

# COVID-19 INTUBATION

COVID-19 may cause profound hypoxemia with relatively little respiratory distress - increasing O<sub>2</sub> requirements should prompt **early** consideration of intubation to prevent high risk exposure to staff given the degree of preparation required.

## Airway Management Principles:

- Intubation represents a high risk for transmission to healthcare workers
- Priority is not to contaminate clinical staff while maintaining adequate patient oxygenation
- Meticulous donning & doffing of airborne PPE precautions
- Most experienced staff to perform
- Limit people & equipment in room
- Limit attempts to 3, unless there is an obvious way to optimize a further attempt
- Consider LMA if able to oxygenate, but not intubate - wait for help
- Consider cricothyrotomy if unable to oxygenate & ventilate

## Target respiratory support to level of hypoxia and/or respiratory distress

NOTE: oxygen flows >6L/min require airborne precautions, so use *lowest* rate possible

### MILD

- SpO<sub>2</sub> target ≥88%
- Nasal prongs covered with surgical mask
- Intubation unlikely

### MODERATE

- SpO<sub>2</sub> target ≥88%
- Non-rebreather mask with surgical mask
- Intubation unlikely in first 4 hours of arrival
- Progress early to intubation if deterioration

### SEVERE

- Early intubation as soon as it appears necessary

## PRE-PROCEDURE

- Progressively rising FiO<sub>2</sub> requirements**
  - SpO<sub>2</sub> ≤88-90% on 6-8L/min
  - FiO<sub>2</sub> >50%
  - Severe respiratory distress
- Patient has a reasonable probability to benefit from intubation**
- Goals of Care designation R1 or R2**
- RAAPID has confirmed access to bed with a ventilator (1-800-661-1700)**
- Recruit intubation team (MD, RN / EMS assist, RN scout / scribe)**

## PERSONAL PROTECTIVE EQUIPMENT (PPE)

- Standard AIRBORNE precautions indicated**
  - N95 mask or powered air purifying respirator (PAPR)
  - Face shield
  - Gloves
  - Gown
- Consider (if available)**
  - Goggles that seal to face
  - Disposable cap to cover hair
  - Disposable hood to cover neck
  - Two pairs of gloves, under-layer ideally extended-cuff surgical glove
  - Bunny suite for complete body cover

## PREPARATION

- Suction** between mattress & bed
- BVM with viral filter, PEEP valve & ETCO<sub>2</sub>** attached
- Tracheal tubes** x2, stylet, 10mL syringe, lube, ETT securing device
- Bougie**
- Oropharyngeal airway**
- Video laryngoscope & blades** to maximize space between airway & provider
- NG tube**
- Medications** - give all as IV push followed by NS flush
  - Ketamine 1.5mg/kg (IBW)** for induction
  - Rocuronium 1.5mg/kg (IBW)** for high-dose paralytic

### Anteroom

- Direct laryngoscope (curved Mac 3 or 4)** - check lights
- LMA** with appropriate size selected prior
- Surgical airway kit** (scalpel #10, 6.0 ETT, tracheal hook, curved hemostat, 1-0 suture)
- Norepinephrine infusion** prepared for potential hemodynamic compromise
- Crash cart**

## PROCEDURE

- Pre-oxygenation** x5min using BVM with two-hand seal - NO manual ventilations!  
Mask > Viral filter > ETCO2 > PEEP valve > BVM  
Do not use nasal prongs for apneic oxygenation
- Consider ketamine for hypoxic agitation to allow pre-oxygenation
- Ensure patient FULLY PARALYZED prior to inserting laryngoscope

## POST-INTUBATION

- Attach viral filter** immediately to ETT
- Inflate cuff** with 5-10mL air PRIOR to ventilation
- Confirm ETT placement** with waveform capnography & CXR (NO stethoscope!)  
ETT placement 2cm above carina  
Exclude pneumothorax
- Secure ETT tube**
- NG tube insertion**
- Continuous monitoring** of VS & GCS
- Manage hypotension** with normal saline 0.9% bolus +/- norepinephrine infusion
- Sedation maintenance**
- Isolate patient**
- Meticulous doffing** of PPE
- Check blood gas** approximately 30min post-intubation - targets:  
pH 7.35-7.45 / PaO2 60-90mmHg (arterial) / PaCO2 40mmHg (venous or arterial)



Left: mask, viral filter, PEEP valve, bag  
Above: NIV mask, viral filter (yellow), ETCO2 monitor (with oxygen source, pale blue), PEEP valve (red), ambu bag (with oxygen source)