

### Possible indications for ETI (advanced airway) in Covid-19 patients

- SpO<sub>2</sub> remains <90% on FiO<sub>2</sub> of ≥60% and awake proning is contraindicated or unsuccessful
- Cardiogenic or Septic shock
- Hypercapnia with ETCO<sub>2</sub> >45 **OR** acidosis (ETCO<sub>2</sub> <31), ventilatory failure and labored work of breathing (WOB)
- Altered mental status so patient cannot protect airway

### Identify Roles and Responsibilities

- **Optimize 1<sup>st</sup> attempt success:** Use best/most qualified intubator with at least 1 (preferably 2) assistants
  - **Assistant(s)** must function within scope of practice: Help with PreOx; IV/IO, drugs; monitoring ECG/VS; opening needed supplies. Prepare and practice for worst case scenario: 1 Paramedic and 1 EMT
  - **PPE Intubator:** Isolation gown (or droplet/splash resistant equivalent), splash-resistant N95 mask (check seal) or put surgical mask over N-95; goggles that surround eyes with facial contact or full face shield (preferred); hair cover (if available). Wear shoes you can disinfect.
  - **PPE Assistants:** Contact/droplet + Airborne Precautions: Add N95 mask
1. **IMC:** SpO<sub>2</sub>, NC ETCO<sub>2</sub>: evaluate before and after airway intervention; confirm patent IV/IO; monitor ECG  
Anecdotal: Oximetry looks terrible before pts appear dyspneic. Monitor carefully!
  2. **Prepare patient:** Optimize position; If SBP > 100: Elevate head of stretcher 15° - 30°  
Gains alveolar recruitment while reducing risk of aspiration
  3. **Preoxygenate 3 minutes:**
    - **Start pre-ox early** so ETI is done under controlled circumstance rather than a crisis
    - **Option 1:** Adequate rate/depth/effort: O<sub>2</sub> 15 L/ETCO<sub>2</sub> NC; NRM mask (no O<sub>2</sub>) over NC to capture droplets.
    - **Option 2 – Inadequate rate/depth/effort/apneic/ventilatory failure/shock/airway impaired:**  
Manual airway maneuver; OPA/NPA; O<sub>2</sub> 15 L/ETCO<sub>2</sub> NC with BVM mask held over NC to face with 2 person technique to minimize air leaks  
Required add on: High-Efficiency Particulate Air (**HEPA**) filter on mask or bag (varies by type); 10 BPM
  4. **Prepare equipment and rescuers**
    - Create **airway plan for all ill pts with severe dyspnea**. What are you prepared to do to secure this airway?
    - Stage equipment kits but **do not open until needed<sup>2</sup>** - attempt in this order unless contraindicated
      - Option 1 – Standard ETI supplies; suction
      - Option 2 – I-Gels; suction available to assistant; ready to go, not opened.
      - Option 3 – Circ kit; suction available, not opened. Use "Scalpel Finger Bougie" technique

<sup>2</sup>**Create airway kit supplies and store in slider bags;** do same for septic shock IVF/drug + IV tubing  
Minimize opening stock to limited # of items to avoid contamination from contact or aerosolization  
Intubator: Do not reach into bags or drawers after starting procedure; common source of cross contamination  
Assistant can reach into drug/airway bag prn and pass to intubator without contaminating other supplies.
  5. **Medications**
    - **Sedation – KETAMINE IVP** - Use **simplified dosing during crisis**
      - 100 kg (220 lbs) or less: 100 mg
      - Over 100 kg (220 lbs): 150 mg
    - **Plan on hypotension in ill patients:** IVF limitations and **NOREPINEPHRINE** IVPB per Covid-19 SOP
  6. **Tube insertion/confirmation**
    - Skip all assessments (Mallampati, LEMON, etc.) that will expose you to aerosolization
    - Approach all ETIs as a difficult tube; use videolaryngoscopy, curved channeled blade, preloaded bougie in ETT
    - Anticipate rapid desaturation during procedure; keep O<sub>2</sub> 15 L/NC running
    - **If CPR in progress:** Pause chest compressions < 10 sec while passing tube to minimize aerosolization
    - Visualize black line of ETT at level of cords to avoid auscultating for depth before HEPA filter in place
    - Inflate cuff; place **HEPA filter** on ETT or BVM (varies by device) prior to ventilating
    - Confirm tube placement with ETCO<sub>2</sub>, not deep auscultation
    - Auscultate over anterior neck to detect airflow past balloon cuff; **ensure minimal leak** to ↓ risk of aerosolization
  7. **Post Intubation**
    - **Sedation:** Preference: Ketamine **pain dose**/Advanced Airway SOP; avoid midazolam due to risk for hypotension
    - **When intubator doffs PPE,** use hand sanitizer on neck and ears if not covered by PPE
    - Discard disposables per policy before leaving space