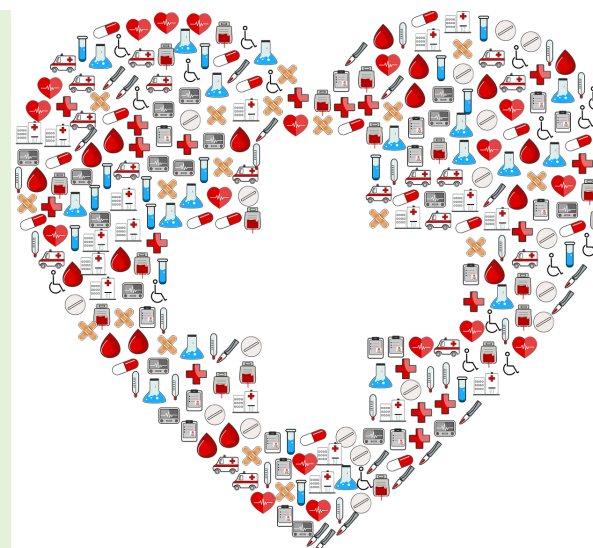


Respiratory Specialist Nursing Team

Oxygen Therapy



During the Covid-19 pandemic a respiratory nurse is available for advice / support from 9am to 6pm, Monday to Sunday on 6142 or 01234 730343

Extension 5409 / 5242 Bleep: 451 and 566

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Administration of Oxygen therapy in Adult Patients

- We give oxygen at concentrations greater than room air (21%) (*Cheng, H., 2015*).
- Oxygen is required for cell respiration and to prevent tissue death.
- Oxygen therapy is a treatment for Hypoxaemia, **not** breathlessness (*Hardinge, M, et al., 2015*), (*BNF, 70, 2016*).
- Oxygen has not been shown to have any effect on the sensation of breathlessness in non-hypoxaemic patients (*Hardinge, M, et al., 2015*).

We **ALL** get short of breath at times, even the greatest athletes!
This does not mean that we need supplementary oxygen.

Prescribing Oxygen

Oxygen is a drug and **MUST** be prescribed!

- Prescribe oxygen on MedChart
- The patients target saturations must be identified (*BNF, 70, 2016*).
- If not prescribed—please highlight to the Doctors.

References

1. Cheng, H. (2015) Physiology Question-Based Learning. [Online]. <http://link.springer.com/book/10.1007/978-3-319-12790-3>
2. Hardinge, M, et al. (2015) British Thoracic Society guidelines for home oxygen use in adults: accredited by NICE, Thorax. [https://www.brit-thoracic.org.uk/document-library/clinical-information/oxygen/home-oxygen-guideline-\(adults\)/bts-guidelines-for-home-oxygen-use-in-adults/](https://www.brit-thoracic.org.uk/document-library/clinical-information/oxygen/home-oxygen-guideline-(adults)/bts-guidelines-for-home-oxygen-use-in-adults/)
3. British National Formulary: No 70. (2016) London: BMJ Group.
4. Patel, I. (2016) Oxygen Therapy: Risk Assessment, South East London oxygen study day 26/5/2016. https://www.networks.nhs.uk/nhs-networks/london-lungs/documents/oxygen-risk-assessment-sel-oxygen-study-day/at_download/file
5. Markovitz, G. (2010) 'Effective Inspired Oxygen Concentration Measured', Respiratory Care. Vol. 55 (4). <http://www.rcjournal.com/contents/04.10/04.10.0453.pdf>
6. Driscoll, B., Howard, L and Davison, A. (2008) 'BTS guideline for emergency oxygen use in adult patients', thorax. http://thorax.bmj.com/content/63/Suppl_6/vi1.extract
7. Burtenshaw, A., Bengler, J. and Nolan, J. (2015) *Emergency airway management*, 2nd edition, Cambridge University Press.

If you would like any further information or additional training in your ward/department we would be happy to provide it.

Please contact Fiona Maryan-Instone, Lead
Respiratory Specialist Nurse
Ext. 5252

Would you consider giving any medication without a prescription?

Please ensure your patients oxygen is prescribed on MedChart.

In an emergency situation oxygen can be given without a prescription but must be documented retrospectively.

Safety of Oxygen

Risk Factors:

- Naked flame/cigarette smoking
- Alcohol gels
- Topical medications containing alcohol
- Petroleum Jelly
- Oil or grease

The only product safe to use to soothe dry nose / lips is KY jelly *Patel, I., 2016*).

Smoking with oxygen is dangerous and can cause serious injury or death.

Storage of Oxygen

Each ward has holders installed for the safe storage of oxygen cylinders.

- Surplus cylinders should be returned to storage by the Portering Team.
- Empty cylinders will be replaced by the Portering Team.
- They can be contacted on bleep 356.



Disconnecting Oxygen Supply

If you were asked to disconnect the oxygen supplying your ward or department in the event of an emergency, would you know what to do? There is an emergency stop valve located in each ward / department. Please take the time to find out where it is located in your place of work and ensure that your colleagues are aware of it too.



CD / DD Cylinders

Flow rate	Time = Hours
1	7.6
2	3.8
3	2.5
4	1.9
5	1.5
6	0.9
10	0.7

Ensure the cylinder is in date.



Ensure the cylinder is switched on. The open/close dial is situated at the side of the cylinder.



Be aware of how much oxygen is left in the cylinder.



Nasal Cannula

- This can provide 24-44% oxygen
- We can give flow rates of up to 6 L/min
- 2-4 L/min normal and most comfortable
- This device allows patient to eat and drink and to communicate whilst receiving the oxygen
- It allows for supplementary oxygen therapy during nebulisation if the patient is hypoxic and requiring oxygen to maintain adequate oxygen saturations levels (Markovitz, G., 2010).



Venturi Mask

- This device delivers 24-60% oxygen
- It is the only method of delivering precise concentrations of oxygen
- The percentages are indicated via British Standard colour codes: Blue 25%, White 28%, Yellow 35%, Red 40%, Green 60% (Hardinge, M, et al., 2015).



Humidification

- Humidification is not required for low flow Oxygen - up to 4L
- Use humidification with the Venturi system at 35% and above
- Oxygen delivered via tracheostomy must be humidified as is delivered directly into the lower airway



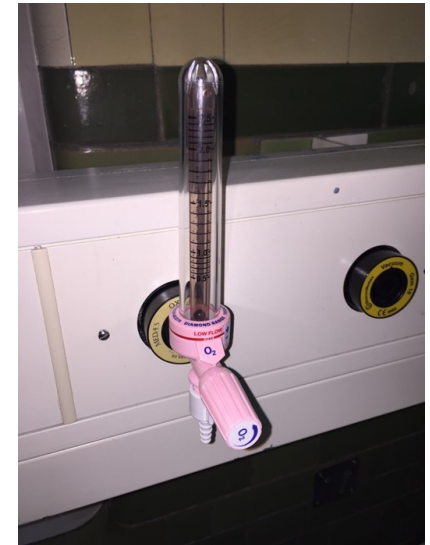
Medium Flow Mask

- Flow rate must be between 5-10 L/min
- Less than 5 L/min is not recommended as 5 L/min or above is required to flush out the exhaled CO₂
- Delivers 31—60 % oxygen

This mask should NOT be used for COPD as variable amount of oxygen is delivered (*Driscoll, Howard, and Davison, 2008*).



Low Flow Meter



Standard Ambulatory Cylinder



Oxygen flow meters used at Bedford Hospital

Single Oxygen Point



Double Oxygen Point



Non-rebreathe Mask

- This device delivers the highest % of O_2
- The percentage delivered depends on the flow rate and the fit of mask
- Always fully inflate bag before fitting to the patient
- The flow rate must be set at 15 L/min



Oxygen Flow L/min	Approximate % of Oxygen
1	24%
2	28%
3	32%
4	36%
5	40%
6	44%
7	48%
8	52%
9	56%
10	60%

Assessing Patients



- Oxygen saturations should be checked by pulse oximetry in all breathless and acutely ill patients (supplemented by blood gases when necessary).
- Pulse Oximetry must be available in all locations where emergency oxygen is used (*Burtenshaw, Bengler and Nolan, 2015*).

Nail varnish and acrylic / gel nails must be removed as they will affect the reading.

Some patients are very sensitive to oxygen

Yellow alert bracelets are provided for patients who are at risk of type 2 respiratory failure.

Patients who require supplementary oxygen must be cared for in a bed with piped oxygen.



Oxygen cylinders should only be used to transfer patients from ward to ward

Or

To allow patients to leave the ward to have other investigations i.e. x-ray, physiotherapy

Ensure there is enough oxygen in the cylinder to last the journey there and back, and to include the period of time for the investigation / treatment.

Weaning and Discontinuation of Oxygen Therapy

- Oxygen should be reduced in stable patients with satisfactory oxygen saturation
- If you have difficulty in weaning oxygen, please call the respiratory nurse on ext 6142 or bleep 451
- Some patients may need to be discharged home with oxygen. This can be arranged and will not delay discharge.

Please inform the respiratory nurse as soon as discharge date and destination is.

Which patients might require oxygen at home?

- Patients whose oxygen saturations are less than or equal to 92% and are medically stable should be referred to the Respiratory Nursing Team for review
- Patients with COPD, saturations should be between 88-92% If they are not meeting the target sats they may require home O₂
- If you have any concerns, please discuss with the Respiratory Nurses on ext 6142 or Bleep 451 or 566

Adult oximeter probes can be attached to the finger or ear but are not interchangeable



If an oximeter intended for a finger is attached to the ear (or vice versa) the reading can be 50% lower or 30% higher than the real value. Adult probes used on children or vice versa give the same inaccuracies.

Positioning the Patient to Aid Oxygen saturation level

- Oxygenation is reduced in the supine position (when the patient is lying flat in bed) (*Bertenshaw, Bengner and Nolan, 2015*).
- Fully conscious hypoxemic patients should ideally be allowed to maintain the most upright posture possible unless there is a medical reason to immobilise the patient (e.g. skeletal or spinal trauma).