

# Congenital Cardiac Anesthesia COVID-19 Protocol Sample

*Courtesy of Dr. Lisa Caplan – Texas Children's Hospital*

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## Transport from CICU to CVOR

- Make sure before any transport that the ICU team place your patient on monitors, gets the oxygen tank, and prepare the IV pole for transport.
- Intubated Patient
  - Patient: Filter on end of ETT prior to leaving room
  - Anesthesia Team Member #1: Full PPE to be donned prior to entering CICU room. He/she only touches the patient bed.
  - Anesthesia Team Member # 2: Full PPE to be donned prior to entering CICU room. He/she only touches the patient bed.
  - CVOR Circulator : Full PPE to be donned prior to entering CICU room. He/she only touches the patient bed.
  - Observer: Someone that can touch elevator buttons, open doors.
    - This person is in goggles, N95, no gloves
- Unintubated Patient
  - Patient: Must have surgical mask over face when transporting in hallways. Avoid CPAP and NC.
    - If supplemental oxygen is needed: use a simple face mask
  - Anesthesia Team Member #1: Full PPE to be donned prior to entering CICU room. He/she only touches the patient bed.
  - CVOR Circulator: Full PPE to be donned prior to entering CICU room. He/she only touches the patient bed.
  - Observer: Someone that can touch elevator buttons, open doors.
    - This person is in goggles, N95, no gloves

## CVOR Protocols

### Anesthesia Staff Needed

- **Anesthesia Team Member #1:** This person will be responsible for the aerosol generating procedures (AGP): inducing anesthesia, intubating patient, and placing TEE probe. This person will also place arterial line/central line when AGP done.
  - **PPE**
    - Full PPE: Goggles, N95, Gown, 2 sets of gloves
    - Recommend sealing your cell phone and VOALTE in plastic bags for access if needed

- **Anesthesia Team Member #2:** this person will stand 6 feet back during AGP. Hand medications and TEE probe to airway manager; touch the vent/computer/medications while AGP's are being performed
  - Assist with the transport of an intubated child
  - **PPE**
    - Full PPE: Goggles, N95, Gown, 2 sets of gloves
- **Anesthesia runner:** someone positioned outside of CVOR to hand any needed additional materials into CVOR. *Do not use* sterile core door to hand over items.
  - PPE
    - Goggles, N95 (minimum), gloves/gown as needed

(ABG, ACT): To be run in room by perfusionist

#### Key Events In The Care Of The Patient in the CVOR

1. Preparation of OR
2. Intubation and placement of TEE probe (AGP)
3. Line Placement: Art line/CVP/PIV
4. Removal of TEE Probe
5. Wasting of Narcotics
6. Transport
7. Doffing of PPE
8. In CVOR extubation

#### Preparation of OR

- Outside OR Doffing Station: Mayo with 2 clean towels, PPE checklist, hand sanitizer, trash can, gloves
- Inside room: Airway Preparation
  - Prepare Mayo tray with airway supplies for airway manager- to be placed to the left of the head of bed. All these supplies will be thrown away after intubation. Clear all supplies off the ventilator tray.
    - Consider using video laryngoscopy if possible
    - Stylet ETT, LMA, Oral Airways, disposable stethoscope, disposable laryngoscope with blade, tape for ETT, mastisol
    - Consider placing aliquots of induction drugs on this tray
  - Prepare anesthesia circuit with filter at Y piece and in line suction  
In place
- the back table, >6 feet from AGP [all items will have to be disposed at end of case]

- recommend drawing any medication plus extras you may need during the case to minimize opening the OR door or access the medication drawers
- Recommend having plenty of flush syringes, syringes of various sizes IV tubing, needles, etc on the back table
  - All drips will need to be preordered, in room, and on pump
- Set up needed supplies for art line, central line, extra PIV, extension tubing if needed. This will include all sutures, tape, angiocaths, mastisol, arm boards, etc. sterile supplies for lines
  - Make sure it's >6 feet from head of bed

### **AGP: Intubation and Placement of TEE Probe**

- Everyone is in their full PPE
- Anesthesia Team Member #1 moves patient over to OR bed and apply monitors
- When ready to preoxygenate
  - Tell everyone in room to step 6 feet back
  - Make sure: 1) The patient's surgical mask is still on 2) tight seal with face mask
  - Give combination of induction drugs, minimize positive pressure ventilation as much as possible; consider RSI if feasible
  - When ready to intubate/patient apneic
    - Turn off anesthesia machine flows
    - Remove patient's surgical facemask then DL with method of choosing
    - Once ETT is in place
      - Inflate cuff
      - Remove stylet
      - Attach to ventilator with filter
    - Turn on flows, and ventilate patient
    - Anesthesia Team Member #1 listens to lungs with disposable stethoscope
  - Anesthesia Team Member #1 tapes tube
  - Anesthesia Team Member #2 hands Anesthesia Team Member #1 the end of TEE probe, Anesthesia Team Member #1 places TEE probe
  - End of AGP

### **Placement of Arterial Line**

- Anesthesia Team Member #1 removes his/her outer gloves with glove in glove technique

- Place arterial line in manner of Anesthesia Team Member #1's choosing
  - Remember if you use ultrasound or Doppler, all surfaces to be wiped from top to bottom. Consider placing plastic sleeve over ultrasound probe
- Once art line is in
  - Anesthesia Team Member #1 doffs all PPE BUT goggles and N95.
  - Anesthesia Team Member #1 leaves CVOR to scrub outside for central line. Anesthesia Team Member #2 remains in OR to monitor patient.

### **Placement of Central Line**

- Anesthesia Team Member #1 scrubs for central line outside OR in usual fashion with goggles and N95 still on; and reenters CVOR.
- Don sterile gloves/gown for central line
- May proceed in usual fashion.
- DO NOT place sterile equipment directly on patient. Use trays
- When the infusion line is hooked up- place blue caps over the empty infusion ports

### **AGP: Removal of TEE Probe**

- This will have to be done at the conclusion of the case with all members in room in full PPE
- Anesthesia Team Member #1 in full PPE and 2 sets of gloves removes probe and places in bag
- When done remove the outer set of gloves, and prepare for transport

### **AGP: Extubation**

- Minimize coughing with extubation
- Extubate and make sure there is a good seal on your facemask
- When the airway is stable, place a surgical mask over the patient's face
- Remain in OR for 30 minutes prior to transport

### **Preparation for Transport**

- Anesthesia runner pushes bed into room to Anesthesia Team Member #1/2 and OR circulator
- Move patient over to bed, and place monitors on in usual fashion
- Transport to CICU in full PPE
- Doff PPE at the conclusion of patient sign out to CICU

## Cath Lab Protocol

### Transport from CICU to Cath lab

- Intubated Patient
  - Patient: Filter on end of ETT prior to leaving room
  - Anesthesia Team Member #1: Full PPE to be donned prior to entering CICU room. He/she only touches the patient bed. Have lead on under gown.
  - Anesthesia Team Member #2: Full PPE to be donned prior to entering CICU room. He/she only touches the patient bed. Have lead on under gown.
  - Cath lab Circulator: Full PPE to be donned prior to entering CICU room. He/she only touches the patient bed.
  - Observer: Someone that can touch elevator buttons, open doors.
    - This person is in goggles, N95, no gloves
- Unintubated Patient
  - Patient: Must have surgical mask over face when transporting in hallways. Avoid CPAP and NC.
  - Anesthesia Team Member #1: Full PPE to be donned prior to entering CICU room. He/she only touches the patient bed. Have lead on under gown.
  - Cath lab Circulator: Full PPE to be donned prior to entering CICU room. He/she only touches the patient bed.
  - Observer: Someone that can touch elevator buttons, open doors.
    - This person is in goggles, N95, no gloves

### Staff Needed

- **Anesthesia Team Member #1:** This person will be responsible for the aerosol generating procedures (AGP): inducing anesthesia, intubating patient, and placing TEE probe (if needed). This person will also place art line/central line (if needed) when AGP done.
  - **PPE**
    - Full PPE: Goggles, N95, Gown, 2 sets of gloves
    - Recommend sealing your cell phone and VOATE in plastic bags for access if needed
- **Anesthesia Team Member #2:** this person will stand 6 feet back during AGP. Hand medications and TEE probe to Anesthesia Team Member #1; touch the vent/computer/medications while AGP's are being performed.
  - Assist with the transport of an intubated child

- PPE
  - Full PPE: Goggles, N95, Gown, 2 sets of gloves
  - *Recommend using surgical gown to ensure lead is covered head to toe*
- **Anesthesia runner:** someone positioned outside of cath lab to hand any needed additional materials into cath lab.
  - PPE
    - Goggles, N95 (minimum)

### **Preparation of Cath Lab**

- Outside Cath Lab Doffing Station: Mayo with 2 clean towels, PPE checklist, hand sanitizer, trash can, gloves.
- Airway Preparation
  - Prepare Mayo tray with airway supplies for airway manager- to be placed to the left of the head of bed. All these supplies will be thrown away after intubation. Clear all supplies off the ventilator tray.
    - Consider using video laryngoscopy if possible
    - Stylet ETT, LMA, Oral Airways, disposable stethoscope, disposable laryngoscope with blade, tape for ETT, mastisol
    - Consider placing aliquots of induction drugs on this tray
  - Prepare anesthesia circuit with filter at Y piece and in line suction In place
  - recommend drawing any medication plus extras you may need during the case to minimize opening the OR door
  - Recommend having plenty of flush syringes, syringes of various sizes IV tubing, needles, etc on a back table.
    - All drips will need to be preordered, in room, and on pump
  - Set up needed supplies for art line, central line, extra PIV, extension tubing if needed. This will include all sutures, tape, angiocaths, mastisol, arm boards, etc. sterile supplies for lines (if needed)
    - Make sure it's >6 feet from head of bed

### **AGP: Intubation and Placement of TEE Probe (if needed)**

- Everyone is in their full PPE
- Move patient over to cath bed and apply monitors
- When ready to preoxygenate
  - Tell everyone in room to step 6 feet back

- Make sure: 1) The patient's surgical mask is still on 2) tight seal with face mask
- Turn on anesthesia machine flows
- Give combination of induction drugs, minimize positive pressure ventilation as much as possible; consider RSI if feasible
- When ready to intubate/patient apneic
  - Turn off anesthesia machine flows
  - Remove patient's surgical facemask then DL with method of choosing
  - Once ETT is in place
    - Inflate cuff
    - Remove stylet
    - Attach to ventilator with filter
  - Turn on flows, and ventilate patient
  - Airway manager may listen to lungs with disposable stethoscope
- Anesthesia Team Member #1 tapes tube
- Anesthesia Team Member #2 to hand Anesthesia Team Member #1 the end of TEE probe, Anesthesia Team Member #1 places TEE probe (if needed)
- End of AGP

**See CVOR Practices if Art line/CVP are required**

**Preparation for Transport**

- Anesthesia Runner pushes bed into room to Anesthesia Team Member #1/2 and cath lab circulator
- Move patient over to bed, and place monitors on in usual fashion
- Transport to CICU and doff PPE at the conclusion of sign out

**Extubation in Cath lab**

- Extubate as detailed above in CVOR protocol
- Remain in location post extubation for at least 30 minutes/recovery
- Transport to ICU all patients

**Bedside Procedure In CICU**

**Staff Needed**

- **Anesthesia Team Member #1:** This person will be responsible for remaining inside the CICU room for the duration of the procedure.
  - Consent will have to be done over the telephone; parents are not allowed to leave the room, and paper medical records are not allowed in.

- Make sure there is access to computer inside CICU room
  - **PPE**
    - Full PPE: Goggles, N95, Gown, 2 sets of gloves
    - Recommend sealing your cell phone and VOALTE in plastic bags for access if needed
- **Anesthesia Team Member #2** : this person will remain outside of CICU room to limit the number of people inside room, unless needed for intubation.
  - He/She will be positioned outside room with traveling cart, ready to pass supplies into the primary manager if needed.
  - Alternatively may enter CICU room if an extra set of hands is needed
  - **PPE**
    - Full PPE: Goggles, N95, Gown, gloves
- **Anesthesia runner:** (If needed) someone positioned outside of CICU room to hand any needed additional materials into CICU room.
  - PPE
    - Goggles, N95 (minimum)

### **In Room Management**

- Draw up extra medication as much as reasonable to minimize opening the door for extra medications or supplies or touching bedside cart
- You will need a communication device- either a walkie talkie OR cell phone with ear buds to communicate to anesthesia outside of room
- You will have to throw away ALL supplies inside the room at the conclusion of the case.
- The SIU has an anteroom to help you doff and clean your anesthesia cart.