OXYGEN (A)

(Revised: April 2019)

TYPE:	A naturally occurring colourless and odourless gas

PRESENTATION:	Compressed gas in all-white cylinders of various sizes, to be fitted with an appropriate pressure-reducing device

ACTION:	Essential element for aerobic metabolic needs and sustaining life. Oxygen administration improves, or prevents a reduction in, the oxygen content of blood leaving the lungs.

USES:	**ICP**	A wide range of situations, for the treatment or prevention of hypoxaemia	**AP**

ADVERSE EFFECTS:	1. Increased risk of fire/explosion – oxygen strongly supports combustion 2. Mucosal dryness and irritation 3. Hypoventilation in some COPD patients with CO_2 retention (titrate oxygen to maintain SpO_2 88 – 90%)

CONTRA-INDICATIONS:	Known paraquat poisoning with SpO_2 ≥88% History of bleomycin therapy with SpO_2 ≥88%

PRECAUTION:	Neonates (especially pre-term infants) are particularly susceptible to the toxic effects of oxygen. When absolutely required, the lowest effective concentration, for the shortest possible time, should be used to achieve adequate oxygenation.

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OXYGEN (A) – cont.

DOSES:

ADULT & PAEDIATRIC:

ICP

With the exception of conditions listed below, oxygen should generally be titrated to maintain SpO_2 ≥94% (i.e. unless otherwise required, there is no need to push saturations to 100%).

Deliver oxygen through a device appropriate to the required inspired concentration of oxygen.

- Nasal cannulae: 1 – 4 litres/min (approx. 24 – 40% oxygen) for low oxygen requirements
- Oxygen ("Hudson") mask: 6 – 15 litres/min (approx. 30 – 65% oxygen) for moderate oxygen requirements
- Nebuliser: 8 litres/min for moderate oxygen requirements with need for aerosolised medications
- Non-rebreather mask (NRBM): 15 litres/min (approx. 60 – 97% oxygen) for high oxygen requirements
- Bag-valve-mask (BVM): 15 litres/min or demand valve (up to 100% oxygen) for high oxygen requirements
- Continuous positive airway pressure (CPAP): 8 – 15 litres/min (titrated to achieve desired effect/pressure) for high oxygen requirements

Conditions with specific oxygen requirement:

- Conditions requiring 100% oxygen delivery (NRBM, BVM)
  - Obstetric emergencies
  - Carbon monoxide poisoning
  - Unrelieved upper airway obstruction
  - Diving emergencies
- COPD patients with possible CO_2 retention – titrate oxygen delivery to maintain SpO_2 of 88 – 90%
- Rapid sequence intubation (RSI) – aim for highest SpO_2 possible (high flow oxygen [15 litres/min] via nasal cannulae is mandatory during this procedure, in addition to IPPV)

AP