

Mount Sinai Hospital

COVID-19 Airway Management

Preparation:

1. Respiratory Therapy should prepare the ventilator in the room prior to intubation
2. Take only the things that you need with you into the room, but make sure to take everything you need
3. Prepare medications and intubation equipment outside of the patient's room
4. Suggested hypnotic agent and succinylcholine 1-1.5 mg/kg, or rocuronium 1.2 mg /kg
5. Verify intravenous access
6. See equipment checklist
7. Have a dedicated provider outside the room not in PPE to hand additional equipment/medications that may be needed and to come in to assist if needed

Airway Management:

- Patients can be started on nasal cannula and titrated up to non-rebreather with a goal of SpO₂ around 90%
- Preferable in a negative pressure room but if not available can use in a room with a door with all providers wearing N95 and face shield and a sign on the door
- A trial of Hiflow NC starting at 100% and titrate Flow for goal SpO₂ > 90%, surgical masks should be placed over HFNC
- CPAP/BiPAP with viral a filter also can be used, again starting at 5-10 EPAP and if needed can add 5 of IPAP while watching to make sure tidal volumes aren't greater than 6-8 cc/kg of IBW
- Decision to intubate these patients needs to be carefully weighted in regard to risk vs benefit
- While it is important to not expose patients to the risk and increased mortality of intubation it is also important not to wait too long before intubating the patient
- Indications for consideration of intubation:
 - worsening mental status
 - increasing hypercapnia not resolved with NIV
 - Refractory hypoxemia SpO₂ < 85% for extended periods of time without recovery on NIV
 - Increased WOB and tachypnea not responsive to NIV

Personnel:

1. The provider on the team with the most intubation experience should intubate the patient
2. The Difficult Airway Response plan should be activated in the event of a difficult airway following the standard protocol (Using the Emergency Page Operator 47000)
3. There should be only 3 people, ideally 2 people in the room during intubation
4. Designate a person outside the room to help with supplies if needed, and to monitor for breaches of PPE

Pre-intubation:

1. Ventilator should ideally be set up prior to intubation. (Preconnect inline suction and ETCO₂ if available)
2. Advance planning and clear communication are paramount
3. If patient is not in a single patient room, separate from other patients by 6 feet using curtains or screens

4. Set up and confirm ET/CO₂ waveform capnography is working
5. Minimize personnel
6. All equipment/medications that are needed should be setup and brought into the room prior to the start of the procedure, [see intubation check List](#)
7. Bring the small airway bundle into the room and have the large airway bundle or yellow box outside the room in case emergency equipment is needed.
8. Don PPE (gown, gloves, n95 respirator, eye protection, hair cover) outside of the patient's room

Intubation:

1. Prolonged pre-oxygenation for more than 5 minutes with 100% FiO₂ non-rebreather (caution: expiratory ports may aerosolize secretions)
2. Most experienced provider should intubate
3. Goal is Rapid Sequence Intubation (RSI)
4. Can use push dose pressors for post intubation hypotension if needed
5. If need to BMV, use 2 hands to provide good seal, place filter between mask and bag, and deliver small tidal volumes.
6. Do not use non-invasive ventilation if it can be avoided
7. Preferred use of video-laryngoscopy (using the device that the intubator is most experienced with and hand-held device if available) to increase the distance
8. Inflate cuff immediately after intubation
9. Doff outer gloves after intubation and prior to touching other equipment
10. Attach filter to ETT, then the rest of the system
11. Institute mechanical ventilation on volume control mode flowing the ARDS net titration. (Recommended Starting ventilator settings: VC AC, 100%, 6cc/kg IBW, RR 20, PEEP 15)
12. Use disposable stethoscope to auscultate from the patient's side
13. Avoid awake intubation (risk of aerosolizing the virus during topicalization and coughing)
14. Avoid supraglottic airway (LMA) ventilation, unless warranted for a difficult airway

Post-intubation:

1. Connect the patient to the ventilator and secure the tube
2. If need to disconnect the patient from the ventilator, put it in standby first
3. Dispose used and all disposable items that were brought into the room in trash in the room
4. Video Laryngoscope: thoroughly wipe all surfaces with peroxide wipe prior to doffing PPE making sure to fully saturate the surface following standard droplet cleaning protocols.
5. Doff PPE, ideally in anteroom if available (can remove all pieces including N95, and wash hands) but if anteroom is not present, then doff in patient's room (at least 6 feet away from the patient), except for the N95 mask, which is removed outside of the room. Hand hygiene.
6. Wipe Video Laryngoscope again with peroxide wipe after doffing PPE. After this it is ready for next patient use and can be returned to its storage location
7. Get blood gas 15-30 minutes after intubation and adjust the ventilator as needed

Suggested COVID-19 Airway “Go” Bag Contents, can be individualized for each department

1. HEPA filter
2. N95 masks x 4 (2 small, 2 regular)
3. Face shields x 2
4. Video laryngoscope, 3 blade x 2, 4 blade x 2
5. Stylet x 2
6. Isolation gown x 2
7. Blue gown x 2
8. Sterile gown x 1
9. Bouffant hat x 2
10. Sterile gloves: 6.0, 6.5, 7.0, 7.5
11. Biohazard bag x 1

Intubation Check List:

1. Working IV
2. BVM (\pm PEEP Valve) on Oxygen
3. Waveform Capnograph on BVM
4. Video Laryngoscope
5. Backup Laryngoscope
6. Small Airway Bundle (ET tube 7.0 and 7.5, ET tube stylet, 10 cc syringe, Tube holder)
7. Oral airway
8. Bougie
9. LMA sized for the patient
10. Suction
11. NRB for pre-oxygenation
12. Nasal Cannula for Apneic Oxygenation
13. Paralytic (succinylcholine 1-1.5 mg/kg or rocuronium 1.2 mg /kg)
14. Induction Agent (Suggest ketamine 1-2mg/kg or etomidate)
15. Flushes
16. Post intubation sedation (hydromorphone or midazolam) (setup on PCA or Pump)
17. Orogastric tube
18. Norepinephrine on pump only if needed
19. Bolus dose of phenylephrine