Infection Prevention Precaution Practices for OR Cases in Patients with Confirmed or Suspected COVID-19

1. Communication
   a. Attending surgeon must communicate with the OR Coordinator and Charge Nurse
   b. OR Coordinator and Charge Nurse will identify the anesthesia and nursing team and notify them to prepare the room.
   c. Identify four-person anesthesia team (not all are required to be anesthetists):
      i. **Primary anesthetist**: direct care; head of bed; ensure mask seal; intubate; extubate
      ii. **In-room assistant**: administer drugs, chart, assist as requested by Primary
      iii. **Outside assistant**: dons Airborne PPE; communicates with Armstrong Cart Assistant; hands off need equipment, supplies, drugs; enters OR if needed; does not leave door or touch anything outside of the OR
      iv. **Armstrong assistant**: Provides equipment, drugs, and supplies as requested to outside assistant; holds phones for anesthetists inside room; coordinates delivery of additional equipment and supplies from Workroom and drugs from Pharmacy; does not leave cart; has access to upper drawer or identifies individual to call when additional controlled drugs are required.
   d. The primary anesthetist and two assistants will transport the patient to the OR, once the OR is ready. The patient will be taken directly to the designated OR.

2. OR Set-up
   a. Check that blue Airborne Precautions sign is on all doors.
   b. Check that separate donning and doffing stations are set up just outside OR door. This is to ensure doffing does not contaminate clean surfaces and supplies.
      a. If using N95, label a paper bag with name and date and set it on the doffing station for easy access.
   c. If there is an Omnicell in the room, either remove it from the room or cover it with plastic sheeting. Do **not** access at any time.
   d. Check that EPIC computer is covered with plastic; use a 10/10 drape over the keyboard. Open the planned case in EPIC before patient arrives.
   e. Empty pockets of everything except name badge. No phones, bags, or books in OR. **No** reading in OR. Leave phone on Armstrong cart.
   f. All equipment and supplies should be removed from anesthesia machine drawers.
   g. Set up an Armstrong cart (including controlled drugs) outside OR.
   h. Bring only essential drugs, equipment, and supplies into OR. Additional supplies that may be needed can be set on top of the Armstrong cart for easier access.
i. Check that HEPA room air purifier is set up near head of bed.

j. Make sure OR positive pressure settings are as low as possible.

k. Check circuit that one HME airway filter is at distal end of elbow (so air is filtered before it is sampled for end tidal gases) and one HEPA airway filter is on expiratory limb inlet. Be aware that two filter resistance can potentially exceed ventilator settings and cause alarms.

l. Check that closed suction is available.

m. Set up a Mayo stand inside the door for passing off additional supplies.

n. Complete OR Readiness Huddle. Call nursing staff to inform them team is ready to go.

3. Transport to OR
   a. Check in with RN, primary care team for report
   b. Complete preop note.
   c. Before transporting, complete a Pre-Transport Huddle and confirm the destination is ready.
   d. Don PPE: gown, double gloves, N95 + eye protection or PAPR
      i. Label the N95 with your UNID and the date.
      ii. Always don and doff with a partner who verifies compliance
      iii. Consider writing your name and role on your gown
      iv. Keep the inner glove on throughout the case. When the outer glove is soiled, remove it, perform hand hygiene on the inner glove, and don a new pair of gloves.
   e. Clean bed rails and frames with sani-wipe, cover patient with clean blanket.
   f. Place surgical ear-loop mask on patient prior to transport.
   g. If supplemental oxygen is required, NC or simple FM are preferred; high flow nasal cannula (HFNC) and non-invasive positive pressure ventilation (NIPPV) devices should be avoided. Consider continuing HFNC or NIPPV if already in use; intubation before transport is ideal for those patients.
   h. During transport, minimize flow rate to maintain SpO2 below 94%. This will reduce aerosol spread. For NIV, ensure a good seal and place a HEPA filter between the patient and the circuit. For other routes, place a surgical ear-loop mask over nose, mouth, and oxygen delivery device prior to transport.
   i. For patients who will require general anesthesia, the airway should always be secured by intubation. If the patient is in a negative-pressure room and if the conditions for intubation are acceptable, the patient should be intubated before transport to the OR.
   j. If using BVM/JR or transport ventilator, HEPA filter should be place between ETT and connector.
   k. Two individuals should push the bed and provide patient care. One individual should not touch the bed, but should serve as a “clean escort” for opening
doors/pushing buttons and clearing the hallway. The clean escort should don droplet PPE; airborne PPE is not required.

4. Intraoperative Care
   a. When a HEPA room air purifier is available:
      i. The HEPA air purifier must be turned on to the maximum setting for intubation and extubation.
         1. After a controlled intubation (no mask ventilation, no suctioning, and first pass success), the HEPA room air filter must be on the maximum setting for at least 6 minutes. It may be then turned down to medium or low. It should be kept on throughout the duration of the case, unless the noise interferes with the ability to safely care for the patient.
         2. If mask ventilation, suctioning, or more than one pass is required for endotracheal intubation, the HEPA room air filter must be on the maximum setting for at least 15 minutes. It may be then turned down to medium or low. It should be kept on throughout the duration of the case, unless the noise interferes with the ability to safely care for the patient.
         3. After tracheal extubation, the HEPA room air filter must remain on the maximum setting for at least 15 minutes before the OR doors are opened or the patient is taken out of the room.
         4. ii. All staff who are required to be in the OR during intubation and extubation must wear airborne PPE, including fit-tested N95 or PAPR/CAPR throughout the case. All staff not in airborne PPE must exit the room before extubation.
            ii. Additional providers may enter the room with droplet PPE (surgical mask and eye protection) 6 minutes after the end of controlled intubation and 15 minutes after the end of intubation requiring mask ventilation, suctioning, or more than one pass, or any extubation.
            iii. Traffic in and out of the room should be kept to a minimum.
            iv. Doors should be kept closed as much as possible.
               1. Open doors (with button) to make requests of outside assistant (when alternate communication mechanism is not available).
               2. Outside assistant may open the door to place requested equipment, drugs, and supplies on a Mayo stand inside the door. The stand should be cleaned with sani-wipes by OR staff after the supplies are removed. Supplies should never be directly handed to anyone in the OR.
   b. When a HEPA room air purifier is not available:
      i. All staff who will be in the room must wear airborne PPE, including fit-tested N95 or PAPR/CAPR, throughout the case.
ii. Doors must be kept closed, except:
   1. Open doors (with button) to make requests of outside assistant (when alternate communication mechanism is not available)
   2. Outside assistant may open the door to place requested equipment, drugs, and supplies on a Mayo stand inside the door. The stand should be cleaned with sani-wipes by OR staff after the supplies are removed. Supplies should never be directly handed to anyone in the OR.

c. No observers or students are allowed; aim for minimum required staff

d. MAC and regional anesthesia may preferable because intubation is not required. If patient is coughing, intubation may be preferable.
   i. If supplemental oxygen is required, minimize flow rate to maintain SpO2 below 94%.
   ii. Limit sedation to prevent the need for airway rescue.
   iii. Patient should continue to wear ear-loop surgical mask over nose, mouth, and face mask or

e. Before intubation, complete Pre-Intubation Huddle.

f. For intubation, primary anesthetist applies anesthesia mask with straps and holds with two hands to ensure seal. Assistant does other tasks as directed.

g. Place all airway equipment on the plastic bag on the anesthesia machine or directly in the trash. Once induction/intubation complete, discard all airway equipment and supplies except mask. Clean mask with sani-wipe and save for extubation.

h. Once induction complete, do not disconnect circuit unless absolutely necessary.

i. Once induction/intubation complete, wipe all surfaces with sani-wipe.

j. Perform hand hygiene before charting.

k. Hand hygiene can be performed directly on gloves. Remove the outer gloves, perform hand hygiene, and don a new pair of gloves when gloves are visibly or highly soiled (after intubation, after line placement, etc.). Consider triple gloving for intubation and extubation, so the outer layer can be quickly removed immediately after intubation/extubation.

l. Before extubation, complete Pre-Extubation Huddle.

m. Patients who had general anesthesia and will go to a negative-pressure room after surgery should be transported while they are still intubated. Anesthesia and muscle relaxation should be maintained to reduce the risk of coughing.

n. Consider leaving patients who were on supplemental oxygen preop intubated postop, to avoid the need for later reintubation.

o. Patients who had general anesthesia who will not go to a negative pressure room should be extubated in the operating room. The patient should be awake and breathing well prior to transport. This will require a few extra minutes in the room. If possible, take the time to wean them to room air so they can be
transported on room air. For patients who were on supplemental oxygen prior to transport, it is reasonable to continue that route. Otherwise, low flow NC or simple face mask should be used. Minimize flow rate to maintain SpO2 below 94%. For NIPPV, ensure a good seal and place a HEPA filter between the patient and the circuit. For other routes or room air, place a surgical ear-loop mask over the nose, mouth, and oxygen delivery device prior to transport.

p. Reconcile controlled drugs in OR with nurse/anesthesia provider & waste in dirty suction canister.

q. Place the anesthesia circuit, suction, water-trap, and soda-lime canister in the trash before leaving the room.

5. Transport from OR
   a. Before transport, complete Pre-Transport Huddle and confirm the destination is ready.
   b. The (cleaned)anesthesia mask, a HEPA filter, and bag-valve-mask or Jackson-Rees should be placed on the bed in case of airway emergency during transport
   c. PPE should be kept on for transport.
   d. Clean bed rails and frames with sani-wipes, cover patient with clean blanket.
   e. Make sure the HEPA air purifier is turned on maximum prior to leaving room.
   f. Two individuals should push the bed and provide patient care. One individual should not touch the bed, but should serve as a “clean escort” for opening doors/pushing buttons and clearing the hallway. The clean escort should don droplet PPE; airborne PPE is not required. The clean escort can also transport the labeled N95 paper bag to facilitate doffing and preserving the N95 at the destination.
   g. Place a sign on the door indicating the departure time. Cleaning must not start for at least 15 minutes.
   h. After

6. Cleaning
   a. Wear gown, surgical mask, and eye protection (droplet precautions)