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How to Use This Document

This is a living document, created by created by nurses, physicians, respiratory therapists and other healthcare providers from multiple institutions and multiple countries via the OpenCriticalCare.org project.

The goal of this document is to provide tools that can be locally modified to help healthcare providers learning to provide respiratory care for hospitalized patients.

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Adult oxygen therapy escalation algorithm

A medical mask should be placed over nasal cannula or HFNO for patients with suspected or confirmed highly infectious respiratory illness (e.g. COVID-19)

- **Start oxygen at 1-5 L/min**
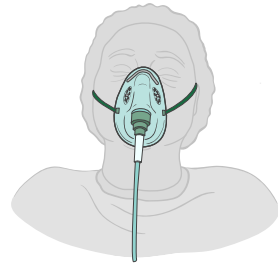- Use **nasal prongs**
- Assess response

FiO_2 0.23 - 0.4

If continued distress or SpO_2 < 90% (<94% if emergency signs; <92-95% if pregnant)

- Consider **air entrainment mask** if hypoxemic respiratory drive (e.g. known hypercarbia in COPD)
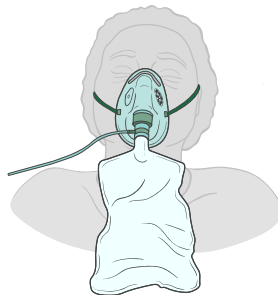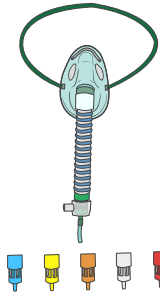- Titrate oxygen **2-15 L/min** by color

FiO_2 0.24 - 0.6

- Use **face mask**
- Increase oxygen to **5-10 L/min**
- Assess response

FiO_2 0.3 - 0.5

If continued distress or SpO_2 < 90% (<94% if emergency signs; <92-95% if pregnant)

- Use **face mask with reservoir**
- Start oxygen at **10-15 L/min** & titrate to ensure bag inflates
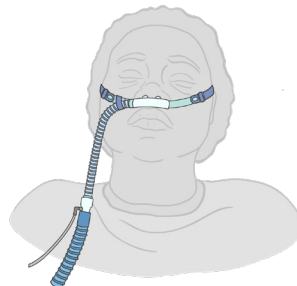
FiO_2 0.5 - 0.85

Heated humidification systems should be used with HFNO and BIPAP/CPAP.

If continued distress or SpO_2 < 90% (<94% if emergency signs; <92-95% if pregnant)

- Continue to try to find a higher level of care and consider one of the following if available and adequate O2 supply:

HFNO: 30-60 LPM (may also adjust FiO_2)

CPAP: 10-15 cmH_2O

BIPAP: PS ($\triangle$P) 5-15/PEEP (EPAP) 5-15

FiO_2 0.21 - 1.0

Oronasal BIPAP/CPAP

HFNO

***If continued respiratory distress or SpO_2 < 90% on 15L/min**, further clinical management decisions should be made based on individual patient characteristics, local resources and expertise.*

***Wean O2 flow & avoid SpO_2 100%** to avoid ill effects of hyperoxia & excess O_2 consumption. Optimal SpO2 may vary with locally available resources.*

CPAP - continuous positive airway pressure; **BIPAP** - bilevel positive airway pressure; **HFNO** - high flow nasal oxygen; **LPM** - liters per minute; Δ delta; **PS** - pressure support; **PEEP** - positive end expiratory pressure; **EPAP** - expiratory positive airway pressure

Algorithm modified from: IMAI district clinician manual: hospital care for adolescents and adults - guidelines for the management of common illnesses with limited resources.