

WAHT COVID Pneumonitis CPAP Guideline

Indications for CPAP: • ceiling of treatment • trial to avoid intubation • as a holding measure prior to intubation

- All patients need a clear **Treatment Escalation Plans and RESPECT form** completed
- CPAP must only take place in a **designated COVID CPAP cohort area** attended by staff in PPE appropriate for Aerosol Generating Procedures.
- The patient must be able to tolerate the mask/hood for CPAP to be considered
- If the patient is a candidate for IPPV but obtunded or unable to tolerate CPAP, refer to ICU

Escalate oxygen therapy for T1RF, Aim SpO₂ >94% (via Venturi or non-rebreathe mask (NRM)):

Ensure dexamethasone 6mg po/iv prescribed and consent to RECOVERY trial

RR ≥ 20bpm with SpO₂ <94% on 35% FiO₂ → Escalate to FiO₂ 40%

RR ≥ 20bpm with SpO₂ ≤94% on FiO₂ 40% → Escalate to FiO₂ 60% **and Resp or ITU Referral[‡]**

RR ≥ 25bpm with SpO₂ ≤94% on FiO₂ 60% → Escalate to 10 - 15L/min O₂ via NRM

RR ≥ 30bpm with SpO₂ ≤94% on 15L/min NRM, PaO₂ <8 kPa → Inform ICU* if candidate for IPPV

Out of hours: Only ICU SpR or consultant can arrange transfer to CPAP bed

[‡]Contact details: Respiratory Team 9am – 5pm; ITU SpR 5pm – 9am (out of hours):

WRH: ANP bleep 189 ; SpR bleep 179/129; ARU Resp consultant (Mon to Fri 9-5 and Sat 9-2): ext 39123;

- out of hours or weekend ICU SpR bleep 702

AGH: respiratory consultant on ward 1 (Mon-Fri 9-5) ext 43855/ 44036

- out of hours or weekend medical registrar and ICU SpR bleep 0933

	CPAP Criteria and Guidance
Indications:	Type 1 Respiratory Failure; Hypoxia without Hypercapnia with covid positive pneumonitis
SpO₂ target:	94 - 96% (see box above)
Trigger for escalation to CPAP:	<p>Consider CPAP if: RR > 20 bpm with SpO₂ < 94% on FiO₂ 40%; perform ABG</p> <ul style="list-style-type: none"> • Senior (SpR or above) medical clinical review to assess suitability & complete RESPECT form: See decision guide: Ethical Clinical decision making in the COVID 19 pandemic • Patients unlikely to tolerate or benefit: Delirium, Confusion or dementia with loss of mental capacity to understand treatment, Unable to sit up and on edge of bed unaided, GCS <15, Systolic BP <90, > 2 acute organ failures, Significant comorbidities, Unable to tolerate well-fitted mask or hood, claustrophobia. • Contact respiratory (day) or ICU (night) to discuss CPAP trial Admission to CPAP bed can only be arranged by a senior respiratory or ITU doctor in person • If a patient who is for full escalation to ITU deteriorates (Sats ≤ 92% on 15L NRM, RR ≥ 30bpm) while waiting for a CPAP bed, call ITU StR.
Initiation:	CPAP: 10 cmH ₂ O; 60-100% oxygen. IL6 inhibitor (eg Tocilizumab) prescribed at CPAP initiation.
CPAP setup:	Only on a designated COVID CPAP ward with admission arranged by Resp or ITU StR or Consultant
Monitoring:	1 hourly: SpO ₂ , HR, work of breathing (resp rate); Avoid unnecessary ABGs 2 hourly: Proning / side-lying encouraged
Escalation:	<p>Titrate CPAP: 10 -12 cmH₂O; 60-100% oxygen</p> <p>Escalate to ICU if IPPV candidate, bleep ICU</p> <ul style="list-style-type: none"> • Excessive work of breathing; RR >30 on <ul style="list-style-type: none"> • CPAP 10 cmH₂O, FiO₂ 60%, not maintaining SpO₂ > 94%, • PaO₂ ≤ 8.0kPa • Develops type 2 respiratory failure on CPAP • Obtunded or not tolerating CPAP <u>and</u> for ICU • High flow nasal oxygen only to be used as a bridge to ICU; for CPAP breaks or proning
Weaning:	Conventional oxygen weaning ; aim to maintain SpO ₂ 94 – 96% (if for palliation SpO ₂ 88-92%) CPAP breaks using 15L/min O ₂ NRM; wean CPAP once FiO ₂ off CPAP ≤40%
Failed Trial and not for ITU:	<p>Consider low dose opioids or benzodiazepines to reduce sensation of breathlessness</p> <p>Consider syringe driver for anxiety</p> <p>If develops type 2 respiratory failure while on CPAP, not for BiPAP if COVID pneumonitis is main issue</p> <p>If end of life; ensure EOL care commenced, anticipatory medicine given and quick oxygen wean</p>

Location of respiratory support during the COVID 19 pandemic

1/. CPAP for COVID pneumonitis with type 1 respiratory failure

CPAP for COVID may be initiated in a number of designated areas run by the ITU and respiratory teams. These currently include Aconbury 2 ITU, AGH ITU, Cedar unit, WRH ARU, AGH wards 1 and 2

Appropriate patient selection (also see WHAT escalation of respiratory support in COVID guide)

Patients unlikely to tolerate and benefit from ward based CPAP:

- Delirium
- Confusion or dementia with loss of mental capacity to understand CPAP treatment and decisions
- Unable to sit up and on edge of bed unaided
- GCS <15
- Systolic BP<90
- > 2 acute organ failures
- Significant comorbidities making CPAP futile

2/. Exacerbation of underlying respiratory disease in patients known to the respiratory team

- At WRH, admit to green ARU bed after respiratory review if not clinically COVID, does not need NIV and needs inpatient specialty respiratory care.
- AT AGH, refer to respiratory team for review on green medical ward

3/. Acute hypercapnic Type 2 respiratory failure requiring BiPAP

- Delivered on ARU/ Ward 1 after a rapid COVID swab
- BiPAP ONLY INDICATED in patients with evidence based underlying lung disease (COPD, Obesity related, chest wall deformity, home ventilation)
- Not appropriate if COVID pneumonitis with severe hypoxia is the primary problem
- Ensure maximal medical management (As per NIV WHAT-004 guidance)
- **NOT indicated if T2RF develops following T1RF (tiring patient)**
 - If for IPPV inform ICU
 - If not for escalation, consider palliation

Home CPAP: Home circuits (masks and tubing) not to be used.

If purely for obstructive sleep apnoea (OSA) may not be required during admission.

Contact respiratory ward or Respiratory Nurse Specialist for advice

Only to be used with hospital issued mask and tubing. Ideally delivered in negative pressure environment in respiratory wards but if no capacity, side room on medical ward (appropriate to COVID pathway or non COVID pathway).

Home NIV/BiPAP: Home circuits (masks and tubing) not to be used.

Contact respiratory ward or Respiratory Nurse Specialist for advice.

Use home machine but with **hospital issued mask and tubing**. Ideally in negative pressure environment in respiratory wards but if no capacity, side room on medical ward (appropriate to COVID pathway or non COVID pathway).

Patients with COPD on home NIV are usually at their ceiling of care (discuss early palliative discharge home with respiratory team)

Humidification: For any patient who has a humidifier in the community, the humidifier should be removed from the circuit.

NIV: non-invasive ventilation CPAP: continuous positive pressure; BiPAP: bilevel positive airway pressure; RF: respiratory failure; RR: respiratory rate; SpO2: peripheral oxygen saturations; ICU: intensive Care Unit; IPAP: inspiratory positive airway pressure; EPAP: expiratory positive airway pressure