Prescribing and Review Process for Home Oxygen for Adults (By General Practitioners and review by appropriately trained health professionals)

Background

This advice applies to those rural and remote General Practitioners who are required to prescribe home oxygen to adults in the absence of a specialist Respiratory Physician opinion. Many Respiratory Physicians are happy to give advice over the phone and even quite remote parts of the State have at least some testing facilities, such as blood gas machines in Emergency Departments of local hospitals. Most GPs will already be familiar with all the contents of this advice.

Some metropolitan-based GPs also prescribe home oxygen in the hospice or palliative care setting and the same advice applies.

It also applies to those appropriately trained health professionals who undertake reviews of people prescribed home oxygen in consultation with a medical practitioner.

The provision of domiciliary oxygen is expensive and clear guidelines are therefore provided. In the absence of hypoxaemia, oxygen therapy is unlikely to improve patient outcomes. Furthermore, breathlessness is commonly not due to lack of oxygen per se.

The method of supply is by oxygen concentrators, which are floor standing, electrically driven devices, most of which provide a flow up to five litres per minute. Government provides financial assistance for electricity bills. Access this via this link: http://www.finance.wa.gov.au/cms/TwoColumns_Content.aspx?Pageid=17638&id=1280. Backup during power failure and for ambulatory supply is via cylinders.

Indications:

1. Long term continuous oxygen therapy (at least sixteen hours per day) may be considered for patients with stable chronic lung disease (particularly COPD) who, when breathing air at rest and awake have a PaO2 consistently <55mmHg.

Domiciliary oxygen is contraindicated for patients who continue to smoke cigarettes and because quitting can lead to substantial improvement in gas exchange assessment should be made after the patient has stopped smoking for at least one month.
In similar patients,

- polycythaemia (a haemoglobin $>$170gms per litre, PCV $>$55%), or
- clinical, electrocardiographic and particularly echo-cardiographic evidence of cor pulmonale (dilated right ventricle), or
- past episodes of right sided heart failure,

are consistent with the systemic effects of chronic hypoxaemia. Under such circumstances oxygen may be prescribed if the PaO2 is $<$60mmHg.

2. Oxygen may be provided in patients who **de-saturate on exertion** (exercise oximetry), if it can be demonstrated that:
   
   a. exertion leads to a fall in arterial oxygen saturation below 85% and
   b. oxygen subsequently improves exercise capacity, during the exercise oximetry test.

   **This 2\textsuperscript{nd} component is most important. Without both components the addition of supplemental oxygen will be unlikely to be of benefit. Please note that this is not a “6 minute walk test”**.

3. **Other indications** might include intractable angina or intractable recurrent pulmonary oedema, for which nothing more can be done; asthma, for someone in remote regions in order to travel to help; the grey areas of palliative care and in conjunction with a Respiratory Sleep Physician for nocturnal treatment. This list is not a comprehensive list; for detailed information see website below.

**Contra-indications:**

Domiciliary oxygen is not indicated in patients:

- even with advanced lung disease, whose main complaint is breathlessness, but who maintain a PaO2 $>$60mmHg (SaO2 $>$90%) and who do not show the secondary effects of chronic hypoxaemia.
- who still smoke cigarettes,
- who have not had their present therapy maximised, or
- who are not sufficiently motivated or provided for to undertake the discipline involved in the application of oxygen therapy.

**Improved Quality in Prescribing Practice**

It will become apparent that there are 3 “forcing functions” in this process.

**First**, the “science” is more likely to be correct if the guidelines are followed and, importantly, the providers of the oxygen will be empowered to decline delivery where the science is incorrect.
Second, the oxygen provision will be withdrawn unless there is a 6-8 week review by the original prescriber, to confirm ongoing need, when the original prescription was in an acute setting.

Third, the prescription must be signed by a Physician (or an Advanced Trainee in Respiratory Medicine), or an appropriately credentialed General Practitioner, either in remote and rural WA or in Palliative Care.

**Diagnostic Requirements at first prescription and reviews:**

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<th>Diagnostic Requirements</th>
<th>Health Professional Review (6-8 weeks &amp; annual)</th>
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<tr>
<td><strong>First prescription</strong></td>
<td>All requirements as set out on the prescription form must be completed</td>
<td>Not applicable</td>
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<td><strong>(Medical Officer/Doctor only)</strong></td>
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<td><strong>Review at 6-8 weeks</strong></td>
<td>May require ABGs on room air if the patient is likely to have improved, such that the oxygen is no longer indicated. Otherwise, saturation measurements may suffice. Venous bicarbonate (to assess CO2 retention), as well as history of morning headaches or findings of warm peripheries and bounding pulses might indicate CO2 retention and require ABGs. Evidence for cor pulmonale should be sought on physical examination. History of perceived breathlessness on various activities, with and without oxygen may point to continuing use on exertion or not.</td>
<td>If any of the following are present then Doctor must review patient as ABGs may be required. *History of morning headaches or confusion. *Examination findings of warm peripheries &amp; bounding pulses. *Venous HCO3 &gt;30mmHg. *O2 Sats &lt;88% on oxygen. *New onset of peripheral oedema. If no changes in condition or ABG not required, prescription is confirmed by health professional and either emailed of faxed to prescribing doctor for ratification.</td>
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<td><strong>Annual Review</strong></td>
<td>ABG may not be required Reasonable assumptions about CO2 levels can be got from the venous bicarbonate level. Other history and examination as above.</td>
<td>If no changes in condition or ABG not required, prescription form is completed by health professional and either emailed or faxed to prescribing doctor for prescription re-issue.</td>
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Further information

For further information and a full description of indications and contraindications: Go to the TSANZ website www.thoracic.org.au or alternatively for clinical support contact the Respiratory Physician at your nearest hospital.

For patients requiring oxygen in residential aged care facilities, the cost is borne by the Commonwealth Department of Health and Ageing. A sample proforma letter is provided with the Prescription form.

Peter A Kendall
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Proposed Circulation

- WA Rural/Remote Divisions of General Practice
- TSANZ WA members
- Hospice services (Silver Chain, Murdoch)
- Palliative Care Physicians (WA)
- Directors of Clinical Services, Area Health Services, for Medical Registrars and inclusion in RMO Handbooks