



BTS/ICS Guidance on Respiratory care in patients with Acute Hypoxaemic Respiratory Failure associated with COVID-19

This guidance refers to the use of Continuous Positive Airway Pressure (CPAP), High-Flow Nasal Oxygen (HFNO) and Non Invasive Ventilation (NIV) therapy for patients with acute hypoxaemic respiratory failure secondary to COVID-19. Patients with COVID-19 may be looked after on general wards, respiratory support units (RSU), critical care units and this document offers guidance for which patients could be looked after in non-critical care settings and what criteria should be used for escalation to areas with higher acuity treatments. (See Appendix 1 COVID-19 Respiratory Support Pathway flowchart)

The trigger for consideration for escalation of patients on general wards to an RSU should be the inability to maintain oxygen saturations $\geq 94\%$ on an inspired oxygen $< 40\%$. Careful considerations to the suitability of escalation to RSU should be made at senior level (ST3+ and after discussion with the consultant overseeing the patient's care) and following consultation with respiratory and/or critical care medicine.

Specifications for Respiratory Support Units will be published by BTS and ICS in 2021. Units should meet the following criteria.

Structures

- x Appropriate Infection Control Precautions should be in place including: Isolation facilities where required, PPE appropriate for AGP, CPAP/NIV circuit set up as per BTS guidance.
- x Oxygen utilisation—Liaison with medical gas committee or oxygen engineering team is required before establishing an RSU.
- x Multiple open respiratory circuits may increase ambient oxygen concentrations. Consideration should be given to a oxygen concentrations, ventilation, humidity and fire risk.

Treatment

A locally developed acute CPAP/HFNO/NIV protocol (based on published best practice guidance) should be uniformly applied across all areas.

Patients treated with CPAP/HFNO/NIV will benefit from a team approach using the collective expertise gained by respiratory and critical care multidisciplinary teams during the first wave in March 2020.

Staffing

A clinical lead for each of respiratory medicine, nursing and physiotherapy should be identified.

All staff should have appropriate experience and demonstrable competence in the management of invasive respiratory support.

Staffing ratios should reflect the acuity of support required and where patients are dependent upon HFNO to End Tidal CO₂ (ETCO₂) monitoring to help identify machine disconnection in CPAP/NIV dependent patients but ETCO₂ must not be used to estimate values or trends in arterial CO₂.

Escalation

Establish a treatment escalation plan admission.

Daily liaison between ward teams and critical care should be normal practice with decisions regarding escalation to critical care being made at senior level (ST3+ and with discussion with consultant overseeing the patient's care) and following consultation with critical care medicine.

Regular assessment of success/failure of non-invasive respiratory support should be undertaken. Signs of CPAP/HFNO/NIV failure include limited

