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## COVID-19 Perioperative Guidelines – April 24, 2020 V 8.5

These Guidelines will EVOLVE. They are specific for Anesthesia and the Perioperative Area. Accurate as of above date.

### General Principles:

1. No PPE in the Sterile Corridor
2. Don at Donning Stations
  - a. Primary Donning Station in Outside Corridor between Change Room and Sterile Corridor
  - b. COVID Room Donning Station (Outside OR 5 and OR 3)
  - c. Recovery Room Donning Station
3. Doffing
  - a. In OR room doff gloves and gown and doff hat, shield and mask in Outside Corridor.
  - b. Anesthesia may doff in recovery room if necessary to facilitate patient transfer
4. All patients must be awake prior to transfer to recovery
5. For COVID Positive AND Suspected Patients - Anesthesia Assessment/Consent/Surgical Site Marking/Briefing to take place at patient bedside on ward/ER in Droplet/Contact PPE
6. Anesthesia Team MAY Collect COVID Positive or Potential Patients who are **unstable** from PICU or NICU in FULL Airborne/Droplet/Contact PPE Donned in OR for Patient Safety Reasons. *Route is currently being determined.*
7. Healthcare workers should always Don Universal Precautions when interacting with patients.
8. Cloth hats are not to be worn. An exception will be for cultural or religious reasons, and the expectation is that the head covering is washed daily.
9. **A parent will have to be escorted through CHEO, see appendix 4 for details**

### Categories:

1. **Asymptomatic** Patients (No Travel, No COVID Contact)
2. Patients with Fever or URTI who have tested **Negative** for COVID-19
3. COVID-19 **Confirmed or Suspected Patients**: Patients with positive COVID-19 test, URTI or fever pending COVID-19 testing or asymptomatic with COVID-19 contact or recent international travel history (past 14 days)

### Guidelines:

1. **Asymptomatic Patients**
  - a. Parental Presence at Induction of Anesthesia (PPI) is discouraged but may be considered at the discretion of anesthesia to facilitate safe patient care

- b. Airway providers to Don Droplet/Contact PPE for intubation and extubation, any sedation where emergency airway management may be required, and for any AGMP.
  - i. Only the personnel within 2 meters of the airway during these procedures need to don droplet/contact PPE.
  - ii. Droplet/Contact PPE may be doffed after intubation, and re-donned before extubation.
- c. Limit the number of people in the room for intubation and extubation (ie. HCAs, surgeons, etc. should wait in the corridor during these times). *Anesthesiologist and 1 or 2 helpers (AA, Circulating Nurse or Second Anesthesiologist. Anesthesia resident is not included in the category of helper but may also be in room)*. Scrub nurse should stand at least 2 meters from airway.
- d. Transfer to Recovery AWAKE
  - i. Patient must be rousable before handover of care to recovery nursing
  - ii. If child is not rousable upon arrival in recovery room, anesthesia to stay with patient until they become rousable, and recovery nursing is comfortable taking over care
- e. Nasal Prongs, or MIE (with circuit Y-HME attached) may be used for O2 delivery during transfer to Recovery
- f. **If patient fully awake, not necessary for patient, transfer team or recovery nursing to don Droplet/Contact PPE** (anesthesia may wear PPE to recovery to facilitate extubation and efficient transfer of patient, and doff at Recovery Doffing Station). *Recovery nursing may don droplet/contact PPE if patient sleepy and at risk of airway emergency.*
- g. All staff in hospital to don a mask when interacting with patients as per hospital guideline.

## 2. Patients with Fever or URTI who have tested **Negative** for COVID-19

- a. Manage as per usual Droplet/Contact Precaution
- b. Droplet/Contact PPE should be worn during contact with patient and during intubation and extubation.
- c. Limit number of people in room for intubation and extubation (ie. HCAs, surgeons). *Anesthesia and 1 or 2 helpers (AA, Circulating Nurse or Second Anesthesiologist. Anesthesia resident is not included in the category of helper but may also be in room)*. Scrub nurse should stand at least 2 meters from airway.
- d. Patient should be extubated awake and transferred to Recovery Isolation Area wearing procedure or surgical mask (Nasal Prong O2 may be applied if necessary)
- e. Recovery Nursing to Don Droplet/Contact PPE.

## 3. COVID-19 Confirmed or Suspected Patients

- a. If a patient presents to the Surgical Day Unit with an URTI (Upper Respiratory Tract Infection) **AND** is to be admitted post operatively swabbing must be done, **see Appendix 2** for details.
- b. History/Physical/Consent/Surgical Site Marking/Briefing to be completed at patient bedside on ward or in emergency in **Droplet/Contact PPE**

- c. Patient transferred directly to OR 5 (COVID Room)\*\* - **OR HCA and OR Nurse Runner in Droplet/Contact PPE** transfer the patient to the OR from Ward. Parent may accompany child to OR Front Door. Patient must wear procedure mask for transfer through hospital.
- d. **ALL Team Members to don FULL Airborne/Droplet/Contact PPE\*** while in OR 5 (COVID Room)\*\* during case, after delivery of patient to anesthesia in COVID Room, **OR HCA and OR Nurse runner to doff Droplet/Contact PPE and don surgical mask and enter sterile corridor**
- e. Induction, intubation, surgery/procedure, extubation and Recovery to take place in OR 5 (COVID Room)\*\*See Appendix #5.
- f. After hours, awake patients may be transferred to PICU with Droplet/Contact Precautions. A verbal telephone report to PICU Nursing must be conducted prior to patient transfer. Patients must wear a face mask during transfer. Nasal Prongs at < 3L/min may be applied under procedure or surgical mask if necessary. **Nursing to don Droplet/Contact PPE** during Recovery Period unless performing AGMP then use **Airborne/Droplet/Contact**.
- g. Any patient with Fever, including fever that could be explained by the patients' disease process (eg. Appendicitis), will need Airborne/droplet/contact PPE until proven to be COVID negative. Delay procedure for COVID testing if possible.

\*Airborne precautions for all team members in standard OR due to risk of transmission up to 21 minutes after AGMP (Aerosol Generating Medical Procedure) including intubation, any accidental circuit disconnect and CPR. For procedures with low likelihood of these events, may doff N95 respirator and switch to droplet/contact precautions 21 minutes after intubation.

\*\*COVID Room – Primary OR 5, Back-Up OR 3

#### 4. ENT & DENTAL AGMPs

- a. All ENT (Bronchoscopy, Tracheostomy, any airway surgery) & DENTAL AGMPs require Airborne PPE in COVID OR
- b. **Asymptomatic** - Assessment and Recovery as per Category 1 Above. **NOTE:** Patients that have no symptoms, no contact, or tested negative, can be recovered in the PACU like any other asymptomatic patient.
  - i. Category 4 patients do not need airborne precautions outside of the procedure. They are asymptomatic. The only reason they are being treated with airborne precautions is because the procedure is a PROLONGED AGMP and there are guidelines that existed before COVID that suggest using airborne precautions for these procedures at baseline. They are no higher risk to PACU and Recovery than Category 1 patients.
- c. **COVID Positive or Suspect** – Assessment and Recovery as per Category 3 Above.

## Operating Room Set-Up:

1. ALL PATIENTS
  - a. Limit extraneous equipment and supplies in ALL Rooms
  - b. Anesthesia Cart to be placed in Sterile Corridor
    - i. For Category 1 patients, the anesthetic cart should be kept in the sterile corridor unless the anesthesiologist deems it beneficial to have the cart in the OR. Patient safety outweighs the risk of contamination. This should be a rare exception for complex cases and unstable patients (ie. Cardiac). If the cart is kept in the OR, efforts should be made to keep it two meters from the airway, and to clean the exterior surface prior to doffing PPE.
  - c. 2 Mayo Stands for Anesthesia in Each OR
    - i. Anesthesia to prepare Mayo Stand with needed medications, IV and airway supplies prior to start of case (Baseline Tray and an Emergency Tray will be available to assist set-up)
  - d. Anesthetic Machine:
    - i. Filter placed on patient Y and expiratory limb of circuit
    - ii. Change circuit in between all cases (CO2 line MUST be wiped and re-used, as per usual practice)
2. COVID Confirmed Positive and Potential Patients
  - a. Limit extraneous equipment and supplies in ALL Rooms
  - b. Anesthesia Cart to be placed in Sterile Corridor
    - i. On top of Cart
      1. Emergency Airway Kit\*\*\* with size appropriate In-Line Suction
      2. Code Kit\*\*\*\*
      3. IV Start Kit\*\*\*\*\*
      4. ART LINE KIT\*\*\*\*\*
  - c. 2 Mayo Stands for Anesthesia in Each OR
    - i. Anesthesia to prepare Mayo Stand with needed medications, IV and airway supplies prior to start of case (Baseline Tray and an Emergency Tray will be available to assist set-up)
      1. ETT Clamp
      2. Scissors
      3. Size Appropriate In-Line Suction in Patient with Secretions
  - d. Anesthetic Machine:
    - i. Filter placed on patient Y and expiratory limb of circuit
    - ii. Change circuit in between all cases (CO2 line MUST be wiped and re-used, as per usual practice)
  - e. OR COVID ROOM CLEANING PROTOCOL
    - i. **See Appendix #1. Room must “sit” for 21 minutes after extubation.** If there is need to clean room you must wear an N95 mask to cleaning, but ideally you wait the 21 minutes, after extubation.

## COVID-19 General Anesthesia Guidelines:

### Stages:

- Induction and Intubation
- Extubation
- Non-Intubated Techniques
- After Surgery/Procedure Cleaning Process

### General Principles:

- ALL COVID Positive AND Suspected Patients to be managed in OR 5 - COVID Room\*
- Recommend no routine LMA use
- All patients MUST be FULLY awake and comfortable prior to hand over to Recovery Nursing

### COVID Intubating Perioperative Team Members:

1. Anesthesiologist (+/- Anesthesia Resident or Second Anesthesiologist)
2. Anesthesia Assistant or Circulating Nurse
3. Second Nurse (Circulating if AA present, Scrub Nurse if Circulator assisting Anesthesia) – Stand 2 Meters from Patient in COVID Room. *To be available for emergency*
4. Nurse Runner – Sterile Corridor
5. HCA - Sterile Corridor

\*If available, Anesthesia Resident next to Gas Machine to operate ventilator and charting

### Induction and Intubation:

1. Ensure Room, Mayo Stand\* with medications, IV and airway equipment, and Anesthetic Machine prepared and checked prior to going to assess patient on ward/emergency
  - a. Size appropriate LMA on Mayo Stand, ensure to attach HME prior to insertion
  - b. Consider video laryngoscope/Glidescope
2. Apply monitors to patient
3. Rapid Sequence Intubation
  - a. May consider inhalation induction in extenuating circumstances
    - i. Difficult IV
    - ii. Ensure tight mask seal, two hand technique
4. Pre-Oxygenate with tight mask seal, two hand technique
5. If seal breaks, ensure to place ventilator on pause, or disconnect from circuit proximal to the filter
6. Avoid Bag-Mask ventilation if possible. If necessary, consider placement of LMA to facilitate ventilation, or use low pressure and low tidal volume through mask, ensuring tight seal
7. Once intubated, connect circuit and inflate cuff to 20cmH2O prior to commencing ventilation
8. Doff outer blue gloves (double glove technique), Purell (*Only need to don new outer glove for extubation*)
9. Avoid auscultation if possible. Assess bilateral chest rise and EtCO2

10. Place Laryngoscope in Biohazard Bag
11. If need to disconnect circuit:
  - a. Pause Ventilator
  - b. Disconnect proximal to filter
  - c. If must disconnect distal to filter, ensure ventilator is on pause, and clamp ETT prior to disconnecting. Ensure patient is not spontaneously breathing prior to clamping ETT
    - i. To insert inline suction
    - ii. To change a clogged HME filter
    - iii. To insert a Ventolin delivery adapter (recommend IV epinephrine over Ventolin to limit risk of contamination)

#### **Extubation:**

1. COVID OR (COVID Confirmed or Suspected Patients) Anesthetic technique to limit coughing upon waking
2. Suction oropharynx while patient deep
3. Suggest extubating fully awake (*If extubating deep, ensure oropharynx is suctioned, nasal prong O2 is placed in nares, and hold mask with HME attached with tight seal, and two hand technique, until patient fully awake*)
4. Place mask with HME attached over mouth with tight seal to deliver O2
5. Switch to droplet mask and fully cover patients face
6. Use Nasal Prong O2 under procedure mask if oxygen needed
7. Patient must be fully awake before handing over care to Recovery Nursing
8. To Recover Fully in COVID Room, Recovery Nursing to wear Airborne/Droplet/Contact PPE
9. After hours may be transferred to isolation room in PICU, fully awake with procedure mask and NP O2 PRN. **Nursing to don Droplet/Contact PPE** during Recovery Period unless performing AGMP then use **Airborne/Droplet/Contact**

#### **Non-Intubated Techniques:**

1. LMA:
  - a. For COVID Positive AND Suspected Patients, use only for:
    - i. Airway Back-Up
    - ii. Failed Airway
    - iii. When patient desaturating during apnea for RSI
      1. LMA MAY be better than Bag-mask
    - iv. If Anesthesia considers benefit outweighs risk
2. Spontaneously Breathing General Anesthetic with Nasal Prongs
  - a. Must use < 3 L/min O2
  - b. Must Cover Patient face with Droplet Mask
  - c. Must be prepared for Airway Intervention
  - d. ALL Personnel MUST Don Airborne PPE
  - e. Procedure MUST take place in OR 5 (COVID Room)\*

### **After Surgery/Procedure Cleaning Process:**

1. **See Appendix #1.** As per usual practices for patients under droplet-contact precautions

### **COVID Intraoperative CODE:**

1. All HELP to enter COVID OR through outside corridor doors
2. Limit the number of people entering the room
3. Anesthesia to Call for Help
4. Stat Call Announced Overhead
5. HCA in sterile corridor to fetch Crash Cart
6. Nurse Runner in sterile corridor
  - a. Fetch Emergency Drug Box and Code Kit from Anesthetic Cart and hand to team through inside door
  - b. Fetch Emergency Airway Kit if needed
7. Crash cart to be parked outside room in sterile corridor. HCA to place defibrillator and Back Board on designated OR Table located in sterile corridor outside COVID OR.
8. Nurse Runner to attach appropriate sized pads to defibrillator and then push through inside door into COVID OR if needed
9. Director (Lil or Delegate) to control flow of traffic through doors from outside hallway into COVID OR
10. All helpers to don Full Airborne/Droplet/Contact PPE before entering COVID Room
11. Director to limit number of people entering room
  - a. Nurse to Record on White Board
  - b. One or Two Anesthesia Helpers
  - c. One or Two Anesthesia Assistants
  - d. Two people to perform CPR if required
12. Nurse Runner to block entrance of people through sterile corridor
13. Team to maintain COVID Precautions throughout code. Ventilator must be PAUSED and ETT must be clamped before disconnection of circuit

### **Perioperative PPE Reminders:**

#### **Droplet/Contact PPE**

- a. Striped Yellow Gown
- b. Droplet Mask
- c. Eye Protection
- d. Hair Bonnet
- e. Gloves

#### **Airborne/Droplet/Contact PPE**

- a. Striped Yellow Gown (If unavailable, use Surgical Barrier Gown)
- b. N95 Mask
- c. Eye Protection



- d. Hair Bonnet
- e. Gloves (ensure gloves extend over cuffs of gown no skin should be visible)

Airway Provider Airborne/Droplet/Contact PPE\*

- a. Surgical Barrier Gown
- b. N95 Mask
- c. Face Visor
- d. Hair Bonnet
- e. Double Glove (Sterile gloves extending over cuffs of gown, blue outer gloves)

\*Ongoing discussion about neck protection may result in adaptations to this protocol

\*\*When doffing goggles, please take them off prior to leaving OR suite. Set them on a table for the nurses and HCAs to clean at room turn around. They will remove the dirty visor, wipe the frame with virox, and return the frame to the PPE cart for the next case.

**Appendix # 1: OR Cleaning Process**  
**Asymptomatic Patient or Negative COVID Screen with URTI/Fever**

<b>Circulator or Anesthesia Assistant</b>	<ol style="list-style-type: none"> <li>1. Finish charting so desk area can be cleaned</li> <li>2. Clean Anesthesia workspace: <ol style="list-style-type: none"> <li>a. Place used laryngoscope in a plastic bag on dirty case cart</li> <li>b. Anesthesia mayo stand (Communicate with anesthesia before they leave the room) dispose of any items left behind</li> <li>c. Wipe anesthesia mayo stand</li> <li>d. Wipe down anesthesia machine, don't forget arm band scanner</li> <li>e. Anesthesia cords including blood pressure cable, ECG leads, temperature probe, O2 sat cord</li> </ol> </li> </ol>
<b>Scrub Nurse</b>	<ol style="list-style-type: none"> <li>1. Return instruments to case cart and cover with lids</li> <li>2. Suction all liquids into canisters</li> <li>3. Place the linen from the case into laundry bags</li> <li>4. Wipe down mayo table, back table, prep table, ring stands</li> </ol>
<b>Runner</b>	<ol style="list-style-type: none"> <li>1. Put away extra items from case and tidy area outside of room</li> <li>2. Clean perimeter workspaces: <ol style="list-style-type: none"> <li>a. Telephone</li> <li>b. Computers including monitor, mouse, and keyboard (change plastic bag)</li> <li>c. Light Switches including OR light buttons, temp control switches, and emergency (code) buttons</li> <li>d. Metal cupboard doors and handles</li> <li>e. Purell stations</li> <li>f. Nurse's desk, including label printer, after Circulating nurse finishes charting</li> </ol> </li> </ol>
<b>HCA</b>	<ol style="list-style-type: none"> <li>1. Remove anesthesia circuit. Both blue filters are disposed. The CO2 tubing is kept</li> <li>2. Suction tubing and yanker to be changed between every case</li> <li>3. Removed anesthesia and surgical suction liners (ensure scrub nurse has suctioned up all fluids)</li> <li>4. Clean all horizontal surfaces <ol style="list-style-type: none"> <li>a. Start with bed (change virox wipe)</li> <li>b. Transfer board, positioning aids if used, place on a clean surface. (Change virox wipe)</li> <li>c. Overhead lights</li> <li>d. Clean equipment used during case: towers, tourniquet, IV pumps and poles, syringe pump, cautery machine, C-arm and x-ray gowns. Make sure all cords and plugs are wiped and rolled up appropriately. (Change cleaning wipes frequently)</li> </ol> </li> <li>5. Wash floor as needed, wash stress mats as needed.</li> <li>6. Return Instrument Cart to MDRD</li> </ol>

\*Standard precautions are required for cleaning between cases for **asymptomatic patients**.  
**Droplet/Contact** precautions are required for room cleaning for a patient with Negative COVID Screen and URTI/Fever

## COVID Positive or Potential

<b>Surgical and Recovery Team</b>	<ol style="list-style-type: none"> <li>1. Discuss who will clean OR after patient recovery. Based on time of day this may be OR staff or Environmental Services             <ol style="list-style-type: none"> <li>a. Room cannot be wiped down before the patient leaves the room</li> </ol> </li> <li>2. OR to “sit” for <b>21 minutes</b> minimum after extubation or after patient has left OR (if you cannot determine extubation time)             <ol style="list-style-type: none"> <li>a. Room will be cleaned using <b>droplet/contact precautions</b> (no N95 required) after designated sit time.</li> </ol> </li> </ol>
<b>Circulator or Anesthesia Assistant</b>	<ol style="list-style-type: none"> <li>1. Call Recovery room nurse and finish charting</li> <li>2. Clean Anesthesia workspace:             <ol style="list-style-type: none"> <li>a. Place used laryngoscope in a biohazard plastic bag on dirty case cart</li> <li>b. Anesthesia mayo stand (Communicate with anesthesia before they leave the room) dispose of any items left behind</li> <li>c. Wipe anesthesia mayo stand</li> </ol> </li> <li>3. Remove PPE if not staying to help Recovery</li> </ol>
<b>Scrub Nurse</b>	<ol style="list-style-type: none"> <li>1. Return instruments to case cart and cover with lids</li> <li>2. Suction all liquids into canisters</li> <li>3. Place the linen from the case into laundry bags</li> </ol>
<b>Runner</b>	<ol style="list-style-type: none"> <li>1. While room is being stripped down by rest of team, put away extra items from case and tidy area outside of room             <ol style="list-style-type: none"> <li>a. <b>Do not enter room as you are not wearing an N95 mask</b></li> </ol> </li> </ol>
<b>HCA</b>	<ol style="list-style-type: none"> <li>1. After transferring patient from stretcher to OR bed, strip linens off stretcher and place in linen bag, wipe stretcher in room and then push out into outer corridor. During surgery stretcher will have to be re-dressed.</li> <li>2. Ensure there is an MIE with filter on stretcher.</li> <li>3. Leave case cart in room, blue plastic cart cover is to be left in outside corridor (clean).</li> <li>4. After surgery-If you can wait 21 minutes after extubation donn contact/droplet PPE and remove surgical suction liners (ensure scrub nurse has suctioned up all fluids). Leave anesthesia suction for Recovery nurses.</li> <li>5. Rremove garbage/linen and suction and place on a separate cart, outside room (leave Anesthesia garbage-can to be used by Recovery nurse).</li> <li>6. Place instrument cart outside room.</li> <li>7. Doff PPE, using appropriate method.</li> <li>8. Donn Droplet/Contact PPE, place blue cover over case cart, and take to MDRD, and linen, garbage cart to dirty utility room.</li> <li>9. After recovery room nurse has taken over care, do NOT remove anesthesia circuit, to avoid getting the inside of the machine exposed.</li> <li>10. Please ensure that all equipment is wiped down as a precaution, in case it is missed by environmental services: towers, tourniquet, IV pumps and poles, syringe pump, cautery machine, C-arm and x-ray gowns. Make sure all cords and plugs are wiped and rolled up appropriately. (Change cleaning wipes frequently). They may be removed from the OR if possible</li> <li>11. Support recovery room nurse, as necessary.</li> </ol>
<b>Recovery Nurse</b>	<ol style="list-style-type: none"> <li>1. Ensure the there is a sign on both OR doors stating what time the patient left the room and that environmental services receive message to clean room.</li> </ol>
<b>After Patient leaves OR</b>	<ol style="list-style-type: none"> <li>1. Wear <b>Droplet/Contact PPE</b> to clean room</li> <li>2. Re-clean Anesthesia workspace:</li> </ol>

	<ul style="list-style-type: none"> <li>a. Anesthesia mayo stand (Communicate with anesthesia before they leave the room) dispose of any items left behind</li> <li>b. Wipe anesthesia mayo stand</li> <li>c. Wipe down anesthesia machine, don't forget arm band scanner</li> <li>d. Anesthesia cords including blood pressure cable, ECG leads, temperature probe, O2 sat cord</li> <li>e. Replace Anesthesia circuit</li> <li>3. Wipe down mayo table, back table, prep table, ring stands</li> <li>4. Remove remaining suction liners/garbage</li> <li>5. Clean all horizontal surfaces <ul style="list-style-type: none"> <li>e. Start with bed (change virox wipe)</li> <li>f. Transfer board, positioning aids if used, are placed on a clean surface. (Change virox wipe)</li> <li>g. Overhead lights</li> </ul> </li> <li>6. Clean perimeter workspaces: <ul style="list-style-type: none"> <li>g. Telephone</li> <li>h. Computers including monitor, mouse, and keyboard (change plastic bag)</li> <li>i. Light Switches including OR light buttons, temp control switches, and emergency (code) buttons</li> <li>j. Metal cupboard doors and handles</li> <li>k. Purell stations</li> <li>l. Nurse's desk, including label printer</li> </ul> </li> <li>7. Clean all OR equipment that was left in the room: tourniquet, IV pumps and poles, syringe pump, and cautery machine</li> </ul>
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**\*Room "sit" time is now 21 minutes after extubation. This has been confirmed with IPAC based on air exchange times in the OR.**

## **Appendix # 2:**

### **Protocol for Communication, Testing and Flow of Patients with URTI seen in the CHEO Perioperative Department**

If a patient presents to the Surgical Day Unit with an URTI (Upper Respiratory Tract Infection) **AND** is to be admitted post operatively:

#### **The SDU Clerk:**

- Ensure the patient and accompanying parent purell hands, wear a surgical mask and move them to SDU room 4. Post DROPLET-CONTACT isolation signage
- Notify the Care Facilitator/Charge Nurse that patient has arrived
- Ensure that patient chart is updated to reflect DROPLET-CONTACT precautions
- Ask parents to contact Registration, by cell phone, to complete registration

#### **The SDU Nurse will:**

- Wear Droplet-Contact PPE to complete pre op assessment. Do paper travel history
- Pick up swab kit, for “admitted patients” from the lab
- Place patient sticker on “Covid-19 Virus Test Requisition” (found in swab kit) and fill out “Travel history”, “Exposure History”, “Clinical Information” **NOTE:** PUI: Persons Under Investigation
- Call into the room and let them know that a NP/Throat swab is necessary
- Place kit on chart along with protocol and tip sheets

#### **The Physician/Surgeon will:**

- Enter order for COVID-19 testing (**see Appendix 2A**)
- Complete provincial virology lab requisition
- **Add “COVID-19 rule out” in the Infection Header (See Appendix 2B) – cannot be performed by nurse**
- Consult ID
- Notify Ottawa Public Health manager (613-580-6744 ext. 24224) of suspected case, and on evening/weekends call 613-316-7750.

#### **Anesthesiologist will:**

- Collect samples - specimens from two different sites, an NP swab and a viral throat swab.
- Kit from lab has a Nasopharyngeal Swab and a Throat Swab with only one Universal Transport Media (UTM) container. Use the proper swab for each collection site (NP & throat) and then both swabs are placed in ONE universal transport media container.

#### **The Circulating Nurse will:**

- Print labels, wipe down samples in room, and place labels. With HCA waiting outside room, wearing gloves and holding specimen bag open, drop samples into bag. Direct HCA to take specimen to lab

APPENDIX # 2A:

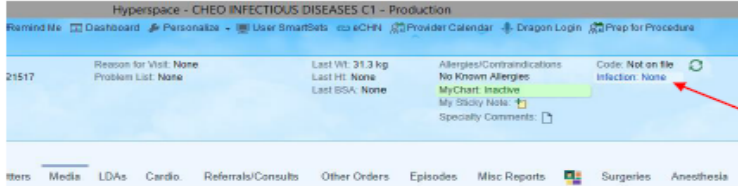
**Physician Order Entry for In-Patients for Covid-19 test**

Anesthesia will collect swabs and physician/surgeon will enter orders.

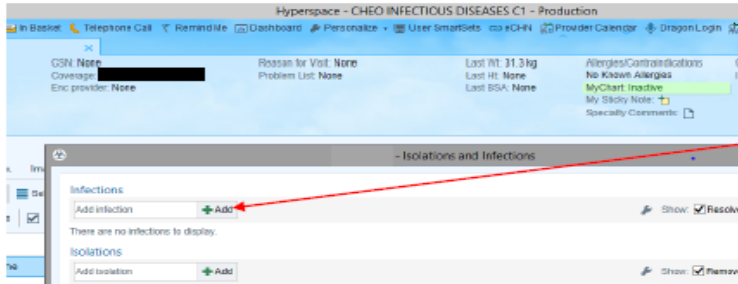
Under Order Entry:

1. Order: **COVID-19 PCR**
2. Specimen type: NP/Throat
3. Date of onset and collection
4. Patient setting: ED, ICU, inpatient unit
5. Clinical information: Suspected case of novel coronavirus
6. Clinical symptoms: MUST provide all relevant symptoms and travel history
7. CC to on call ID physician and Infection Prevention & Control (IPAC)

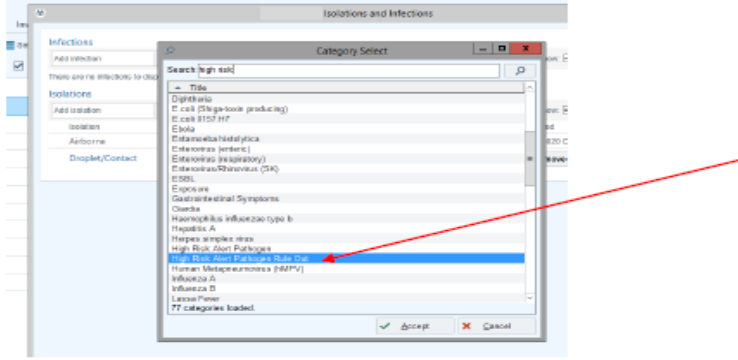
APPENDIX # 2B:



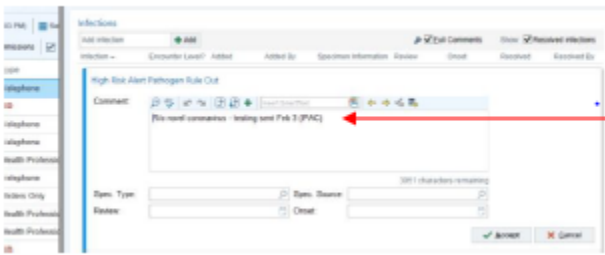
Step 1: Click on "Infection" in the header



Step 2: Click on "Add infection"



Step 3: Choose "COVID-19 rule out"



Step 4: Add comment "rule out COVID-19+ (test date)" and Accept.

### **Appendix # 3:**

## **Aerosol-generating Medical Procedures (AGMP)**

- **List of Aerosol-Generating Medical Procedures (AGMP):**
- Endotracheal intubation and related procedures (e.g., manual ventilation with MIE or Ambu bag, extubation)
- Cardio-pulmonary resuscitation during airway management (chest compressions and cardioversion/defibrillation alone are not considered AGMP)
- Open airway suctioning
- Bronchoscopy and airway surgeries
- Non-invasive positive pressure ventilation
- High flow oxygen therapy
- Sputum induction (e.g., inhalation of nebulized saline solution to liquefy and produce airway secretions, not natural coughing to bring up sputum)
- Nebulized medication by small volume nebulizer
- Large volume nebulizers for humidity (e.g., Misty-Ox)
- Airway clearance therapies such as Cough Assist and lung volume recruitment
- High-frequency oscillatory ventilation
- Providing tracheostomy care or performing a tracheostomy
- Needle thoracostomy

#### Notes:

1. Collection of an NP swab and upper respiratory tract suctioning (nasal/oral) are NOT considered AMGPs (see Appendix A for evidence summary and references)
2. The number of HCWs present during an AGMP should be limited to those essential for patient care and support.
3. If a negative pressure room is not available, AGMPs should be restricted. If unavoidable, AGMPs should be carried out using a process and environment that minimizes exposure risk (e.g., single room with door closed and away from high-risk patients).



## Appendix # 4: Parent Escorts throughout CHEO

- Parents are informed of the escort process when entering CHEO, or at any screening station- that they are to always have an escort when moving around the building.
- The escort number will be posted on the phone by the pneumatic tube system. There is one escort overnight, so parents may have to wait, depending on availability.

Day Surgery 07:30-15:30	Inpatients/MDU 07:30-15:30	Inpatients/ED After Hours
After briefing the SDU nurse will let Erica know to call the escort line (6705)	After surgical briefing Erica will call the escort line (6705)	After the surgical briefing, the circulating nurse will call the escort line (6705). Direct parents to wait outside the OR doors and wait for escort.
Parent will be escorted to OR parent waiting room	Parent will be taken back to the child's room	<b>Inpatients-</b> parent will be taken back to child's room <b>ED-</b> Parent will be taken to OR waiting room

## **Appendix #5: PACU Workflow for Covid + and Covid Suspect Patients**

1. After extubation, when the patient is fully awake, the PACU nurse will be called into the OR to recover the patient. One PACU nurse dons airborne PPE.
2. The PACU nurse will bring the clean stretcher into the OR. The OR team members/PACU nurse will move the patient onto the stretcher.
3. The PACU nurse will have a discussion with the OR team members wearing N95 masks if someone can stay with the PACU nurse for the 21 minutes after extubation. If an OR team member cannot stay, phone the nurse in charge to see if anyone else is available.
4. A second PACU nurse will be the runner on the outside of the OR room and will carry a phone. 21 minutes after extubation when a member of the OR team leaves, there can be a discussion between the PACU nurses to determine if the second PACU nurse needs to enter the OR with Droplet/Contact precautions.
5. Get handover from anesthesia in the OR : make sure ventilator is on standby, or off, check to see what time the patient was extubated (in the PACU handover).
6. Make sure patient has nasal prongs (PRN) and /or procedure mask.
7. When stable and ready for discharge, PACU to call floor to give time for RN/HCA to pick patient up. Give report to floor nurse over the phone. Decide which door the RN should come to - OR main door or door near anesthesia office. Remind them of Droplet/Contact precautions.
8. When patient is ready to leave, push patient through OR doors to clean PACU nurse in outer corridor and she will transport the patient to the OR front doors. If she needs help, she will call the HCA.
9. After doffing the PPE, the PACU nurse will write the time you exited the room on the airborne precaution sign on the door and let the charge nurse know what time you left the room.

### **FYI:**

- Do not use cupboards in OR rooms to get supplies, they should remain closed at all times.
- When trying to determine 21 minutes after extubation time, use the time displayed on the bottom corner of the dragger monitor (not clock on wall, they may vary).
- You can use the temp on the anesthesia machine, with white temp probe.
- You can use the suction unit on anesthesia machine, will work independently when anesthesia machine is on standby.
- Just above the suction unit is the oxygen source to plug in the nasal prongs and the knob that controls that is just above, will work independently when anesthesia machine is on standby.

### **Tips for using anesthesia machine/computer**

To select the proper anesthesia machine so that vitals will integrate into the PACU navigator, the following steps are:

1. Device select
2. Choose the proper device, the name is located on the monitor and anesthesia machine
3. O2 Sats, HR, Temp, RR will integrate to your flowsheets-BP has to be manually entered for now.

**Appendix # 6**  
**COVID-19 Testing and Precautions for Patients Scheduled for an Investigation,  
Procedure or Surgery under Anesthesia**

**Current situation:**

The region has curtailed most elective imaging, procedures and surgery under anesthesia while we prepare for a pandemic surge, understand community spread of COVID-19 and establish reliable supply chains of PPE. CHEO is performing only time-sensitive and urgent/emergent surgeries and other tests and procedures under anesthesia. The Perioperative Team has developed Standard Operating Procedures (SOPs) for different categories of patients, from asymptomatic to those diagnosed with COVID-19. These are published on CHEO's shared drive and CHEOnet and updated weekly. For patients with confirmed or suspected COVID-19, all airway management (intubation, extubation and recovery from anesthesia) is being done in our COVID-19 ORs. These are positive pressure high exchange ORs that have been designated for this purpose. If the patient requires testing or a procedure under anesthesia (cardiac cath, MRI, CT, Radiation Therapy, PET scan, etc), they are then transported to that area for the test or procedure, and then returned to the COVID-19 OR for emergence from anesthesia and recovery care. Ruling out suspected cases of COVID-19 would benefit CHEO as it would simplify the workflow and reduce the need for N95 respirators in those patients with respiratory signs or symptoms who prove to be negative for COVID-19. It may also avoid the need to transport intubated patients between areas.

**A. Proposed work-flow – outpatients:**

- 1) All patients coming from home for surgery or procedures under anesthesia will be called 72 hours prior to the scheduled time by the OR PSC or Surgical Administrative Assistants to be screened for the following:
  - a. current signs or symptoms of COVID-19, including atypical signs (any change in health status).
  - b. history in the past 14 days of symptoms of COVID-19 (fever, respiratory symptoms of cough, rhinorrhea, shortness of breath);
  - c. contact with a known COVID-19 case in the previous 14 days;
  - d. Travel outside of Canada or contact with an ill returning traveller (with respiratory symptoms) in the previous 14 days.
- 2) If the above screening is positive, this should be discussed with the MRP (surgeon or physician requesting procedure).
- 3) If the patient has current symptoms (1a or b above), a swab for COVID-19 should be performed. If positive, a decision must be made about delaying the OR/procedure until symptoms resolve.
  - a. Note: Patients coming from home to be swabbed can do so in the C1 clinic with prior discussion with the ID physician carrying the COVID-19 pager or the C1 clinic nurse who is assigned for swabbing patients. The MRP or Anesthesiologist will order the swab, prior to patient arrival.
- 4) If the patient is in a potential incubation period (travel history or positive contact, #1 c or d (see above), then a swab for COVID-19 is *not recommended*. There are 2 options:
  - a. Postpone the procedure:

- until self-isolation for 14 days is over, and asymptomatic, OR
  - from the end of the exposure period (14 days), as per Ottawa Public Health
- b. Proceed with OR/procedure:
- with AGMP precautions (N95 respirator)

**B. Proposed work-flow – inpatients/ED patients (linked to current guidelines):**

- 1) The same principles apply as for outpatients. If a patient was not swabbed on admission and then the situation changes such that Anesthesia is planned after admission, care should be taken to order the COVID-19 swab testing once the plan is made (e.g. history of URTI prior to admission but now resolved, subsequently admitted and needing sedated MRI or surgery).
- 2) MRPs or Anesthesiologists (at the time of pre-op assessment) should perform the screening assessment noted in A. (1) above once the decision is made to proceed with Anesthesia and send the COVID-19 testing promptly so as not to delay the procedure.
- 3) If deemed urgent and there is not enough time for COVID-19 testing to be performed (turn-around time should optimally be <24 hours, but delays may occur up to 48 hours or more depending on laboratory staff/equipment capacity), or if the child is potentially in an incubation period after contact [A (1) c or A (1) d], the OR/procedure should be performed under Airborne/Droplet/Contact Precautions.

	No symptoms, no symptoms in past 2	Respiratory symptoms present	No symptoms, positive contact
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	weeks, no travel/contact history	now or in the past 2 weeks	history (travel or contact with ill traveller in last 2 weeks, contact with known COVID-19 pt)
<b>Outpatients:</b> Can OR/procedure be deferred for 48 hours?	Not needed – proceed with OR/procedure	If yes – swab for COVID-19 and await results	
		If no – proceed to OR/intubation with appropriate precautions (including use of N95 respirator)	
<b>Outpatients:</b> Can OR/procedure be deferred to the end of 14 days from positive contact history?			If yes – defer to end of 14 days
			If no – proceed to OR/intubation with appropriate precautions (including N95)
<b>Inpatients:</b> Can OR/procedure be deferred for 48 hours?	Not needed – proceed with OR/procedure	If yes – should have been swabbed on admission, but if not done please send testing as soon as decision made to go to OR/procedure.	
		If no – proceed to OR/intubation with appropriate precautions (including N95)	
<b>Inpatients:</b> Can OR/procedure be deferred to the end of 14 days from positive contact history?			If yes – defer to end of 14 days
			If no – proceed to OR/intubation with appropriate precautions (including N95)

**Script for Person calling patients/families at home that are coming for Surgery/Procedure, during Covid-19**

1. As a safety measure in response to the COVID-19 pandemic, we need to ask you some screening questions before you bring your child in for surgery. Does your child have any of the following:
  - a) **YES \_\_\_ NO \_\_\_** Have you, or anyone in your household (or in your care) received public health or medical advice (advice from a doctor) to self-isolate?
  - b) **YES \_\_\_ NO \_\_\_** Do you, or anyone in your household have any one of these symptoms of respiratory infection:
    - Fever
    - Cough (New or worsening cough OR exacerbation of chronic cough)
    - Difficulty breathing
    - Runny nose, stuffy nose
    - Sore throat
    - Nausea, vomiting or diarrhea
  - c) **YES \_\_\_ NO \_\_\_** Do you, or your child, have any history in the past 14 days of symptoms of COVID-19 like fever, respiratory symptoms of cough, runny nose, shortness of breath?
  - d) **YES \_\_\_ NO \_\_\_** Have you, or your child, had contact with a known COVID-19 case in the previous 14 days;
  - e) **YES \_\_\_ NO \_\_\_** Have you, or your child, travelled outside of Canada or had any contact with an ill returning traveler (with respiratory symptoms) in the previous 14 days?

**Process for Erica to know:**

If the patient or family say “yes” to any of the questions, you need to contact the Most Responsible Physician (staff person) and tell them which questions they answered “yes” to. Let the physician know that you will send the family to the C1 clinic to have the swab (if they answered yes to 1 a or b), and that you instructed the family to do so. Also call the C1 nurse, to give them a heads up that the family will be coming in that day. The swab needs to be done that day.

If they answered “yes” to 1 c or d, the physician may either postpone the surgery/procedure or go ahead. They will tell you, and you will need to contact the family and let them know.

If the swab comes back as positive, the Physician will decide whether to postpone the surgery or go ahead with surgery, and they should let you know one way or the other.

**Appendix #7: SDU Workflow**

- Patients and family to be escorted to OR front desk
- Erica registers patient and calls PACU to notify staff of patient arrival.
- SDU/PACU staff walks pt/family around the outside corridor and enters via the “Lion” door
- Erica will have armband print in PACU
- Pt placed in PACU bed bay 7, 9, 10 or isolation room depending on pt needs (isolation, quiet room )
- Pt assessments to be done in PACU where OR staff will pick up pt.
- Patients will be recovered and discharged from PACU
- Bathroom outside PACU will be for patient and families
- Pharmacy is aware and will transfer SDU meds to PACU
- TV gaming console and distraction kits in PACU
- SDU linen cart in back of PACU
- SDU pamphlets etc. will be in Erica’s office
- SDU doors entrance via playroom and SDU front office will be locked.
- Extra stretchers and wheelchairs will be stored in playroom
- Medical Records will deliver pt charts to PACU

We will trial this workflow. Please send and suggestions or concerns to myself, Jane/Cathy or Terry. Any changes will be discussed with Peri-op team and will be posted on weekly basis unless urgent. Thank you for your patience

**Appendix # 8: Process for Picking up Covid +/Suspected patients from ED/Inpatient Units**



1. Surgeon, Anesthesiologist, HCA, OR Nurse runner - go to ward, all donn Droplet/Contact PPE outside the patient room.
2. Do assessment, briefing in patient ward/ER room.
  - a. If Nurse Runner not an RN, then Circulating Nurse to go to ward in place of runner to do briefing.
3. Surgeon, Anesthesiologist doff PPE and return to OR.
  - a. If Circulating Nurse present for briefing, must return to OR with Anesthesiologist. In this case, enlist ward nurse to help with patient transfer.
4. Nurse runner (or ward nurse if necessary) and HCA transport patient (patient to wear procedure mask) to OR room (parents may follow to OR front desk), wearing Droplet/Contact PPE.
5. **Anesthesia, Circulating Nurse, Scrub nurse to donn Airborne/Droplet/Contact PPE and be ready in the COVID OR waiting for the patient to arrive.**
  - a. Goal is to avoid having a COVID patient idling in hallways/public spaces unnecessarily.
6. Once patient is transferred to OR bed, Nurse runner and HCA doff. Droplet/Contact PPE, and donn surgical mask and enter sterile corridor.
7. After AMPG, Surgeon and Resident Donn Airborne/Droplet/Contact PPE and enter the room.

\*Periop team may enlist the help of ward/ER nursing for transport if necessary due to complex set-ups. It is most important that the Anesthesia Team and the Circulating Nurse be ready in the COVID OR in Airborne/Droplet/Contact PPE, waiting for patient to arrive, to avoid unnecessary idling of patient in public spaces.

