

OXYGEN THERAPY QUICK REFERENCE GUIDANCE (G404)

Guideline Reference	G404
Version Number	1.3
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Approved by:	Physical Health Medical Devices Group 12 June 2024

VALIDITY – Guidelines should be accessed via the Trust intranet to ensure the current version is used.

CHANGE RECORD

Version	Date	Change details
1	27 March 2020	<i>New guidance</i>
1.1	30 April 2020	<i>Put into Trust approved guideline template</i>
1.2	25 June 2022	<i>Reviewed and Introduction added – Approved at PHMD (June 22)</i>
1.3	12 June 2024	<i>Reviewed. Updated link to BOC's page and a SOP link added. Approved at Physical Health Medical Devices Group (12 June 2024).</i>

Purpose:

The purpose of this document is to provide a quick reference guide for clinicians who may be required to administer Oxygen to a patient who is presenting as acutely unwell.

Introduction

Oxygen (O²) is present in the atmosphere at 21% and is essential to life. An average healthy individual with normal oxygen consumption has no more than four minutes supply of oxygen in the blood. Oxygen is one of the most common medicines used in hospital settings and should always be prescribed – except in emergencies, where oxygen should be given first and documented later.

Oxygen is indicated in many critical conditions and can save lives by preventing severe hypoxaemia. However, there is a potential for serious harm and even death if it is not administered and managed appropriately. This guideline applies to all staff who are involved in the administration, use and handling of any medical gases

Medical gas cylinders when used correctly are a convenient and safe method of administering the gas to the service user. There are however inherent dangers if medical gas cylinders are not used correctly, and the safety advice contained within this document should be followed at all times.

Medical gas cylinders are coloured to identify the contents and have a plastic collar indicating properties of the gas and other data including type of gas, batch of manufacture and use by date where appropriate and safety instructions. Oxygen cylinders are black with a white collar or in the smaller more modern cylinders (sizes CD) are all white with an integral pressure regulator. In some locations piped oxygen is provided and delivery is achieved by correctly setting the flow meter to the required flow rate.

Although there are no specific contraindications to the use of medical oxygen the inspired concentration should be limited for longer periods in those service users with Chronic Obstructive Pulmonary Disease (COPD).

Patient Assessment

Assessing patients:

- All patients presenting acutely unwell within Humber Teaching NHS Foundation Trust premises must be assessed and monitored using the National Early Warning Score2 (NEWS2).
- This should be clearly and concisely documented in accordance with Trust policy.

The oxygen saturation should be checked by pulse oximetry in all breathless and acutely ill patients and the inspired oxygen concentration should be recorded on the observation chart with the oximetry result.

For critically ill patients high-concentration oxygen via a non re-breathe mask should be administered immediately and this should be documented in the patient's notes.

Pulse oximetry must be available in all locations where emergency oxygen is used Clinical assessment is recommended if the saturation falls by $\geq 3\%$ or below the target range for the patient That is usually $>96\%$ for patients with no underlying chest disease and 88-92% for patients at risk of hypercapnic respiratory failure (usually due to COPD).

It is important to note that Oxygen is a drug and should be prescribed. However, in life-threatening emergencies, oxygen can be given without a prescription until the patient is stable. Oxygen does not need to be signed for on a drug chart. If a patient's oxygen requirements increase, medical assessment is needed.

Target Oxygen Prescription

For patients who are requiring longer term oxygen therapy and who have been assessed by a medic:

- Oxygen should be prescribed to achieve a target saturation of 94-98% for most acutely ill patients or 88-92% or patient-specific target range for those at risk of hypercapnic respiratory failure.
- The NHSE guidance for target O₂ levels in patients with COVID-19 is 92-96% (88-92% or patient-specific target range for those at risk of hypercapnic respiratory failure)
- The target saturation should be written (or circled) on the drug chart or entered in an electronic prescribing system.

Monitoring and maintenance of target saturation

- Oxygen saturation and delivery system (including flow rate) should be recorded on the patient's monitoring chart.
- Oxygen delivery devices and flow rates should be adjusted to keep the oxygen saturation in the target range. Prompt clinical assessment is required if oxygen therapy needs to be initiated or increased due to a falling saturation level.

Weaning and discontinuation of oxygen therapy

- Oxygen should be reduced in stable patients with satisfactory oxygen saturation.
- Oxygen should be discontinued once the patient can maintain saturation within or above the target range breathing air but the prescription for a target range should be left in place in case of future deterioration and to guide NEWS2. Initially saturations should be monitored for a period of five minutes post cessation of oxygen therapy and then rechecked after one hour. If it remains within the desired range oxygen therapy may be discontinued.

Clinicians must bear in mind that supplemental oxygen is given to improve oxygenation but it does not treat the underlying causes of hypoxaemia which must be diagnosed and treated as a matter of urgency.

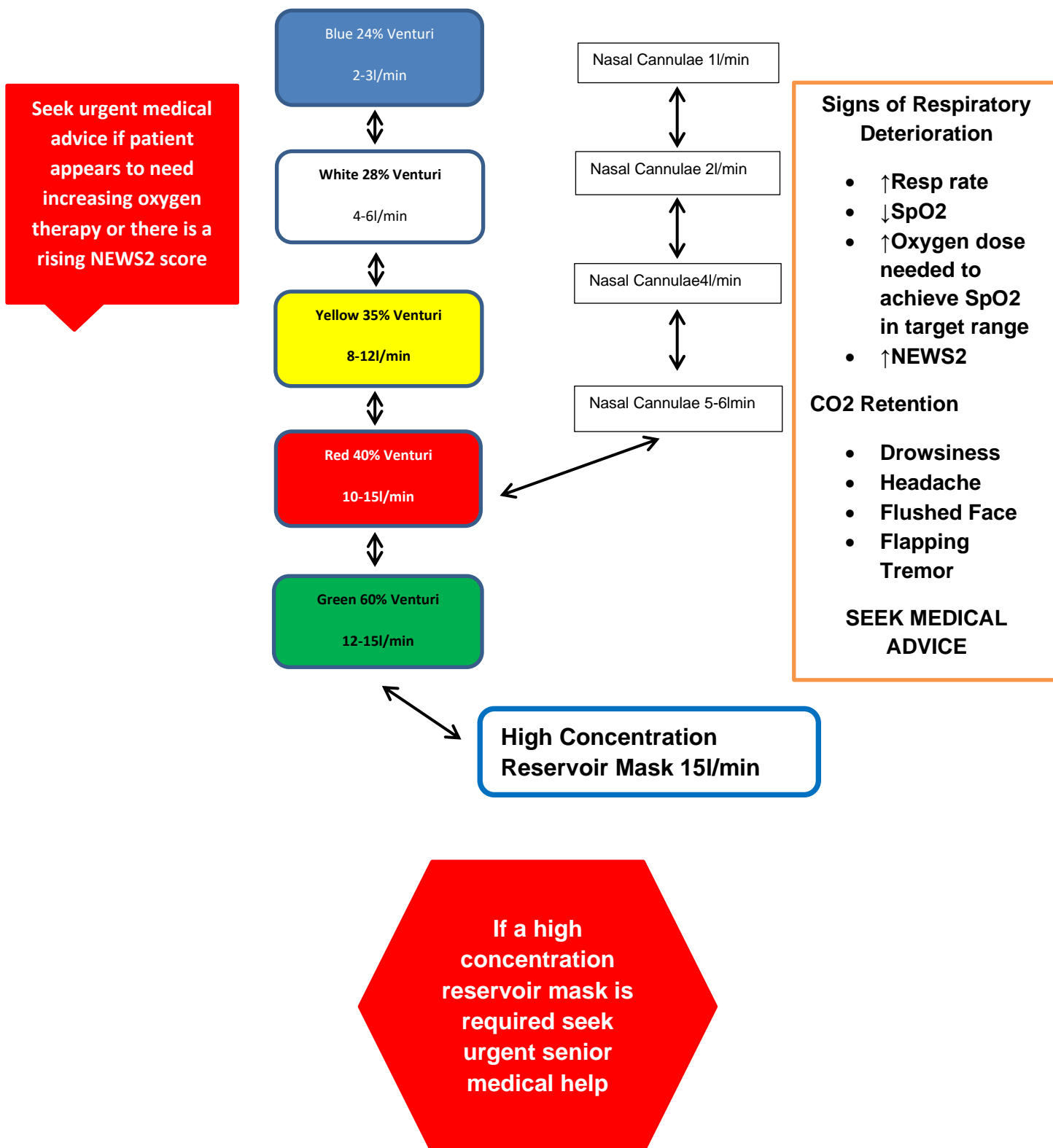
For guidance on the safe and correct use of oxygen cylinders please view:

[Medical-Oxygen-Integral-Valve-Cylinders-leaflet_tcm410-671502.pdf \(boconline.co.uk\)](#)

The below table shows available options for stepping dosage up or down.

The chart does **not** imply any equivalence of dose between venturi masks and nasal cannulae.

Allow at least five minutes at each dose before adjusting further upwards or downwards (except where a major and sudden fall in saturation occurs).



Types of Oxygen Delivery Device

Venturi Mask

This consists of a generic aerosol mask with the appropriately selected oxygen venturi valve and a length of tubing.

Used to deliver a precise targeted amount of oxygen to a patient.

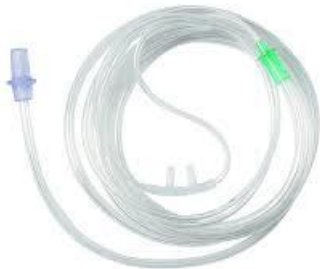


Nasal Cannulae

A device for administering oxygen nasally to patients. Allows patients to still eat drink and speak easily whilst receiving continuous oxygen therapy.

Also useful for patients who cannot/will not tolerate masks.

Limited to relatively low doses of oxygen therapy only; a maximum of six litres per minute.



High Concentration Mask with Reservoir Bag

Will deliver high concentration oxygen 60-90% when used at a flow rate of 15l/min.



Nebuliser Therapy

This consists of a nebuliser chamber coupled to an aerosol mask and a length of tubing

Can be used to deliver oxygen driven nebulised medication to a patient

Set flow rate to 6l/min



Oxygen Safety

- Oxygen is non-flammable but strongly supports combustion. Things that are not normally combustible may burn in oxygen.
- Do not store or use medical gas cylinders near naked flames, sources of ignition or combustible materials. These conditions increase the risk of a fire occurring.
- Store Oxygen cylinders securely in a safe area.
- Do not use oil or grease (or any oil-based products which includes hand creams) in the vicinity of an oxygen cylinder. Oils and grease can spontaneously ignite in the presence of oxygen in high temperature conditions.

References/Useful Links

For Further Guidance beyond the remit of this document staff should refer to:

www.brit-thoracic.org.uk/quality-improvement/guidelines/emergency-oxygen

Appendix 1: Equality Impact Assessment (EIA)

For strategies, policies, procedures, processes, guidelines, protocols, tenders, services

1. Document or Process or Service Name:
2. EIA Reviewer (name, job title, base and contact details):
3. Is it a Policy, Strategy, Procedure, Process, Tender, Service or Other?

Main Aims of the Document, Process or Service
Please indicate in the table that follows whether the document or process has the potential to impact adversely, intentionally or unwittingly on the equality target groups contained in the pro forma

Equality Target Group 1. Age 2. Disability 3. Sex 4. Marriage/Civil Partnership 5. Pregnancy/Maternity 6. Race 7. Religion/Belief 8. Sexual Orientation 9. Gender re-assignment	Is the document or process likely to have a potential or actual differential impact with regards to the equality target groups listed? Equality Impact Score Low = Little or No evidence or concern (Green) Medium = some evidence or concern (Amber) High = significant evidence or concern (Red)	How have you arrived at the equality impact score? a) who have you consulted with b) what have they said c) what information or data have you used d) where are the gaps in your analysis e) how will your document/process or service promote equality and diversity good practice
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Equality Target Group	Definitions	Equality Impact Score	Evidence to support Equality Impact Score
Age	Including specific ages and age groups: Older people Young people Children Early years	Low	This Guideline is applicable to all ages
Disability	Where the impairment has a substantial and long-term adverse effect on the ability of the person to carry out their day to day activities: Sensory Physical Learning Mental health (including cancer, HIV, multiple sclerosis)	Low	This Guideline is applicable to all regardless of disability
Sex	Men/Male Women/Female	Low	This Guideline is not influenced by gender
Marriage/Civil Partnership		Low	This guideline is applicable to all regardless of marital status
Pregnancy/ Maternity		Low	This guideline is not influenced by Pregnancy/ maternity

Equality Target Group	Definitions	Equality Impact Score	Evidence to support Equality Impact Score
Race	Colour Nationality Ethnic/national origins	Low	This guideline is not influenced by race or ethnicity
Religion or Belief	All religions Including lack of religion or belief and where belief includes any religious or philosophical belief	Low	This guideline is not influenced by religion
Sexual Orientation	Lesbian Gay men Bisexual	Low	This guideline is not influenced by sexual orientation
Gender Reassignment	Where people are proposing to undergo, or have undergone a process (or part of a process) for the purpose of reassigning the person's sex by changing physiological or other attribute of sex	Low	This guideline is applicable to all

Summary

Please describe the main points/actions arising from your assessment that supports your decision. Generic emergency medical treatment	
EIA Reviewer: John Sands	
Date completed: 20/03/24	Signature: <i>J.sands</i>