



**FACULTY OF MEDICINE
DEPARTMENT OF ANESTHESIOLOGY**

COVID-19 – OR INTUBATION PROTOCOL

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Process:

- Negative pressure OR will be designated for COVID-19 patients
- **Anesthesia preparation**
 - Trolley will be kept in anteroom clean
 - Wear airborne PPE in induction room as described in the covid-19 airway management protocol (tyvec, gown, double gloves, N95, protective surgical mask, face shield or goggles)
 - Prepare all required medications (anesthesia and emergency medications)
 - Take required airway equipment into the OR – KEEP trolley in anteroom. If additional medications are needed they will be placed by an outside provider/anesthesia therapist “runner” in induction room for you to retrieve after he leaves
 - Anesthesia machine should be covered at all time and cleaned with appropriate antiseptic wipes at the end of surgery
 - Make sure there is a high efficiency particulate air filter (HEPA) at the expiratory and inspiratory limbs of the circuit. BOTH the HEPA filter and soda lime must be changed after each operation
 - Insert a HEPA filter between the face mask and circuit too, before the capnography line to protect the capnography line and gas analyzer
 - Preferably change the D-fend and capnography line at the end of surgery
 - Have all the required airway equipment ready (including 2x2m plastic cover and or intubation box or negative pressure hood) prior to patient arrival, have a glidescope covered and ready for use
- **Induction of anesthesia**
 - Clear non-essential staff from the room
 - Preoxygenation for at least 5 min with 100% O₂, use low gas flows, use a two handed technique for optimal seal and reduction of viral spread
 - RSI will be performed, using propofol and paralysis (succinylcholine or rocuronium depending on the case and attending preference)
 - Rocuronium may be preferred to succinylcholine to avoid the potential for paralysis to wear off and the patient to cough if the intubation procedure is prolonged
 - Give 1.5 mg/kg lidocaine at induction and give opioid (if needed) after paralysis to avoid cough reflex
 - No ventilation
 - If positive mask ventilation is unavoidable, consider placing wet gauze on mouth and nose to reduce viral spreading.
 - When ready for intubation pause the fresh gas flow prior to removing the face mask of the patient’s face

- Glidescope used on 1st attempt
 - Once tube in, dispose the laryngoscope in the bag dedicated for contaminated equipment
 - Remove outer set of gloves to avoid contamination and put another set immediately (keep double gloves at all time)
 - Second provider inflates cuff, connects circuit, restarts gas flow ventilates and confirms tube placement with capnography
 - Avoid auscultation
 - If difficult airway and need to ventilate, use an oral airway and low tidal volume ventilation and ensure adequate mask seal (2 hand mask to provide a good seal) to minimize aerosolizing the secretions. Consider wet gauze.
 - If difficult airway, can't ventilate, can't intubate, try inserting an LMA or decide to wake up the patient
 - **If a disconnection in the circuit is needed, make sure it is done beyond the patient filter while the ventilator is put on standby/fresh gas flow paused (i.e. disconnection between both filters)
 - ** If CPR is being performed, ask to hold chest compressions while intubating to minimize aerosolization of the virus and room contamination
 - If patient is presenting intubated, to avoid aerosolization, the gas flow is turned off and the endotracheal tube clamped with forceps during switching of ventilators
 - A closed airway suction system is recommended to reduce viral aerosol production. If it is not available, keep the minimal but necessary number of suction using a non-closed suction system.
- **Emergence**
- Clear non-essential staff from the room
 - Consider lidocaine 1.5 mg/kg prior to extubation, and/or remifentanyl or dexmedetomidine
 - Consider extubating with the patient under a clear plastic sheet/intubation box or hood.
 - When ready for extubation, pause gas flow then deflate the cuff, remove ETT, apply the face mask and restart low gas flow.
 - Patients who do not require ICU care postoperatively are fully recovered in the OR itself by the recovery room nurse
 - ICU patients will be transported to and from the OR by a special Covid transport team
 - When the patient is ready for discharge, the route to the isolation ward or ICU is again cleared by security



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- At the end of the procedure, **discard** gloves, protective gown, protective surgical mask and goggles in OR, **discard** Tyvek suit and N95 in induction room. (refer to details in covid-19 airway management protocols)
- A minimum of one hour is planned between cases to allow OR staff to send the patient back to the ward, conduct thorough decontamination of all surfaces, screens, keyboard, cables, monitors, and anesthesia machine
- All unused items on the drug tray and airway trolley should be assumed to be contaminated and discarded
- All staff have to shower before resuming their regular duties

References

Please refer to the following link for demonstration:

<https://youtu.be/OF6dMhRvD8M>

PPE tutorial in 90s

https://youtu.be/agu79EUPe7U?list=PLAKISH_EKdL8eJYLjIYUv7Llejkn7WCuW

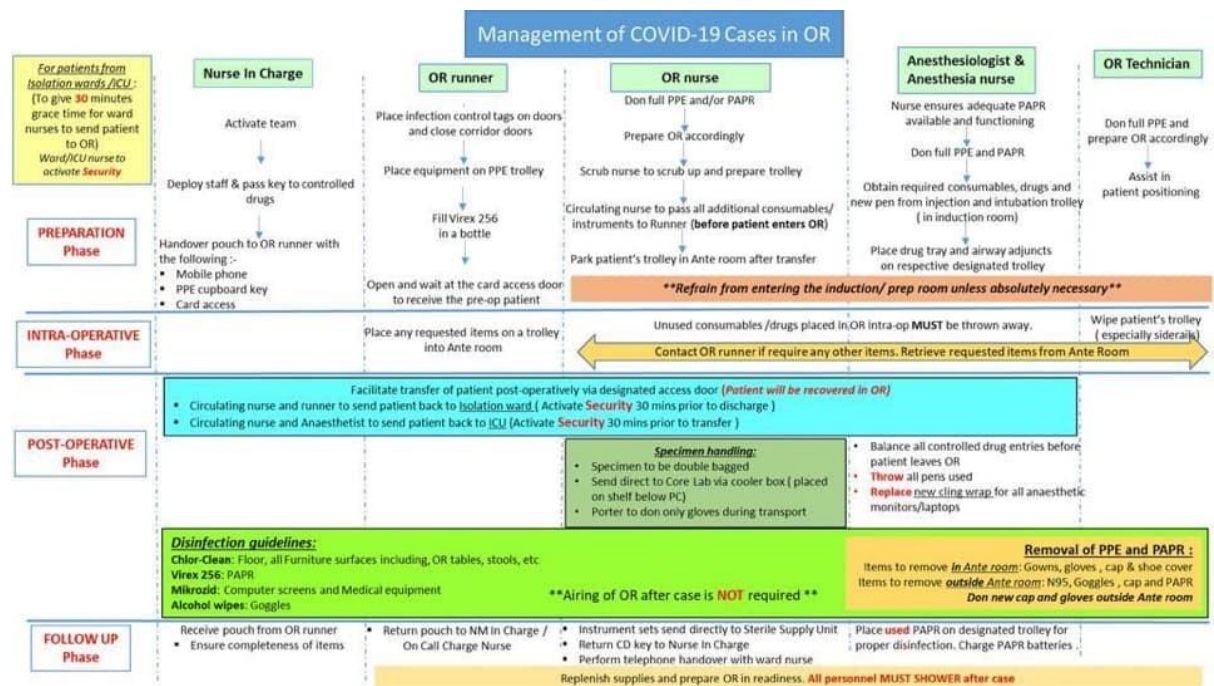
N95 fitting instructions

<https://youtu.be/XPOzCG4DrgQ>

AUBMC Covid intubation video

<https://youtu.be/CLJGHsDs3Jg>

All videos are available on the anesthesia learning home dashboard.



Anesthesia COVID OR Checklist

Anesthesia MD

Anesthesia Therapist

Preoperative Preparation Phase

- Review patient clinical information including oxygen requirements IV access and airway exam
- Devise anesthetic plan and communicate with attending/resident
- Ask for negative pressure hood or plastic intubation box (optional)
- Make sure the patient is wearing a mask over his nasal cannula or under his O₂ mask
- Get personal airborne PPE to induction room

- Remove glove boxes from wall and place in induction room
- Prepare anesthesia machine and circuit with 3 HEPA filters
- Cover anesthesia machine with plastic sheet
- Ensure hand gel, disinfecting wipes and a bunch of different size gloves present on machine on top of plastic sheet or on anesthesia stainless steel table.
- Place trolley in anteroom
- Get store supplies and keep in anteroom room
- Get glidescope, keep covered in OR
- Get medication kit and keep in anteroom
- Get plastic protection sheet (2x2m) for intubation/extubation
- Get negative pressure hood setup or plastic intubation box according to attending request
- Prepare contaminated equipment bag for airway equipment
- Get personal airborne PPE to induction room

In Induction Room/ anteroom

- Brief each other of anesthesia plan including airway plan and backup airway plan and equipment
- Prepare medication syringes to take to the OR. Take extra empty syringes, NSS vials and gauze with you for the OR (in anteroom).
- Don PPE
- Verify therapist PPE

- Brief each other of anesthesia plan including airway plan and backup airway plan and equipment
- Don PPE
- Verify resident/attending PPE

Note

Take to the operating room ONLY what is necessary. Keep the rest in the anteroom

In OR Induction Phase

- Make sure all personnel are out of the room
- Prepare ventilator settings
- Preoxygenate 5 min with low gas flows and 2 handed technique with good seal
- RSI with lidocaine, succ or roc (roc preferred)
- Give opioid after paralysis if needed
- Use glidescope at first attempt
- Consider being apneic yourself during intubation
- Verify tube depth
- Do not auscultate, verify capnography
- Avoid placing oral airway or suction catheter
- Discard soiled gloves immediately and don new set of gloves after hand hygiene

- Make sure all personnel are out of the room
- Place stylet in ETT
- Have oral airway and wet gauze ready in case of need for rescue ventilation
- Pause fresh gas flow for intubation
- Inflate cuff as soon as tube inserted then connect circuit, then restart gas flow
- Dispose of blade immediately in dedicated contaminated equipment bag
- Secure ETT with tape
- Discard soiled gloves and immediately don new set of gloves after hand hygiene

Note

Do not leave the OR until end of the case and the patient has left the OR.
If anything is needed from outside the OR it should be placed in the induction room by the runner auxiliary anesthesia therapist designated for that task for you to retrieve. The runner wears droplet precaution PPE and should leave the induction room before the OR team comes in for retrieval

In OR during maintenance

- Call in nursing team 4 minutes after ETT cuff up
- Wipe down work surfaces with disinfecting wipes

- Call in nursing team 4 minutes after ETT cuff up
- Wipe down work surfaces with disinfecting wipes

In OR emergence

- Make sure all personnel are out of the room
- Cover patient head with plastic sheet/hood/box
- If using postop nasal cannula place it before extubation
- Give lidocaine prior to extubation and consider extubating under remifentanil or dexmedetomidine
- Place face mask immediately after removal of tube with 2 handed technique and good seal

- Make sure all personnel are out of the room
- Cover patient head with plastic sheet/hood/box
- When ready pause gas flow, deflate cuff and remove tube slowly
- Restart gas flow when face mask is placed appropriately

Recovery

- Call recovery room nurse 30 min prior to end of surgery (non-ICU patient)
 - Recover patient in the operating room
 - Immediately place surgical face mask on top of nasal cannula or under O₂ face mask
 - Call covid unit for handover
 - ICU patients will be transferred directly to ICU. A covid transport team will be responsible for transporting patients to and from the covid ICU
 - Discard gloves, gown, goggles and protective surgical mask in OR
- Discard Tyvek and N95 in induction room

- The anesthesia therapist will wait 30 minutes of stable recovery time to proceed with following:
- Discard all unused items in the OR
- Discard circuit, HEPA filters, Soda lime, D-fend and capnography line without removing plastic cover
- Recovery room nurse will discard plastic cover, clean cables, monitor prior to leaving
- Discard gloves, gown, goggles and protective surgical mask in OR
- Discard Tyvek and N95 in induction room

Post recovery

Proceed to shower and consider disinfecting nose mouth and ears with povidone iodine 1% solution
Cleaning team to enter the OR 12 minutes after the patient has left