

**Penn Emergency Medicine**  
**Respiratory Distress/HASTE During COVID Pandemic Guideline 3-19-20**

*Rev history: 3/19 draft created by John Greenwood, aligned with UPHS CCC intubation recommendations (draft 3/3/20). Revisions by Zaf Qasim 3/19.*

Introduction: Acute respiratory distress is a common patient presentation to the ED. With an increasing incidence of community COVID-19, we must prepare to manage undifferentiated respiratory distress while ensuring safety of providers. Assumption **must** be that patient is positive for COVID. No specific threshold is specified to allow for clinical judgment. Balance staff safety, resource availability, and standard of care for acute respiratory failure.

#### **Rescue Therapies**

1. Initiate nasal cannula to achieve SpO<sub>2</sub> > 92%
2. If patient needs further oxygen support, transition to face mask non-rebreather and plan for endotracheal intubation.
3. Advanced non-invasive therapies: Only consider for milder cases, with a limited trial of < 1 hour.
4. Bronchodilators: Prioritize MDI delivery over nebulizer therapy to avoid aerosolization if available.

#### **Protection & Personnel**

1. Patient should be initially placed in airborne protection room, if unavailable may use Resus Bay
2. Intubation should be performed by **senior level resident** or **attending** to minimize number of attempts.
3. **HOT zone** (< 6 ft from patient): All airway personnel should don PPE from pre-made "Airway PPE" pack. Intubator and respiratory therapist should preferably wear PAPR, or at a minimum N95 mask plus gown, gloves, hairnet, and eye protection for every intubation.
4. **COLD zone** (> 6 ft from patient): Standard ED PPE

#### **Intubation Procedure**

1. Standard monitoring, IV access, instruments, drugs, ventilator and suction should be checked.
2. **Preoxygenation:** 5 minutes of preoxygenation 100% O<sub>2</sub> by non-rebreather mask
  - a. Bag-valve mask should include hydrophobic filter between mask and bag/ventilator.
  - b. AVOID manual ventilation of patient's lungs and potential aerosolization of virus from airways.
3. **Medications:** Standard RSI medications should be used at clinician's discretion.
  - a. RSI may need to be modified, if patient has very high alveolar-arterial gradient and is unable to tolerate 30 seconds of apnea or has a contraindication to succinylcholine.
  - b. Consider intubation with patient's head of bed elevated, if possible, to avoid de-recruitment.
4. **Equipment:** Video laryngoscopy is *preferred* over direct laryngoscopy to avoid patient respiratory droplets.
  - a. Adjuncts for difficult intubation should be readily available including bougie and LMA.
  - b. If LMA in place, consider redosing paralytic and exchanging ETT over fiberoptic scope.
5. **Confirm:**
  - a. Intubate and confirm correct position of endotracheal tube with Et CO<sub>2</sub> followed by CXR.
  - b. Identify difficult airways appropriately
6. **Clean:** All airway equipment must be decontaminated according to appropriate hospital policies.

#### **Mechanical Ventilation and General Post-Intubation Care**

1. Patients will usually have ARDS, select Low Stretch Protocol in mechanical ventilation order set.
2. **Tidal Volume:** Start with 6 cc/kg IBW, and titrate to achieve a Pplat < 30 mmHg
3. **PEEP:** Early reports suggest moderate PEEP to be beneficial in improving oxygenation
4. **FiO<sub>2</sub>:** Titrate to achieve SpO<sub>2</sub> > 92% unless contraindicated
5. **Sedation & Analgesia:** Consider fentanyl, propofol, or hydromorphone. Lorazepam is an alternative, but at doses >1mg/kg/day propylene glycol toxicity should be considered.
6. Check ABG 30-minutes post-intubation
7. Consider early paralysis for ventilator dyssynchrony or P:F < 150 in PEEP optimized patients.