Government of Western Australia
Department of Health

Safe use of oxygen and ventilatory devices for adults and paediatrics during the COVID-19 outbreak

Developed by the COVID-19 Respiratory Network, 26 March 2020

This is to provide a consensus guide to safe and practical use of resources for the treatment of suspected or confirmed COVID-19 patients for clinicians in WA based on best available evidence for application in local settings.

	Device	Setting	Precautions
Oxygen	Nasal Prongs (NP) 1-4L/min) Paediatric NP (0-3L/min)	ED: Single room or cohorted COVID area Ward: Single room, cohorted COVID area. ICU: Single room, cohorted COVID area. Transit: Surgical mask on patient	Droplet
	Hudson Mask (4-8L/m) or Non Rebreathing Mask (8-15L/min)	ED: Single room or cohorted COVID area Ward: Single room, cohorted COVID area. ICU: Single room, cohorted COVID area. Transit: Surgical mask on patient.	Droplet
	Hi Flow Nasal Prongs (HFNP)*	ED: Single room if available, cohorted COVID area	Airborne

	Device	Setting	Precautions
		Ward: Single room, cohorted COVID area. ICU: Single room, cohorted COVID area. Transit: If possible change to NP, HM or NRM. Surgical mask and visor on patient	
Nebuliser – avoid (saline or salbutamol)	Best practice – use MDI and spacer Use in severe/life threatening asthma in COVID/?COVID setting. * Avoid saline nebs for airway clearance	ED: Single room or cohorted COVID area Ward: Single room or cohorted COVID area ICU: Single room or cohorted COVID area.	Droplet

NON-INVASIVE VENTILATORY (NIV) THERAPY	Setting	Precautions
CPAP • CPAP is not recommended for routine use in COVID type 1 respiratory failure patients. In remote areas in a deteriorating patient where intubation is not available, it may be considered as a temporising therapy while awaiting transport	ED or WARD Area: NPR, Single room	Airborne
COVID or suspected COVID patients already on CPAP (OSA) • Stop PAP treatment in the short term • If possible, use non-PAP therapies (eg dental devices, avoidance of supine posture)	WARD: NPR, Single room	Airborne

NON-INVASIVE VENTILATORY (NIV) THERAPY		Setting	Precautions
• If the underlying condition poses a serious health risk use Non-vented NIV mask with HEPA filter and exhalation port to minimise aerosolisation. **Paediatrics:** Patient needs to be assessed for safety of CPAP therapy cessation as dental devices cannot be used.			
NIV • No role for COVID with Type 1 Failure • Consider for COPD in Type 2 failure and COVID/?COVID with no pneumonia • Consider for decompensated Type 2 failure when NIV dependant (MND) and COVID/?COVID with no pneumonia	**Adults**: Use Blue Non-vented NIV mask with HEPA filter and exhalation port to minimise aerosolisation. • No humidification. • Exhalation port should be placed on the device side of the filter (i.e. mask-filter-exhalation port-tubing-NIV device). • Replace filter every 24 h. **Paediatric:** • Non-vented masks should not be used in children • Children should continue on their usual mask and equipment in a single room with aerosol precautions.	<u>ED:</u> No NIV unless NPR or single room available – rapid transit to ward on controlled oxygen <u>Ward</u>: NPR, Single room *In COPD in Type 2 failure and COVID/?COVID or decompensated Type 2 failure when NIV dependant (MND) AND pneumonia, likely poor prognosis and high risk of aerosolization.* *In unlikely case arrive in ED NIV dependant, aim for NPR to allow decision making/GOPC. Prognosis likely poor.*	Airborne

Notes

- *See Brewster and ANZICS Guideline – risk with HFNP and nebulisers is much lower than previously thought and HFNP likely to be an important bridge to ICU AND for some, maximum but potentially life saving therapy.
- Other aerosol generating procedures (AGP): Intubation, extubation, bronchoscopy, tracheostomy, CPR and ventilation on an intubated patient - Recommend review individual protocols. Require Airborne precautions.
- Although negative pressure room (NPR) may be ideal for reducing staff exposure, there is limited availability. Transmission has been documented to be via droplets and hence a single room with a shut door, and avoidance of entry with aerosol precautions is deemed acceptable. Larger bed bays, suitably spaced (>3m between patients) with drawn curtains or barriers and clear signs indicating entry only if wearing appropriate PPE aerosol precautions also acceptable if no other options available.

Resources

- Brewster DJ, Chrimes NC, Do TBD et al. Consensus statement: Safe Airway Society principles of airway management and tracheal intubation specific to the **COVID**-19 adult patient group. Med J Aust Published online: 16 March. https://www.mja.com.au/journal/online-first
- ANZICS **COVID**-19 Guidelines https://www.anzics.com.au/coronavirus-guidelines/
- British Thoracic Society https://www.brit-thoracic.org.uk/media/455098/osa-alliance-cpap-**COVID**-19-advice-20-3-20-v10.pdf
- Consensus statement on the safe use of respiratory therapy to minimise aerosolisation of **COVID**-19. Australasian Sleep Association (Personal communication Dr S Mukherjee).
- Clinical Guidelines for the management of **COVID**-19 in Australasian Emergency Departments Ver 1. 26 March 2020. https://acem.org.au/getmedia/78105c4b-5195-43f6-9c91-25dda5604eaf/Clinical-Guidelines-for-the-management-of-**COVID**-19-in-Australasian-emergency-departments

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