

# Aerosol generating respiratory therapies

## Non-invasive ventilation (NIV)



**Non-invasive ventilation (CPAP/BIPAP) increases the dispersal of aerosolised droplets. Its use has been shown to increase the risk of transmission of respiratory viruses to healthcare workers.**

**Please remember the points below when non-invasive ventilation is the most appropriate treatment for your patient when they are unwell with an acute respiratory viral illness (including COVID-19).**

- NIV is of limited value in the context of hypoxic respiratory failure associated with pneumonia. Overseas experience and local guidelines suggest a very limited role in the setting of COVID-19.
- Its use in the treatment and management of patients with COVID-19 can be reviewed in the [Australian guidelines for the clinical care of people with COVID-19](#).
- There remains strong evidence for using NIV as a treatment for hypercapnic respiratory failure in the context of COPD, acute decompensation in neuromuscular disease, chest wall disorders and obesity hypoventilation. NIV should be used in these patients if clinically indicated. For all these indications, a time window exists that should be adequate to ensure that NIV is commenced in the safest possible environment. In these scenarios, there are steps that can be taken to reduce the risk of cross-infection in suspected and confirmed respiratory viral infection, such as negative pressure isolation, contact, droplet and airborne precautions, and the use of a viral filter between the expiratory port and a non-vented NIV mask.
- Before starting NIV, the presence of an advance care plan or directive should be determined. In conjunction with this, if present, a resuscitation plan should be created in the light of the clinical context.
- When NIV is an appropriate therapy for a patient with suspected or confirmed respiratory viral illness, including COVID-19, the optimal location is a negative pressure room or if not available in a single room. Both settings require institution of contact, droplet and airborne precautions. If there is no single room available and NIV could only be delivered in an open ward setting, the benefits to that patient would have to be balanced against the risks of virus transmission to other patients, healthcare workers and visitors.
- Any room which has had an aerosol generating procedure in it requires airborne precautions for a minimum of 30 minutes post procedure. The exact time depends on air changes per hour. See [Infection Prevention and Control Novel Coronavirus 2019 \(2019-nCoV\) – Hospital setting](#) from the Clinical Excellence commission.
- Local sites should also consider local COVID-19 screening questions and processes in the context of [local prevalence data](#) when using NIV.

| Document information      |   |
|---------------------------|---|
| Version number            | 4   |
| Original publication date | 25 March 2020   |
| Developed by              | Professor Peter Wark, Dr Matthew Peters, Dr Paul Hamor, Nick Yates (NP), John Harrington (CNC), Helen Kulas (ACI Respiratory Network Manager)   |
| Consultation              | ACI Respiratory Network, ACI Evidence Generation and Dissemination Team, Ministry of Health (Ron Manning), ICU (Nhi Nguyen, Mark Nicholls), ED (Michael Golding, Clare Skinner), Infection Control (Kathy Dempsey, James Mackie), Paediatrics (Matthew O'Meara), Anaesthetics (David D'Silva) |
| Endorsed by               | Nigel Lyons   |
| Review date               | Reviewed without changes 21 December 2020   |
| Reviewed by               | Respiratory COVID-19 Community of Practice Expert Reference Working Group   |
| For use by                | All NSW Health staff coming in to contact with patients receiving these therapies and all NSW Health COVID-19 Communities of Practice   |