When to use nasal cannula, a simple mask or a non-rebreathing mask?

Annex 1 - Oxygen therapy and Oxygen humidification

Type:	**Nasal Cannula/Prongs**
When to use:	When delivery low-flow oxygen (0.1L-4L in paediatrics and up to 6L in adults) Preferred method of oxygen delivery in children less than 5 years of age.
Advantages:	Come in varying sizes from preterm to adult (4 in total) More comfortable than masks and helps with compliance In paediatrics: Higher concentrations may be given via nasal cannula
Disadvantages:	Higher flow rates can irritate and dry the nasal mucosa. If high-flow oxygen therapy via nasal cannula to be given over 2 hours, humidified oxygen should be used In neonates and infants, improperly sized cannula can cause nasal obstruction or epistaxis Nasal cannulas are contraindicated in patients with a nasal deformity or trauma, surgery, epistaxis, fractured base of skull, nasal/sinus congestion Frequent clearing of the nasal passages may be required to optimize efficacy of nasal cannula (see procedure on nasopharyngeal suctioning if necessary) **CAUTION**: Nasal Cannula/Prongs have an increased risk of aerosolization compared to simple oxygen masks or NRM.
Type:	**Simple Mask**
When to use:	When delivering oxygen above 5L/min between in paediatrics and between 5L/min-10L/min in adults
Advantages:	Can be used for patients experiencing nasal irritation or epistaxis Useful for patients who are strictly mouth breathers
Disadvantages:	Available in only 2 sizes (paediatric and adult) and may not fit well to each face Less comfortable than nasal cannula, muffles communication and can cause increased distress/anxiety in patients. Restricts drinking and feeding **CAUTION**: If used with a lower flow rate, the risk of inhaling CO_2 that has been exhaled into the mask increases, thus, increases the risk of altered conscious states (hypercapnia) and worsen respiratory distress. **CAUTION**: Ensure each mask is tightly fitted, to reduce risk of aerosol spread
Type:	**Non-Rebreathing/high concentration**
When to use:	For flow rates over 5L/min in paediatrics and over 8L/min in patients over 12 years old* *The healthcare provider must be capable of ensuring an adequate and maintained flow **sufficient to ensure the reservoir bag remains 2/3rds full during inspiration**. Ideally, the oxygen flow should be above a flow of oxygen ≥10-12 L/min. Currently, the MSF oxygen concentrators can only provide a maximum flow rate of 10L/min. When possible, flow rates should be greater than the above values.
Advantages:	80-100% oxygen can be administered **Suitable for patients in respiratory distress or any type of shock**
Disadvantages:	Available in only 2 sizes (paediatric and adult) and may not fit well to each face The healthcare provider must ensure a good seal between the mask and the patient and Less comfortable than nasal cannula, muffles communication and can cause increased distress/anxiety in patients. Restricts drinking and feeding

	 **CAUTION**: If the oxygen flow rate is under 5L/min in paediatrics or under 8L/min in adults, the bag could be partly filled by CO_2 exhaled by the patient. Rebreathing his/her own CO_2 could alter conscious state (hypercapnia) and worsen the respiratory distress  **CAUTION**: Ensure each mask is tightly fitted, to reduce risk of aerosol spread, and do not remove the little green valves from the NRM.