

COVID-19 Adult Respiratory Support Recommendations

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Oxygen Therapy

- Titrate nasal cannula to maintain SpO₂ > 92%.
- **May trial non-invasive ventilation (NIV)**, (e.g. CPAP/BIPAP), high flow nasal cannula, or other high flow oxygen delivery devices (e.g. Venturi, face mask, Misty Ox, etc.). **Frequently reassess efficacy**
- **May Use** EZPAP or Intrapulmonary Percussive Ventilation (IPV) **with appropriate PPE**
- **Non-Invasive ventilation as outlined is aerosol generating and should be administered in an AIIR* room with appropriate PPE being worn**

*AIIR = Airborne Infection Isolation Room

Criteria for Mechanical Ventilation (Clinical Judgement Should Prevail)

Severe COVID-related pneumonia associated with progressive clinical deterioration or expected to deteriorate.

Other clinical criteria to consider:

- Infiltrates on CXR or CT scan on admission or the rapid progression of infiltrates
- SpO₂ < 90% with supplement O₂ or NIV
- RR > 30 min
- Abdominal paradox/use of accessory muscles
- pH < 7.3 with or without hypercapnia (PaCO₂ > 45 mmHg), OR
- Hemodynamic instability manifested by: hypotension (BP < 90/60, MAP < 65 mmHg) unresponsive to fluid bolus administration (30cc/kg) or need to initiate vasopressors.

Bronchoscopy

- **MINIMIZE use of** bronchoscopic assessment and therapy in order to mitigate risk to the team.
- Endotracheal aspirates provide adequate samples.
- If bronchoscopy is required full airborne precautions are mandated.
- **Should be performed in an AIIR with appropriate PPE for an aerosol generating procedure**
- Bronchoscopy team: MD, RT, and RN

Endotracheal Intubation (ETI) Procedure (ETI is an aerosol generating procedure)

Avoid delayed/emergent intubation. *Do it sooner rather than later.* A controlled/elective intubation is less risky for the team and the patient.

- Perform in airborne infection isolation room (AIIR). If AIIR is not available, contact house supervisor.
- Most experienced provider present should perform ETI
- Avoid awake fiberoptic intubation unless absolutely required.
- Team = MD, RT, and RN. Provider outside of room to pass equipment and monitor for PPE breaches.
- Prepare as much equipment/medication outside of the room as possible.
- Difficult airway supplies should be immediately accessible but avoid unnecessary contamination.
- **PPE: Align with hospital guideline for aerosol generating procedures in COVID-19 patients**
- Video laryngoscopy is preferred to reduce operator proximity to the patient.
- **NO CPR** during intubation attempt
- Place a bacterial/viral filter between the bag and the mask.
- Provide prolonged preoxygenation with well sealed BVM (continue nasal cannula flow).
- Perform rapid sequence induction (**use paralysis**). Avoid mask ventilation if possible. If required, use small tidal volumes.
- Inflate ETT cuff immediately, place bacterial viral filter on ETT, then CO₂ detector, and then ventilate to confirm exhaled CO₂, then connect patient to ventilator.
- Consider LMA-like supraglottic airway after failed attempts with plan to intubate through device.
- Consider performing procedures (e.g.; Enteral feeding access, central line, arterial line, Foley, rectal tube) after ETI to limit additional exposures.

Mechanical Ventilation and Oxygenation Support

- Initiate continuous sedation and analgesia infusion immediately
- Initiate mechanical ventilation in Volume-Assist Control (AC) mode: Start with TV 8 ml/kg and decrease to 6 ml/kg IBW; Begin with PEEP 8-10 cm H₂O and increase to optimize SpO₂ > 92% at lowest possible FiO₂; Begin with a RR that matches the patient's pre-ETI RR & adjust using ABG
- Use ARDS **lung protective** approach to ventilator management: Low TV; titrate PEEP to lowest FiO₂/best tidal compliance; maintain Pplat < 30 cm H₂O; permissive hypercapnia
- **Minimize use of** aerosol/nebulized therapies (favor MDI if needed), chest physiotherapy, bronchoscopy, Bag-valve-mask (BVM) ventilation – appropriate PPE must be worn
- Use dual limb heated wire circuits (change only when needed).
- Ensure appropriate use of bacterial viral filter on ventilator and resuscitation bag
- Conservative fluid mgmt.; minimize daily CXRs; CT only to exclude alternative diagnosis; Use POCUS for lung and pleura assessments
- **For refractory hypoxemia, consider:** APRV, Paralysis, Prone Ventilation; Inhaled Nitric Oxide.
- Minimize disconnections; consider clamping ETT when disconnecting (if patient not breathing)