

COVID-19

Recommendations for Airway Management of Suspected or Confirmed COVID-19

Definitions

- Aerosol generating procedures (AEGP) – include intubation, non-invasive positive pressure ventilation, nebulizer treatments, suctioning
- Personal protective equipment (PPE) recommended during AEGP: includes eye covering (goggles or eye shield), N95 mask or power air-purifying respirator (PAPR), fluid impermeable gown, and protective hair covers. The correct gown to be worn for intubation is a water resistant or other impermeable gown at your institution.
- Bag Valve Mask (BVM)
- Nonrebreather mask (NRB)
- Endotracheal Tube (ETT)

Prepare

- Whenever possible, the patient should be transferred to a negative pressure isolation room before AGEPs are initiated
- Assure appropriate PPE is available in different areas for airway management: for ED/Unit Providers; first responders who initiate CPR; Anesthesia providers
 - See Appendix 1 for suggested components of PPE/COVID bag
- Have all necessary equipment available in the room prior to starting the AEGP: This may involve including a checklist to avoid delay or aerosolized contamination.
 - See Appendix 2 for a suggested checklist

General Consideration

- Early controlled intubation is favored over intubating a rapidly deteriorating patient
- Practice appropriate hand hygiene before and after procedures and in the process of doffing PPE.
- Wear a fit-tested N95 respirator or PAPR, face protector with eye protection, gown and gloves
- **Utilize rapid sequence induction (RSI) when possible**

Personnel

- **The most experienced airway manager should perform intubation**
- Limit the number of healthcare workers in the room – RT, MD and optional assistant and RN is ideally, 3-4 people in full PPE is acceptable.
 - Have one additional team member in full PPE outside room or in the Anteroom to facilitate communication with others, enter the room, to assist with the resuscitation, and/or run for additional supplies.

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Preoxygenation:

- Providing at least five minutes of preoxygenation at flush-rate wall oxygen if feasible
- **Nonrebreather (NRB):** Apply NRB mask at flush-rate O₂ with tight fit tie. **NRB** is the preferred initial method of preoxygenation whenever possible.
- Use BVM at flush-rate O₂ with PEEP-Valve and high efficiency hydrophobic filter
 - Do not squeeze bag. Rather allow patient to spontaneously breath with good 2-handed mask seal.
- **Oxymask should be avoided**
- **Positive pressure ventilation with BVM prior to ETT placement should be avoided if possible**
 - If necessary:
 - Ensure high efficiency hydrophobic filter interposed between facemask and bag
 - Ensure tight seal
 - Use small tidal volumes
 - Consider the use of an LMA

PLEASE NOTE THE DIFFERENCE BETWEEN THE RIGHT AND WRONG FILTER IS MINIMAL :



Correct Filter



Incorrect Filter



NB: the Filta-guard will then go on the expiratory limb of the vent and a HEPA light can be placed on the inspiratory limb of vent

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Noninvasive positive pressure ventilation (NIV) for preoxygenation

- While use of this modality in management of hypoxemia in COVID and PUI patients is debatable and discouraged; for immediate preoxygenation, NIV can be used per institutional comfort.
- NIV should be applied via a standard two limb ICU vent with the correct viral filter on exp limb
This vent can then be connected to ETT upon intubation

High Flow Nasal Canula (HFNC)

- For the purpose of pre-oxygenation avoid HFNC as data suggests it adds little to NRB- mask at flush-rate O₂ and there is a risk for aerosolizing respiratory particles

Intubation

- Video assisted intubation is preferred to maximize distance of intubator from the patient
- Post intubation auscultation and ventilation should only be initiated once endotracheal balloon has been inflated and performed with a yellow stethoscope
- Ventilatory Procedures: See hypoxemic COVID patient protocol and existing ARDS protocol

Post-Intubation

- Ventilator can be in room either prior or after intubation as time permits. Prior preferred.
- Assure Filta Guard (correct filter) is on expiratory limb and HEPA light on inspiratory limb
- All recyclable/cleanable items should be placed into clear specimen bags prior to exit of room
- Discard all disposable items into red biohazard bags prior to exit of room
- Doff appropriately
- Leave larger Kelly/hemostat in COVID room. Recommend taping or clipping to the ventilator
- Proper disinfection of all remaining items with proper cleaning agent should be done

Transportation

- If intubation has been done remote to the ICU for the purpose of ICU care, bagging via ETT with Filta Guard can occur
- Assure larger hemostat or Kelly is available at location to avoid aerosolization during needed disconnects and connection to ventilator
- If intubated patient from an ED/ICU is to be transported to ICU/CT or IR
 - Assure need for trip/procedure
 - Avoid switch to the transport ventilator. Use patients vent.
- Travel with an extra Filta Guard filter and hemostat



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Appendix 1 Example PPE Bag contents

- 3 mask with shield – eye covering
- 3 N95 mask or power air-purifying respirator (PAPR)
- 2 Fluid impermeable gown
- 2 isolation gowns
- 3 Protective hair covers
- 1 Curved medium Kelly
- 1 Biohazard bag
- 1 Chuk

One larger hemostat/kelly is highly recommended – to temporarily clamp the airway during disconnect/connect





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Appendix 2 Example Checklist

Available prior to room entry:

- Welder-style mask with shield
- N95 mask
- Hair covers
- Surgical Gowns (intubator) and isolation Gowns
- Gloves
- Crash cart outside room

Ensure set up of:

- Suction
- Biohazard Bags
- NRB
- Two O2 connections (NRB and BVM/Vent)

Available in room:

- ETT and stylet
- ETCO2 detector
- Filta-guard filter
- Ambu-bag with PEEP valve
- ETT holder
- Video laryngoscope
- Video laryngoscope: one blade, one sheath (additional items brought into room that need to be trashed)
- Direct laryngoscope: Mac 3 and 4 blades and handle. Check light works
- Bougie
- Scaple+ 6.0 ETT
- Large Hemostat/Kelly
- Biohazard Bag



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