Aerosol generating respiratory therapies - Non-invasive ventilation (NIV)

Endorsed by Queensland Statewide Respiratory Clinical Network

Non-invasive ventilation (Continuous Positive Airway Pressure/bi-level ventilation) generates a high level of aerosolised droplets that spread widely, and its use has been shown to increase the risk of transmission of respiratory viruses to healthcare workers.

Please make sure that non-invasive ventilation is the most appropriate intervention for your patient with acute respiratory illness (including COVID-19).

The purpose of this document is to provide guidance and support to clinicians that are required to perform non-invasive ventilation (NIV).

Remember

- Use of NIV should not delay intubation and mechanical ventilation of hypoxic patients with suspected or confirmed COVID-19 where urgent invasive ventilation is clinically indicated.
- Acute NIV remains appropriate treatment for decompensated respiratory failure associated with Chronic Obstructive Pulmonary Disease, neuromuscular disease, and sleep disordered breathing. Appropriate infection control measures are required as these patients may be co-infected with COVID-19 or seasonal influenza.
- When NIV is considered appropriate:
    - clear documentation is required in each case on the ceiling of treatment (ward based or Intensive Care Unit) and criteria for escalation and/or de-escalation of therapy including end of life planning.
    - For patients with COVID-19 receiving respiratory support, use single and negative pressure rooms wherever possible. If none are available, other alternatives are single rooms, or shared ward spaces with cohorting of confirmed COVID-19 patients. Ensure contact, droplet and airborne precautions are in place. Healthcare workers should be fully vaccinated and wearing fit-tested N95 masks. The additional relative risk of infection to healthcare workers associated with specific oxygen therapies and respiratory support is uncertain but is thought to add minimal additional risk in an environment where transmission of infection with COVID-19 is already high. Australian guidelines for the clinical care of people with COVID-19 (magicapp.org).
    - select interfaces and circuits to minimise aerosolisation, including use of non-vented masks and use of bacterial filters on the expiratory vent of the circuit.
- Any room which has had an aerosol generating procedure in it requires airborne precautions for a minimum of 30 minutes after. The exact time depends on air changes per hour. See the Queensland Health Interim infection prevention and control guidelines for the management of COVID-19 in healthcare settings.

Acknowledgment to ACI for their support

Version Control

Version	Date	Author	Changes	Date approved by CSRG	Proposed Review Date
0.1	12/03/2020	Statewide Respiratory Clinical Network Steering committee	New document		
1.0	27/10/2021	Changes made and endorsed by the Statewide Respiratory Steering Committee	Updated content. Format changes.		27 April 2022
2.0	9/12/2021	Statewide Respiratory Clinical Network Steering committee	Endorsed by the COVID System Response Group (CSRG) pending changes below.		27 April 2022
2.1	13/12/2021	Changes made and endorsed by the Statewide Respiratory Steering Committee	Purpose statement added and incorporated feedback from COVID Response Group (CSRG). Approved by the CSRG.	22/12/2021	27 April 2022
2.2	12/01/2022	Statewide Respiratory Clinical Network	Changes (highlighted) to align with Australian Guidelines for the clinical care of people with COVID-19 – Respiratory Management.	25/01/2022	27 April 2022