>
</tr>
<tr>
<td>the Trust's oxygen guideline</td>
<td></td>
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<tr>
<td>The prescription will incorporate an initial starting dose (i.e.</td>
<td>To provide the nurses with guidance for the appropriate starting point for the oxygen delivery system and flow rate</td>
</tr>
<tr>
<td>delivery device and flow rate)</td>
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<tr>
<td>The drug chart should be signed at every drug round</td>
<td>To ensure that the patient is receiving oxygen if prescribed and to consider weaning and discontinuation</td>
</tr>
<tr>
<td>Once oxygen is in situ the nurse will monitor observations in line</td>
<td>To identify if oxygen therapy is maintaining the target saturation or if an increase or decrease in oxygen therapy is required</td>
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<tr>
<td>with this guidance. All patients should have their oxygen saturation</td>
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<td>observed for at least five minutes after starting oxygen therapy. If</td>
<td></td>
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<tr>
<td>a patient is receiving intermittent therapy they may be monitored</td>
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<td>at least 8 hourly.</td>
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<tr>
<td>The oxygen delivery device and oxygen flow rate should be recorded</td>
<td>To provide an accurate record and allow trends in oxygen therapy and saturation levels to be identified.</td>
</tr>
<tr>
<td>alongside the oxygen saturation on the observation chart.</td>
<td></td>
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<tr>
<td>Oxygen saturations must always be interpreted alongside the patient's</td>
<td>To identify early signs of clinical deterioration, e.g. elevated respiratory rate</td>
</tr>
<tr>
<td>clinical status incorporating the early warning score.</td>
<td></td>
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<tr>
<td>If the patient falls outside of the target saturation range, the</td>
<td>To maintain the saturation in the desired range.</td>
</tr>
<tr>
<td>oxygen therapy will be adjusted accordingly</td>
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<tr>
<td>The saturation should be monitored continuously for at least 5</td>
<td></td>
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<tr>
<td>minutes after any increase or decrease in oxygen dose to ensure that</td>
<td></td>
</tr>
<tr>
<td>the patient achieves the desired saturation range.</td>
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<tr>
<td>**Saturation higher than target specified or &gt;98% for an extended</td>
<td></td>
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<tr>
<td>period of time.</td>
<td></td>
</tr>
<tr>
<td>• Step down oxygen therapy as per guidance for delivery</td>
<td>The patient will require weaning down from current oxygen delivery system. See Appendix (c)</td>
</tr>
<tr>
<td>• Consider discontinuation of oxygen</td>
<td>The patients clinical condition may have</td>
</tr>
<tr>
<td>therapy</td>
<td>improved negating the need for supplementary oxygen</td>
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<td>---</td>
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<tr>
<td><strong>Saturation lower than target specified</strong></td>
<td></td>
</tr>
<tr>
<td>• Check all elements of oxygen delivery system for faults or errors.</td>
<td>In most instances a fall in oxygen saturation is due to deterioration of the patient however equipment faults should be checked for.</td>
</tr>
<tr>
<td>• Step up oxygen therapy as per protocols in appendix (a). Any sudden fall in oxygen saturation should lead to clinical evaluation</td>
<td>To assess the patients response to oxygen increase.</td>
</tr>
<tr>
<td>• Monitor Early Warning Score and respiratory rate for further clinical signs of deterioration</td>
<td>Patient safety</td>
</tr>
<tr>
<td><strong>Saturation within target specified</strong></td>
<td></td>
</tr>
<tr>
<td>• Continue with oxygen therapy, and monitor patient to identify appropriate time for stepping down therapy, once clinical condition allows</td>
<td></td>
</tr>
<tr>
<td>• A change in delivery device (without an increase in O2 therapy) does not require review by the medical team.</td>
<td>(The change may be made in stable patients due to patient preference or comfort).</td>
</tr>
<tr>
<td><strong>Oxygen delivery methods</strong></td>
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<tr>
<td>The Trusts recommended delivery devices will be utilised to ensure a standardised approach to oxygen delivery, see Appendix (c)</td>
<td>wide variations in delivery devices across clinical areas, potentially increasing the risk of adverse incidents</td>
</tr>
</tbody>
</table>

13. **Humidification**
Humidification, where available, may be required for some patient groups, especially “neck-breathing patients” and those who have difficulty in clearing airway secretions or mucus. See Appendix (d).

14. **Implementation**
All nurses, nursing assistants and other healthcare professionals involved in prescribing or administrating oxygen should receive training on the oxygen guidance. A record of all those who have been taught will be kept.

All doctors should be taught about the oxygen guidance. Teaching aids are available on the BTS website. Audits will be performed in all clinical areas. Audit proformas are available on the BTS website. The hospital will participate in the national audits organised by the BTS.

16.0 **Health and Safety issues**
• Inform patients and carers about the combustibility of oxygen. Oxygen supports combustion; there is always a danger of fire when oxygen is being used.

• Oxygen should be stored in an area designated as no smoking.

• Electrical appliances should be kept at least five feet away from the source of oxygen. Oxygen can be potentially dangerous when in contact with sources of ignition and flammable material.

• Avoid grease or oil coming into contact with apparatus.

• All oxygen cylinders and their trolleys should be secured to a wall bracket or other static/stable structure to prevent them from toppling.

• Where patients are mobile and need a regular medical gas supply from a cylinder on a trolley, consideration should be given to providing them with a smaller cylinder, e.g. F-size.

• Staff should be trained / reminded how to safely transport and secure medical gas cylinders and their trolleys.

• Store unused cylinders in a dry well ventilated place

• Guidance on the duration of oxygen therapy delivered by various sizes of Oxygen cylinders is provided in Appendix (e)

17.0 References

• Central alerting System: Unsecured Medical Gas Cylinders EFA/2010/008

• NPSA Alert: safer use of oxygen in hospitals: RRR2009/006


• Summary guideline for prescribing oxygen emergency oxygen in hospital.  Available on BTS website: www.brit-thoracic.org.uk/emergencyoxygen/

• Summary of prescription, administration and discontinuation of oxygen therapy.  Available on BTS website: www.brit-thoracic.org.uk/emergencyoxygen/
APPENDICES

Appendix (a)

Critical illness requiring high levels of supplemental oxygen

- Initial oxygen therapy is a reservoir mask at 15l/min
- Once stable reduce oxygen dose and aim for target saturation of 94-98%
- If oximetry is available continue to use reservoir mask until definitive treatment available
- Patients with COPD and other risk factors for hypercapnia who develop critical illness should have the same initial target saturations as other critically ill patients.

Serious illness requiring moderate levels of supplemental oxygen if the patient is hypoxaemic

- Initial oxygen therapy is nasal cannula at 2-6 l/min (preferably) or simple face mask at 5-10 l/min unless otherwise stated
- For patients not at risk of hypercapnic respiratory failure who have saturation ≤ 85% treatment should be commenced with a reservoir mask at 10-15 l/min
- The recommended initial oxygen saturation target range is 94-98%
- If oximetry is not available continue with oxygen as above until it is available
- Change to reservoir mask if the desired saturation range cannot be maintained with nasal cannula or simple face mask
- If patient has co-existing COPD or other risk factors for hypercapnic respiratory failure aim at saturation of 88-92%.

COPD and other conditions requiring controlled or low dose oxygen therapy

- Use a 28% Venturi mask at 4 l/min and aim for oxygen saturation of 88-92%
- If saturation remains below 88% change to nasal cannula at 2-6 l/min or a simple mask at 5 l/min

ACTION          RATIONALE

1. Ensure patency of airway          To promote effective oxygenation
2. The type of delivery system used will depend on the needs and comfort of the patient. It is the nurses role to assess the patient and use the prescribed system.          To provide accurate oxygen delivery to the patient. Most stable patients prefer nasal cannulae to masks.
3. Where possible ensure oxygen is prescribed on prescription chart. The exception to this action would be during an emergency situation where the resuscitation guideline should be
followed.

4. Ensure that the oxygen dose is clearly indicated. If nasal cannula or reservoir masks are being used check that the flow rate is clearly indicated.

5. Inform patient and or relative/ carer of the combustibility of oxygen Oxygen supports combustion therefore there is always a danger of fire when oxygen is being used.

6. Show and explain the oxygen delivery system to the patient. To obtain consent and cooperation.

7. Assemble the oxygen delivery system Carefully.

8. Attach oxygen delivery system to oxygen source. To ensure oxygen supply is ready

9. Attach oxygen delivery system to patient according to manufacturers instructions. For oxygen to be administered to patient.

10. Turn on oxygen flow in accordance with prescription and manufacturers instruction. To administer correct % of oxygen.

11. Ensure patient has either a drink or a mouthwash within reach. To prevent drying or the oral mucosa.

12. Clean oxygen mask as required with general purpose detergent and dry thoroughly needed. Discard systems after use. To minimise risk of infection (Single patient device)
Appendix (c)

EQUIPMENT USED IN THE DELIVERY OF OXYGEN  (Choose the appropriate delivery device)

1. Oxygen source  (piped or cylinder)
2. Flow meter
3. Saturation monitor
4. Oxygen Delivery system - (see appendix j for advice on use of each device);

A) Nasal cannula

<table>
<thead>
<tr>
<th>DEVICE</th>
<th>DESCRIPTION</th>
<th>PURPOSE</th>
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</thead>
<tbody>
<tr>
<td>Nasal Cannulae</td>
<td>Nasal cannulae consist of pair of tubes about 2cm long, each projecting into the nostril and stemming from a tube which passes over the ears and which is thus self-retaining.</td>
<td>Cannulae are preferred to masks by most patients. They have the advantage of not interfering with feeding and are not as inconvenient as masks during coughing and sneezing. It is not advisable to assume what percent oxygen (FI02) the patient is receiving. This is not important if the patient is in the correct target range.</td>
</tr>
<tr>
<td>Uncontrolled oxygen therapy</td>
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</table>

**ACTION**

1. (When using nasal cannula).
   Position the tips of the cannula in the patient’s nose so that the tips do not extend more than 1.5cm into the nose.
   Overlong tubing is uncomfortable, which may make the patient reject the procedure. Sore nasal mucosa can result from pressure or friction of tubing that is too long.

2. Place tubing over the ears and under the chin as shown above. Educate patient re prevention of pressure areas on the back of the ear.
   To allow optimum comfort for the patient. To prevent pressure sores.

3. Adjust flow rate, usually 2-4 l/min but may vary from 1-6 l/min in some circumstances.
   Set the flow rate to achieve the desired target oxygen saturation.
### Fixed performance mask (Venturi mask and valve)

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<tr>
<th>DEVICE</th>
<th>DESCRIPTION</th>
<th>PURPOSE</th>
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<tbody>
<tr>
<td><strong>Venturi mask</strong></td>
<td>A mask incorporating a device to enable a fixed concentration of oxygen to be delivered independent of patient factors or fit to the face or flow rate. Oxygen is forced out through a small hole causing a Venturi effect which enables air to mix with oxygen.</td>
<td>This is a high performance oxygen mask designed to deliver a specified oxygen concentration regardless of breathing rate or tidal volume. Venturi devices come in different colours for %</td>
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<tr>
<td></td>
<td></td>
<td>Blue = 24%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>White = 28%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yellow = 35%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Red = 40%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green = 60%</td>
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<tr>
<td><strong>Controlled oxygen therapy</strong></td>
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### ACTION

1. (When using Venturi mask) Connect the mask to the appropriate Venturi barrel attached firmly into the mask inlet.
   - **RATIONALE**: To ensure that patient receives the correct concentration of oxygen.

2. Fasten oxygen tubing securely.
   - **RATIONALE**: Correctly secured tubing is comfortable and prevents displacement of mask/cannulae.

3. Assess the patient’s condition and functioning of equipment at regular intervals according to care plan.
   - **RATIONALE**: To ensure patient’s safety and that oxygen is being administered as prescribed.

4. Adjust flow rate. The minimum flow rate is indicated on the mask or packet. The flow should be doubled if the patient has a respiratory rate above 30 per minute.
   - **RATIONALE**: Higher flows are required for patients with rapid respiration and high inspiratory flow rates. This does not affect the concentration of oxygen but allows the gas flow rate to match the patient’s breathing pattern.
## Simple face mask (variable flow)

<table>
<thead>
<tr>
<th>DEVICE</th>
<th>DESCRIPTION</th>
<th>PURPOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple face mask</td>
<td>Mask has a soft plastic face piece, vent holes are provided to allow air to escape. Maximum 50%-60% at 15 ltrs/minute flow.</td>
<td>This is a variable performance device. The oxygen concentration delivered will be influenced by:</td>
</tr>
<tr>
<td>Uncontrolled Oxygen therapy</td>
<td></td>
<td>a. the oxygen flow rate (litres per minute) used, leakage between the mask and face;</td>
</tr>
<tr>
<td>Nasal cannulae should be used for most patients who require medium dose oxygen but a simple face mask may be used due to patient preference or if the nose is blocked</td>
<td>b. the patient’s tidal volume and breathing rate.</td>
<td></td>
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</tbody>
</table>

### ACTION

(If using simple face mask) Gently place mask over the patient’s face, position the strap behind the head or the loops over the ears then carefully pull both ends through the front of the mask until secure.

Check that strap is not across ears and if necessary insert padding between the strap and head.

Adjust the oxygen flow rate. Must never be below 5L/min

### RATIONALE

Ensure a comfortable fit and delivery of prescribed oxygen is maintained.

To prevent irritation.

Flows below 5L/min do not give enough oxygen and may cause increased resistance to breathing and may also cause CO2 re-breathing due to the small mask size.

NOT to be used for CO₂ retaining patients.
### D) Reservoir mask (non re-breathe mask)

<table>
<thead>
<tr>
<th>DEVICE</th>
<th>DESCRIPTION</th>
<th>PURPOSE</th>
</tr>
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</table>
| Reservoir Mask  
(Non-rebreathe Mask) | Mask has a soft plastic face piece with flap-valve exhalation ports which may be removed for emergency air-intake. There is also a one-way valve between the face mask and reservoir bag. | In non-re-breathing systems the oxygen may be stored in the reservoir bag during exhalation by means of a one-way valve. High concentrations of oxygen 80-90% can be achieved at relatively low flow rates. **NOT to be used for CO2 retaining patients except in life-threatening emergencies such as cardiac arrest or major trauma.** |

**ACTION**

1. (Non Rebreathe Reservoir Mask)  
Ensure the reservoir bag is inflated before placing mask on patient, this can be maintained by using 10-15 litres of oxygen per min.  

2. Adjust the oxygen flow to the prescribed rate.  
Inadequate flow rates may result in administration of inadequate oxygen concentration to the patient.

In disposable reservoir, oxygen flows directly into the mask during inspiration and into the reservoir bag during exhalation. All exhaled air is vented through a port in the mask and a one-way valve between the bag and mask, which prevents re-breathing.

### E) Tracheostomy mask for patients with tracheostomy or laryngectomy

<table>
<thead>
<tr>
<th>DEVICE</th>
<th>DESCRIPTION</th>
<th>PURPOSE</th>
</tr>
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</table>
| Tracheostomy mask  
Variable Percentage  
(Delivers unpredictable concentrations that vary with flow rate) | Mask designed for “neck breathing patients”. Fits comfortably over tracheostomy or tracheotomy. Exhalation port on front of mask. | This is a variable performance device for patients with tracheostomy or tracheotomy. The oxygen concentration delivered will be influenced by:  
 a. the oxygen flow rate (litres per minute) used.  
 b. the patient’s tidal volume and breathing rate.  

**Uncontrolled Oxygen therapy**  
Use cautiously at low flow rates in CO2 retaining patients as there may be no alternative.
ACTION RATIONALE
Gently place mask over the patient’s airway, position the strap behind the head then carefully pull both ends through the front of the mask until secure. Ensure a comfortable fit and delivery of prescribed oxygen is maintained.

F) Oxygen Flow Meter

DEVICE DESCRIPTION

Device to allow the patient to receive an accurate flow of oxygen, usually between 2 and 15 litres per minute.

May be wall-mounted or on a cylinder.

Take special care if your Trust uses twin oxygen outlets or if there are air outlets which may be mistaken for oxygen outlets.

Purpose
To ensure that the patient receives the correct amount of oxygen.

Correct Setting for 2 l/min

Oxygen flow meter
Delivers oxygen to the patient.

ACTION RATIONALE
Attach the oxygen tubing to the nozzle on the flow meter. To ensure that the patient receives the correct amount of oxygen.

Turn the finger-valve to obtain the desired flow rate. The CENTRE of the ball shows the correct flow rate. The diagrams show the correct setting to deliver 2 l/min.
Appendix (d)  HUMIDIFICATION

This should only be used if specifically requested by the doctor or physiotherapist in the following circumstances.

1. If the flow rate exceeds 4 litres per minute for several days
2. Tracheotomy or tracheostomy patients ("neck-breathing patients")
3. Cystic Fibrosis patients
4. Bronchiectasis patients
5. Patients with a chest infection retaining secretions

Can be given by warm or cold humidifier systems
(warm humidifier systems are mainly used in critical care areas)
**Appendix (e)  Guidance on Duration of Oxygen Cylinders**

<table>
<thead>
<tr>
<th>Cylinder Size</th>
<th>Capacity when full (litres)</th>
<th>Flow Rate</th>
<th>Approximate length of treatment available (hrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PD</td>
<td>300</td>
<td>2L/min</td>
<td>2 and a half hrs</td>
</tr>
<tr>
<td>PD</td>
<td>300</td>
<td>4L/min</td>
<td>One and a quarter hrs</td>
</tr>
<tr>
<td>F</td>
<td>1360</td>
<td>2L/min</td>
<td>11 hours</td>
</tr>
<tr>
<td>F</td>
<td>1360</td>
<td>4L/min</td>
<td>Five and a half hours</td>
</tr>
<tr>
<td>G</td>
<td>3400</td>
<td>2L/min</td>
<td>28 hours</td>
</tr>
<tr>
<td>G</td>
<td>3400</td>
<td>4L/min</td>
<td>14 hours</td>
</tr>
</tbody>
</table>

Produced by Janice Jones, Senior Pharmacist, NHS Northamptonshire Provider Services
Policy Impact Assessment – Screening Tool

**Name of Directorate**: Professional Development and Practice

**Date of Assessment**: 28/2/11

**Policy being assessed**: Guidance for the Prescribing and Administration of Oxygen in Adult Inpatients

**Assessment Carried out by**: Janice Jones

<table>
<thead>
<tr>
<th>Policy Title</th>
<th>Who is affected</th>
<th>Statutory requirements</th>
<th>Full Assessment Needed</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guidance for the Prescribing and Administration of Oxygen in Adult Inpatients</td>
<td>Doctors, Nursing staff, Allied Health Care Professionals and Patients within the inpatient areas of NHS Northamptonshire Provider Services</td>
<td>Provides guidance for best practice, and compliance with NPSA alert for Oxygen therapy</td>
<td>No</td>
<td>Low</td>
</tr>
</tbody>
</table>