

Use of acute NIV in patients hospitalised with suspected or confirmed COVID-19 infection

In preparation for the peak in demand for acute non-invasive ventilation (NIV), outlined below are both strategic and operational guidance **DELAY PHASE**. This guidance is relevant for all clinicians involved in delivering acute NIV services, including ward-based care.

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Clinical aspects – to follow

Technical aspects

Masks

- Well-fitting oronasal facemasks, masks over the total face, or helmets should produce least droplet dissemination.
- Vented masks could worsen contamination of the environment
- Any patient on acute NIV should be managed with a non-vented mask and an exhalation port in the circuit.
- Ensure that the ventilator mode employed supports the use of non-vented masks and exhalation ports.
- Sequence of actions: NIV mask on → ventilator on; ventilator off → NIV mask off.

Filters

- A viral/bacterial filter should be placed in the circuit between the mask and the exhalation port (Figure below).
- This viral/bacterial filter can replace any filter at the machine end of the circuit.
- Viral/bacterial filters should ideally be changed every 24 hours or sooner. (There is a risk that they will become wet due to exhaled gas and that this may increase resistance to flow.)
- An external humidifier must not be used.
- Blocked filters can be mistaken for clinical deterioration; this issue is remedied by changing filters.

Oxygen

- Oxygen can be entrained into the circuit and should be done so at the patient end (Figure below)

Figure: Example of acute NIV set-up with non-vented mask and viral filter



Well-fitting full face mask



Filter



Exhalation port



For Patients already managed under home ventilation services who are admitted to hospital with suspected or confirmed COVID-19 infection

- Check if their usual mask is a vented or non-vented mask.
 - Vented masks should be changed for a non-vented mask and an exhalation port put into the circuit.
- A viral/bacterial filter should be placed in between the mask and the exhalation port in exactly the same way as for acute NIV.
- For any patient who has a humidifier in the community, the humidifier should be removed from the circuit.
- Patients remaining at home should continue with their usual method of ventilation.
- Contact Home Ventilation service for further advice as needed.

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