

Guideline for the Prescription, Administration and Monitoring of Oxygen Therapy in the Hospice Setting

Version History

Version	Date	Summary of Change/Process
0.1	April 2011	Document draft circulated for initial consultation to SPAGG group
0.2	May 2011	Comments received from Dr Thickett, and SPAGG group. Minor changes made.
1.0	June 2011	Endorsed by the Guidelines Sub Group

Date Approved by Network Governance	June 2011
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Date for Review	June 2014
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1. Scope of the Guideline

This guidance has been produced to support the use of oxygen in the hospice environment:

- Safe prescription of oxygen.
- Administration of oxygen.
- Monitoring of oxygen therapy in patients at risk of hypercapnia in facilities where full monitoring may not be available.

2. Guideline Background

- 2.1 In 2008, the British Thoracic Society produced guidelines for the emergency use of oxygen in the hospital setting. In 2009, the National Patient Safety Agency produced a rapid response article suggesting that all settings where oxygen is used should produce guidelines governing its use in a safe manner. This included community hospitals and settings outside the acute hospital.
- 2.2 This guideline aims to ensure that all patients who receive supplementary oxygen therapy receive therapy that is appropriate to their clinical condition and in line with national guidance, and that appropriate monitoring is carried out.

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Guideline Statements

3. Prescription of Oxygen Therapy

- 3.1 Oxygen is a drug and therefore must be prescribed except in life-threatening emergencies when it must be started immediately.
- 3.2 Doctors should prescribe oxygen using target saturation range, **unless there is a decision that this is inappropriate**, and sign the drug chart.
- 3.3 If monitoring oxygen saturations is inappropriate, this should be clearly documented in the patient's notes.
- 3.4 Doctors should prescribe an appropriate device to deliver oxygen therapy.

4. Administration of Oxygen Therapy

- 4.1 Pulse oximetry should be available in all areas where oxygen is used.
- 4.2 Oxygen saturations should be noted and documented prior to commencing oxygen.
- 4.3 Suggested target saturations for most patients are 94-98%. However patients at risk of hypercapnic respiratory failure (please see section 8 of this policy) have a lower target saturation range of 88-92%.
- 4.4 An appropriate delivery system and flow rate should be selected (please see flow charts in appendices 1 and 2).
- 4.5 Following the flow chart, all patients should have oxygen therapy adjusted to ensure that the patient's saturations are maintained within their target range using the lowest oxygen flow rate necessary to achieve this
- 4.6 Patients at risk of carbon dioxide retention (such as patients with COPD –see section 8) should have oxygen administered and titrated using “flow chart for titration of oxygen in patients at risk of carbon dioxide retention” (appendix 2). Usually this will mean target oxygen saturations of 88-92% and that initially oxygen will be delivered via a Venturi mask.
- 4.7 Oxygen therapy should be decreased in stable patients with satisfactory oxygen saturations. When the oxygen is decreased, saturations should be monitored after 5-10 minutes to ensure oxygen saturations remain within the desired range.
- 4.8 The qualified healthcare professional administering oxygen therapy is responsible for carrying out the steps listed above.

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5. Recording of Oxygen Administration

- 5.1 The administration of oxygen therapy should be monitored and recorded on the drug chart at each medicine round.
- 5.2 When the amount of oxygen administered is changed, and when saturations are recorded, the amount of oxygen the patient is receiving and the delivery device should be recorded in the clinical record.

6. Monitoring of Oxygen Therapy

- 6.1 At each drug round the oxygen therapy being delivered to the patient must to be checked against the prescription.
- 6.2 When a patient is commenced on oxygen therapy, their oxygen saturations should be observed and monitored after 10-15 minutes. The saturations, delivery device and flow rate should be recorded in the clinical record.
- 6.3 If there is a change in either the delivery system or the dose of oxygen therapy being administered, the oxygen saturations should be observed after 10-15 minutes.
- 6.4 If the patient is stable and the target saturations satisfactory, a careful decrease in the oxygen dose can be trialed.
- 6.5 If the patient becomes unstable and/or their saturations are lower than target saturations, the oxygen should be increased according to the flow chart for titration of oxygen therapy.
- 6.6 If staff are concerned at any time, medical advice should be sought.

7. Emergency Oxygen Administration and Documentation

- 7.1 Emergency oxygen should not be withheld because of the absence of a prescription.
- 7.2 If the patient has acutely changed and is requiring oxygen therapy, this fact should be relayed to medical staff.
- 7.3 Staff should determine the choice of delivery device and amount of oxygen to be delivered using the flow sheets in appendix 1
- 7.4 The choice will depend on whether the patient has:
 - a) Critical illness requiring high flow supplemental oxygen.
 - b) Risk factors for carbon dioxide retention, requiring controlled oxygen delivery

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- 7.5 Oxygen should not be withheld from patients at risk of carbon dioxide retention, but must be titrated more carefully.
- 7.6 Once the patient has stabilised, oxygen administration and monitoring should progress according to section 4 and 5.
- 7.7 Oxygen should be prescribed for the patient at the next possible opportunity. It is expected that this will be within 24 hours of the initiation of oxygen therapy.

8. Patients at Risk of Carbon Dioxide Retention

8.1 Identifying patients at risk of carbon dioxide retention

8.1.1 Patients should be considered to be at risk where:

- a) They have a past history of carbon dioxide retention.
- b) They have chronic obstructive pulmonary disease (COPD), cystic fibrosis or chronic neuromuscular conditions.
- c) They have all of these risk factors:
 - I. Long term smoker
 - II. Aged over 50
 - III. History of exertional breathlessness (with no other cause identifiable).

8.1.2 Use of these criteria is likely to mean that a greater proportion of patients are labelled at risk than are actually at risk. However, this approach will ensure improved safety.

8.1.3 Patients at risk of carbon dioxide retention should be identified at the time of admission as part of a joint assessment by medical and nursing staff.

8.1.4 Patients at risk of carbon dioxide retention should have this documented in the clinical notes and recorded on the sensitivities section of the drug chart.

8.2 Prescribing and administering oxygen in patients at risk of carbon dioxide retention

8.2.1 Oxygen should be prescribed on the drug chart with a clear target saturation range as outlined above.

8.2.2 In general it is expected that target saturations for patients at risk will initially be 88-92% and oxygen administered in keeping with the flow chart in appendix 2.

8.2.3 After initiation of oxygen, the patient should be reassessed after 10-15 minutes by a health care professional. They should assess oxygenation and any changes which might suggest carbon dioxide retention including tremor, confusion or drowsiness.

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8.2.4 If the patient's conscious level becomes impaired, immediate advice should be sought from a doctor and a decision made about whether to reduce the oxygen and/or whether it remains appropriate to manage the patient in the hospice.

8.2.5 Facilities for blood gas monitoring are not available in the hospice environment. Management of these patients will therefore be different in the hospice setting when compared to the acute hospital setting. This should be discussed with patients if it is felt that the monitoring of blood gases may alter their management or outcome.

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8.3 Patients who develop carbon dioxide retention:

8.3.1 Any patient who develops carbon dioxide retention at the hospice should have an oxygen alert card completed.

8.3.2 If the patient is discharged, they should be informed of their future risk, given an oxygen alert card, and their GP should be informed.

9. Nebuliser Therapy

9.1 Nebulisers can be driven by oxygen or air.

9.2 To effectively deliver medication, the flow rate should be 5l/min or more.

9.3 Patients who are at risk of type 2 respiratory failure should therefore have nebulisers driven via air, but can continue oxygen therapy via nasal specs at the same time.

10. Terminal Care

10.1 In most end of life situations, monitoring of oxygen saturations will be unlikely to change management or outcome and therefore will be inappropriate.

10.2 In some patients, hypoxia can be associated with increased confusion, or symptoms of breathlessness. In these patients, oxygen saturations may be checked to enable appropriate use of oxygen for symptom control.

10.3 Health care professionals should continue to consider each patient on an individual basis.

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11. Patient who Requests Less Intensive Monitoring

Some patients may wish to accept a lower level of monitoring and accept that their treatment may not be optimal. In these situations, the patient's wishes should be respected.

12. Situations Where Oxygen Therapy is Causing Distress

There may be situations where oxygen administration causes more harm than good for example where it worsens agitation. In these situations, the patient's views should be taken into account if they have capacity. If they lack capacity, an assessment of best interests should be undertaken and documented in the clinical record.

Monitoring of the Guideline

Implementation of the guidance will be considered as a topic for audit by the NSSG in 2014.

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References

1. O'Driscoll BR, Howard LS, Davison AG. British Thoracic society. Guideline for emergency oxygen use in adult patients. Thorax. 2008; 63: Suppl VI; 45-47 and Appendix 4
2. Oxygen safety in hospitals <http://www.nrls.npsa.nhs.uk/alerts/?entryid45=62811>. Accessed 31 January 2011.

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Approval Signatures

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Date: July 2011

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Standard Flow Chart for Titration of Oxygen Therapy

If the patient has a condition immediately requiring high flow oxygen (e.g. seizure, anaphylaxis, cardiac arrest in a relative) then administer 15l/min oxygen via reservoir bag and summon help

If the patient has any of the following, they may be at risk of carbon dioxide (CO₂) retention. Discuss this with a doctor. The patient may require more intensive monitoring.

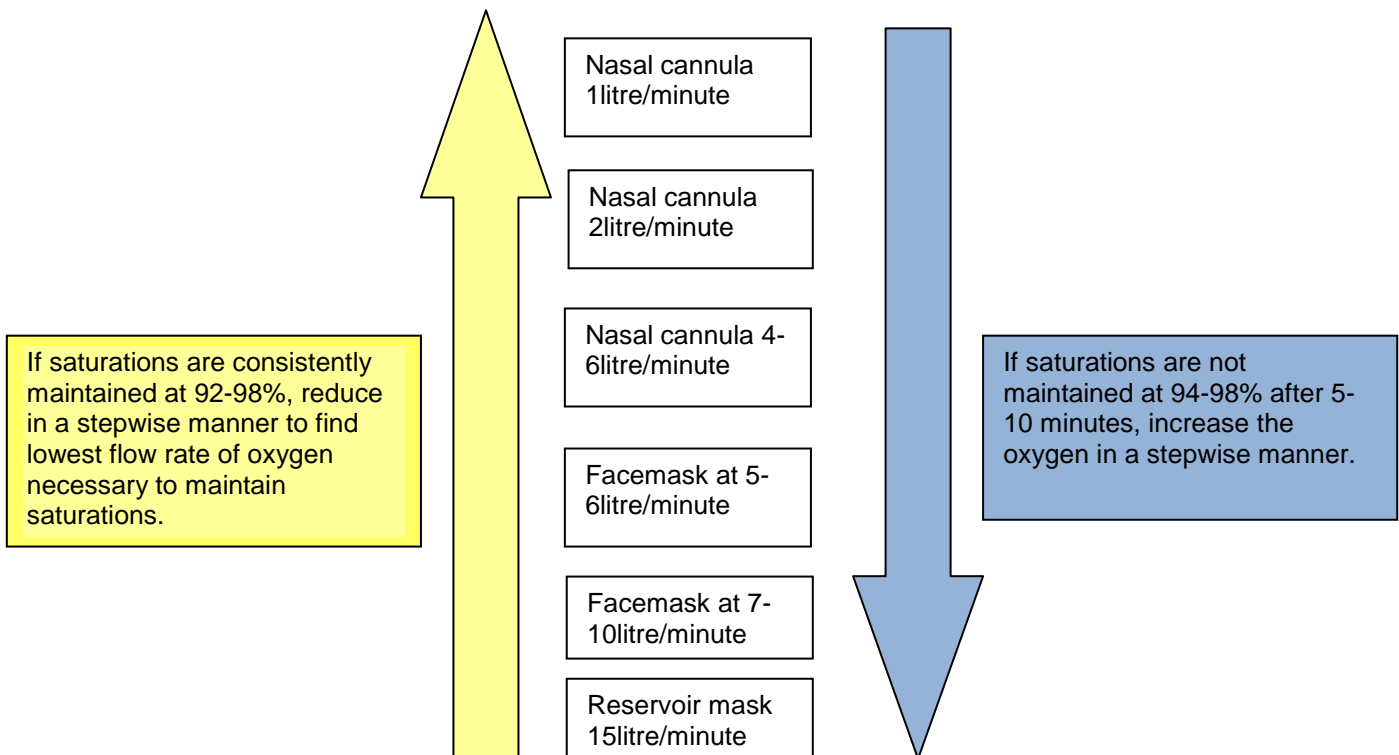
- 1) Previous episode of CO₂ retention (e.g. ITU admission, NIV)
- 2) Known COPD, neuromuscular disorder or other at risk condition
- 3) Age over 50, smoker AND unexplained history of breathlessness on exertion

If none of the above then use the flow chart below

Contact a doctor at any stage if uncertain about management or if concerned about patient

- Titrate oxygen therapy to maintain oxygen saturation at **94-98%** unless otherwise stated in clinical record. When sats are checked or when changes are made to the amount of oxygen a patient is receiving, record oxygen saturation, delivery device and flow rate in the clinical record.
- Usually, patients should initially have oxygen delivered by nasal cannula.

In most patients, oxygen therapy should be titrated up and down to maintain oxygen saturations using this chart:



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Flow Chart for Titration of Oxygen in Patients at Risk of Carbon Dioxide (CO₂) Retention

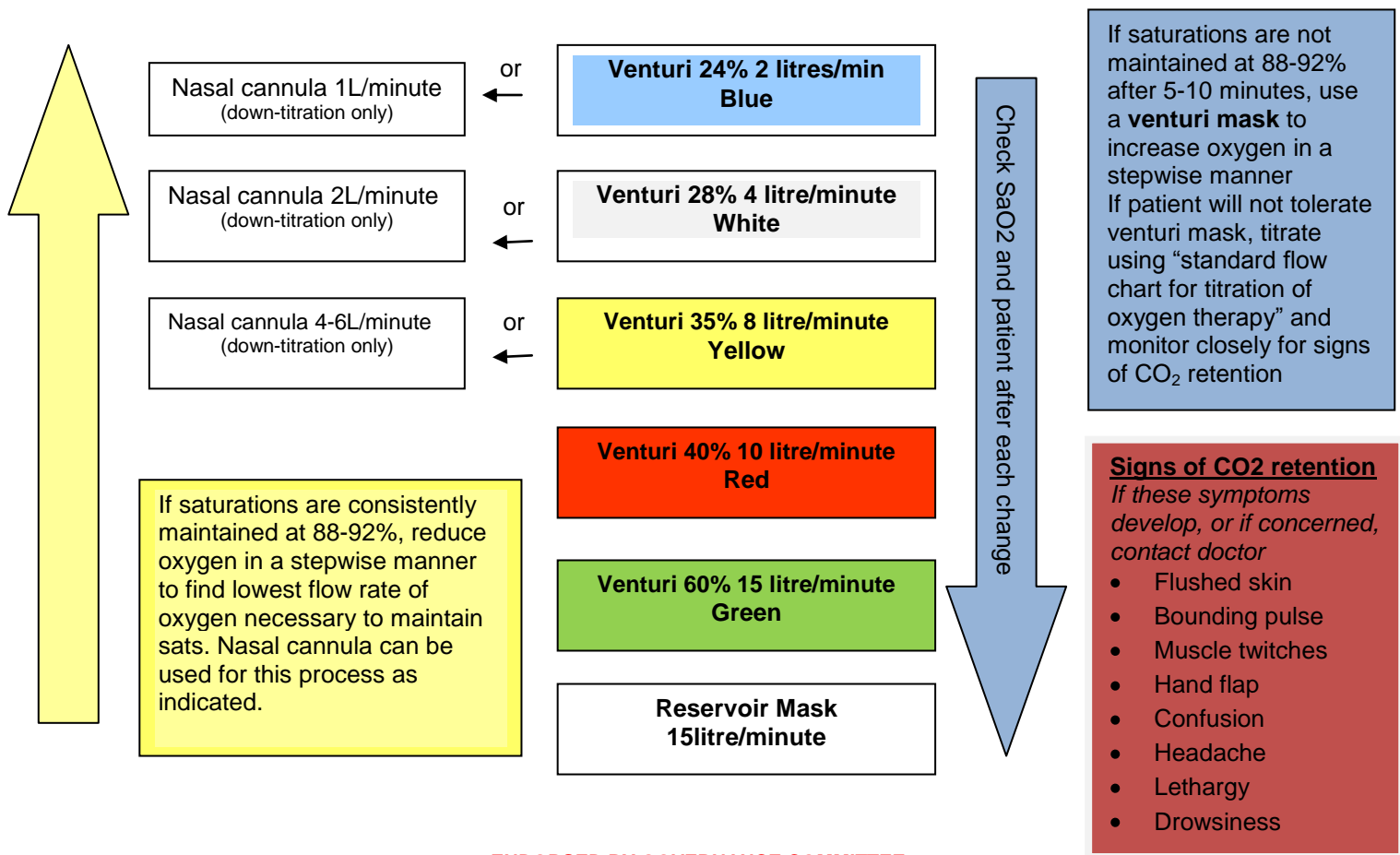
The medical team may decide that the patient is at high risk of CO₂ retention. In this case, patient's oxygen should be titrated using the flow sheet below.

Some patients may have an oxygen alert card which gives instructions regarding oxygen and this should be followed.

If the patient is admitted on oxygen, check oxygen saturations using current delivery system and discuss management plan with medical team.

Cont

- Titrate oxygen therapy to maintain oxygen saturation at **88-92%**. When sats are checked or changes are made to the amount of oxygen a patient is receiving, record oxygen saturation, delivery device and flow rate in the clinical record.
- If a second increase in oxygen is needed, or the patient has not improved after the first increase, contact medical team for advice
- Patients at risk of carbon dioxide retention should usually use a venturi mask when their oxygen therapy is increased unless it is otherwise indicated in the clinical record or they do not tolerate a mask.
- Once their oxygen requirements have stabilised, they are likely to be able to use nasal cannula again if they choose.



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