

## Appendix B: Guidance on oxygen delivery interfaces in children

### Guidance on oxygen delivery interfaces in children

DEVICE/FiO <sub>2</sub>	INDICATIONS	ADVANTAGES	LIMITATIONS
<p><b>Headbox</b></p> <p>Humidified and warmed O<sub>2</sub> 24-60%</p>	<p>Suitable for infants and small children with acute episodes of respiratory illness eg bronchiolitis</p>	<ul style="list-style-type: none"> <li>Controlled oxygen delivery</li> <li>Well tolerated in infants</li> <li>Easy delivery of humidified O<sub>2</sub></li> </ul>	<ul style="list-style-type: none"> <li>CO<sub>2</sub> build up may occur if flow &lt;7l/min <b>OR</b> outflow from box is obstructed.</li> <li>O<sub>2</sub> needs to be warmed for smaller infants as the environment inside can become cold</li> <li>Access to give care can cause significant fall in oxygen delivered</li> </ul>
<p><b>Nasal cannulae</b></p> <p>Maximum flow rate 2l/min</p> <p>Estimated oxygen delivery 24-40%</p>	<ul style="list-style-type: none"> <li>Long Term Oxygen Therapy (LTOT).</li> <li>Minimal oxygen requirement</li> <li>Recovery phase from acute episodes</li> </ul>	<ul style="list-style-type: none"> <li>Low cost and easy for patient to eat and talk</li> <li>well tolerated</li> <li>No re-breathing.</li> </ul>	<ul style="list-style-type: none"> <li>Uncontrolled oxygen delivery</li> <li>Oxygen delivery is affected by flow setting, respiratory rate, depth of breathing and geometry of nose.</li> <li>Dries the nose, can cause headaches.</li> </ul>
<p><b>Facemask</b></p> <p>5-15 litres/min</p> <p>Estimated oxygen delivery 40-60%</p>	<ul style="list-style-type: none"> <li>Use for patients who need high oxygen delivery</li> </ul>	<p>Useful in children who</p> <ul style="list-style-type: none"> <li>are mouth breathers</li> <li>have nasal irritation</li> <li>have epistaxis</li> </ul>	<ul style="list-style-type: none"> <li>Minimum delivery 5litres/min to avoid rebreathing of expired CO<sub>2</sub>.</li> <li>Oxygen delivery is affected by flow setting, mask fitting, mask leak and patient's breathing pattern.</li> </ul>
<p><b>Non re-breathe mask</b></p> <p>6 -15 litres/min</p> <p>Estimated oxygen delivery 60-100%</p>	<p>Often used in APLS setting</p> <p>(trauma, shock, severe asthma, convulsions, reduced level of consciousness)</p>	<p>Delivers very high concentrations of oxygen</p>	<ul style="list-style-type: none"> <li>Minimum delivery 6 litres/min to avoid rebreathing of expired CO<sub>2</sub>.</li> <li>Oxygen delivery is affected by mask fitting and mask leak</li> </ul>

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