

**COVID-19 Cesarean Section OR Management**

- Document will be updated as needed.
- Refer to OR simulation video for reference.

Non-intubated L&D patients for C-section

Encourage OB to communicate potential for CS early

A positive or suspected infection with Covid-19 is not a contraindication to neuraxial analgesia/anesthesia

Anesthesia personnel (max 2) to wait in OR for patient regardless of urgency of CS

**STAT CS = decision-to-incision time of <30minutes**

Limit routine use of oxygen via nasal cannula or face mask unless medically necessary for mother or fetus

If necessary, attempt to use low flows (pt should wear a procedural mask over the NC or face mask)

Ventilated transport patients-HME filter on vent is in proximal end of circuit. Special precautions need to be made if anesthesia machine has to be used. 1<sup>st</sup> choice-utilize ICU vent.

- Clamp tube after expiration
- Allow circuit to decompress
- Disconnect and immediately place Filtered circuit on ETT
- Unclamp circuit

Induction site: WIC OR 3 if possible

- Patient should be wearing surgical mask-transported from floor utilizing recommended High Risk PPE-Refer to referenced transport guidelines at end of document if bagging pt or direct contact anticipated

- Bouffant hat
- Isolation gown
- N95 mask
- Double glove
- Face shield

- Supplies needed: Applies to all airway calls

- In WIC OR

- Airway tray-respiratory code tray contents

- Disposable Handle-Mil3, MAC 3&4-place in airway bag outside. Low likelihood to need.
- ETT-7-8.5
- 1 in. tape
- 10cc syringe for cuff

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	<ul style="list-style-type: none"> <li>• Bougi (tube exchanger)</li> </ul>
	<ul style="list-style-type: none"> <li>• Stylette</li> </ul>
	<ul style="list-style-type: none"> <li>• EtCO2 detector</li> </ul>
	<ul style="list-style-type: none"> <li>• Med (yellow) oral airway</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Anesthesia medications-Anesthesia Care Team (ACT) and case determined, recommendations:</li> </ul>
	<ul style="list-style-type: none"> <li>• Lidocaine 1%</li> </ul>
	<ul style="list-style-type: none"> <li>• Induction med-Prop vs. Etomidate vs. Ketamine</li> </ul>
	<ul style="list-style-type: none"> <li>• Succ vs. RSI dose Roc.</li> </ul>
	<ul style="list-style-type: none"> <li>• Epinephrine-10mcg/ml syringe-high risk cardiac collapse</li> </ul>
	<ul style="list-style-type: none"> <li>• Phenylephrine syringe</li> </ul>
	<ul style="list-style-type: none"> <li>• Ephedrine syringe</li> </ul>
	<ul style="list-style-type: none"> <li>• Outside readily available</li> </ul>
	<ul style="list-style-type: none"> <li>○ Albuterol inhaler</li> </ul>
	<ul style="list-style-type: none"> <li>○ Intubation med kit</li> </ul>
	<ul style="list-style-type: none"> <li>○ Consider drug tray 1 &amp;2</li> </ul>
	<ul style="list-style-type: none"> <li>▪ HME viral filter from anesthesia circuit</li> </ul>
	<ul style="list-style-type: none"> <li>▪ CMAC with #3 #4 blade</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Bag-valve mask prepared with HME then EtCO2 indicator</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Suction</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Several (4 recommended) disposable impervious chucks</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Clear plastic drape-4x4 plastic</li> </ul>
	<ul style="list-style-type: none"> <li>▪ No stethoscope-Potential risk of self-contamination</li> </ul>
	<ul style="list-style-type: none"> <li>▪ EtCO2 gas monitor</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Hover mat to be placed underneath patient prior to induction for patients over 300 lbs. Need to minimize airflow of contaminated pt.</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Inline suction catheter from respiratory</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Eye care and Thera tears</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Consider ETT tube clamp (padded large clamps)</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Biohazard Ziplock bags</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Nerve stimulator-verify no twitch after induction</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Minimal anesthesia cart utilized-see recommended items addendum</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Fully stocked cart outside OR</li> </ul>
	<ul style="list-style-type: none"> <li>○ <b>Labor Epidural conversion</b></li> </ul>
	<ul style="list-style-type: none"> <li>▪ Either 3% chloroprocaine vs 2% lidocaine with epinephrine and bicarb</li> </ul>
	<ul style="list-style-type: none"> <li>○ <b>SAB/CSE</b></li> </ul>
	<ul style="list-style-type: none"> <li>▪ spinal/CSE kit</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Medications</li> </ul>
	<ul style="list-style-type: none"> <li>○ Outside room</li> </ul>

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- Isolation door signage will include donning/doffing PPE
- Isolation cart with appropriate PPE
- Additional airway equipment in airway bag
  - AirQ LMA 3.5,4.5,5.5
  - Pusher stylet for AirQ
  - Disposable laryngoscopes from resp. tray
  - Above mentioned medications
  - Fully stocked anesthesia cart

• **General Anesthesia Case** all OR staff present don High Risk PPE appropriately-All donning and doffing should be observed

- RN will observe to ensure correct PPE has been donned
- PPE includes donning High Risk PPE for both anesthesia providers as listed below
  - Impervious Gown for airway team (yellow isolation gown or higher)
  - Long cuffed gloves
  - Second set disposable gloves
  - N95 mask
  - Bouffant hat
  - Eye shield
  - Bouffant hat

• **Labor Epidural conversion/CSE**

- Only anesthesia care team in Isolation room don High Risk PPE
- OR team don standard PUI/COVID-19 PPE
  - Will verify patient armband, Pre-induction Briefing OR Circulator

**Labor Epidural Conversion**

- Anesthesia provider to begin dosing patient once they arrive in the OR
- Local anesthetic choice depending on urgency of case
  - Either 3% chlorprocaine vs 2% lidocaine with epinephrine and bicarb
- Only one provider to be dosing epidural and testing patient’s level; other provider providing support without touching patient (e.g. hanging drips, drawing up other medications, charting)
- OB to be donning PPE while dosing epidural
- Once patient with adequate block, secondary anesthesia provider should leave OR
  - Proper witnessed doffing technique
  - Hand Hygiene (wash with Alcohol based Hand Sanitizer or purple wipes with gloves on)
  - Doff Gown with Gloves
  - Hand Hygiene (wash with Alcohol based Hand Sanitizer)
  - Don gloves
  - Disinfect front of face shield/goggles with approved purple top wipes (while still on HCW face)

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- Doff gloves
- Hand Hygiene (wash with Alcohol based Hand Sanitizer)
- Exit into hall AND Hand Hygiene
- Doff face shield/goggles and place in paper bag, label
- Hand Hygiene (wash with Alcohol based Hand Sanitizer)
- Doff Procedural/Surgical mask
- Hand Hygiene (wash with Alcohol based Hand Sanitizer)

**SAB/CSE**

- One provider to set-up spinal/CSE kit (sterile gloves over non-sterile gloves), while the other passes medications and primes drips
- Proceed with neuraxial timeout if not STAT
- OB to be donning PPE while block is being placed
- Nurse to help with positioning, placing monitors, and hooking up infusions
- Neuraxial block placed,
- ensure hemodynamic stability and adequate block
- Only one provider to contact patient during placement and checking level of block
- If stable then second provider leaves, uses observed Doffing process above

**GA Induction in WIC OR**

- Prepare all equipment outside room-take your time-be purposeful
- Don COVID-19 High Risk PPE prior to entering OR with checkoff by RN
  - Impervious Gown for airway team (yellow isolation gown or higher)
  - Long cuffed gloves
  - Second set disposable gloves
  - N95 mask
  - Bouffant hat
  - Eye shield
  - Bouffant hat
- Utilize Respiratory intubation tray, HME antiviral filter, CMAC, any necessary additional equipment
  - Resp. Tray.
  - HME Filter
  - Clean CMAC in wrapper-Open both blades, both will require decontam.
  - Ambu bag
  - Suction
  - Any additional meds and equipment
  - Additional clean pair of gloves with intubation supplies
  - Disposable chuck drapes for patient chest/head-recommend 4 or more

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- Clear plastic drape to be place over pt. upper body to provide additional barrier (hands and equip underneath). Recommend 4'x4'
- Tape for ETT
- Eye care-tegaderm and thera tears
- Padded clamps for tube clamping
- Biohazard ziplock bags
- Nerve stimulator

- Only 2 anesthesia team members in room during induction

- 1 primary airway
- 1 primary meds and monitor
- OR staff- maintain as much distance as possible
- RN outside for pass through

Induction/intubation

Pre-oxygenate for 5 minutes

Rapid sequence intubation

After patient induced, hold mask in place for 30 seconds

Verify no twitches prior to DL

DL-do not ventilate to decrease transmission if possible

- RSI-video DL with CMAC (CMAC will have a Red bag-kick bucket size with drawstrings on top tray)
- If clamped ETT utilized (consider need of styley and Bougi) unclamp once filter in place on ETT

- Place CMAC blade in Biohazard ziplock bag
- Maintain gloves and gown at this point-alcohol gel
- Maintain HME filter in place Bag valve then to tube with EtCO2 in line
- Secure tube/eye care
- Wipe down work area with Sani-wipes
- Discard drapes on patient, attempt roll in clear drape to prevent contamination
- Place CMAC blade in top red lined bin of CMAC
- Airway staff now Doff 1<sup>st</sup> layer gloves while Med staff Ambu pt.
- Swap-Med provider will remain behind wipe CMAC

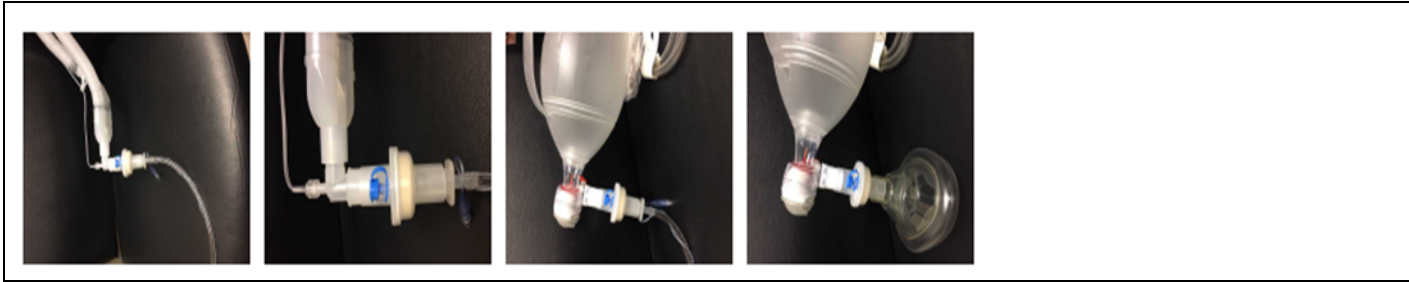
- Yellow top bleach sani-cloth
- 4 minute wet time
- Leave to dry

- Cinch equipment in Red bag CMAC tray
- Anesthesia lab will come retrieve CMAC

- Cover in garbage bag
- Wipe down CMAC bag

**For all this glove and gel between all steps**

**\*HME Filter must remain attached to tube and in place at any time of disconnection\***



- After intubation Team leader to notify anesthesia lab in order for anesthesia equipment to be cleaned
- Anesthesia personnel to have readily available items most likely to be used
  - Minimal anesthesia cart utilized-see recommended items addendum
  - Verify gel present for glove changes
- Extra glove boxes in rooms for frequent glove changes
- One provider has direct patient contact, the other provides support (e.g. passing equipment to primary provider)
- The provider responsible for patient contact will be responsible for assisting with moving the patient and securing the airway
- Outside circulator assigned to OR with brick phone.
- If any additional supplies needed, circulating RN will call outside circulator
  - Outside circulator retrieves item, dons double gloves, passes item through OR door at outside hallway
  - Circulating RN will don a clean pair of top gloves prior to opening door to receive supplies
- Staff remain in OR if possible

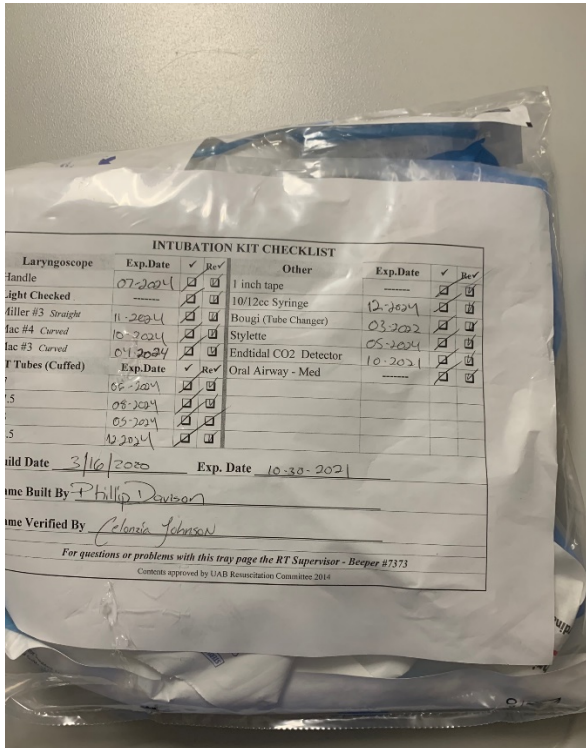
Procedure finish

- Notify Second circulator by phone procedure finish
- Second circulator will notify WPACU that patient is being transported; will also clear hallway prior to transport
- PPE donning for WPACU team
- The surgery should be scheduled at the end of the day if possible.
- The room should remain vacant for 30 minutes after the patient leaves.
- Staff should wear gown and gloves to clean the room with the regular hospital approved disinfectant wipe.
- The room should be terminally cleaned.
  - After the room is terminally cleaned, does it need to remain vacant for a period of time prior to bringing another patient back to the OR? **No.**
  - For the trash/medical waste that will be removed from the OR after the surgical procedure—should this be disposed of with the same process as any other patient? **All trash is treated per the normal protocol.**
  - Additionally, should the instruments be decontaminated in the same process as other patients? **All instruments are treated and cleaned per our normal protocol.**

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<ul style="list-style-type: none"> <li>• Transport to same WPACU 1spot</li> </ul>
<ul style="list-style-type: none"> <li>• Circulating RN and anesthesia transport patient             <ul style="list-style-type: none"> <li>○ Circulating RN will verify armband with PACU RN prior to doffing PPE</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• Circulating RN doffs PPE in WPACU room</li> </ul>
<ul style="list-style-type: none"> <li>• Two ACT to extubate patient             <ul style="list-style-type: none"> <li>○ Need real time CO2 monitoring for extubation, gas line behind filter If available</li> <li>○ Hook up to monitors with cables and X2/3 utilized</li> <li>○ Drape pt. with disposable chucks and clear plastic drape (same as induction)</li> <li>○ Suction ready-utilize inline closed suction if available</li> <li>○ HME filter in place and inline</li> <li>○ Suction oral pharynx-closed suction if possible</li> <li>○ Optimize techniques for cough free extubation-consider                 <ul style="list-style-type: none"> <li>▪ Lidocaine IV 1%</li> <li>▪ Precedex 0.4mck/kg/min. 30 minutes prior to extubation</li> <li>▪ Consider opiates</li> </ul> </li> <li>○ Cuff down, remove tube-Leave –No positive pressure at extubation, goal is to minimize cough and aerosolization</li> <li>○ Place ETT in red bag trash</li> <li>○ Discard drapes on patient, attempt roll in clear drape to prevent contamination</li> <li>○ After extubation, face mask placed back on patient by anesthesia over nasal cannula with surgical mask on pt.</li> <li>○ Consider utilizing BVM mask with HME filter over NC. Secure mask with rubber strap (blue tourniquet or similar)</li> <li>○ Gel Gloved hands</li> <li>○ Clean area with Sani-wipe</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• Doff PPE as appropriate witnessed by an observer</li> </ul>
<ul style="list-style-type: none"> <li>• After circulating RN leaves PACU room, gives handoff report to PACU RN</li> </ul>

The foregoing information is meant for educational purposes only and is derived from the limited sources of evolving evidence and experience available at the time of production during the COVID-19 pandemic. This information is not meant to control individual treatment decisions which are based on an individual patient’s specific circumstances, nor is it meant to override the clinical judgment of providers within the doctor-patient relationship. This information is relayed as part of UAB’s Emergency Operating Plan.



## What personal protective equipment (PPE) should be worn when transporting patients who are confirmed or under investigation for COVID-19?

- Transport and movement of the patient outside of their room should be limited to medically essential purposes.
  - Consider providing portable x-ray equipment in patient cohort areas to reduce the need for patient transport
- Procedure should be scheduled as the last case of the day if possible
- Notify receiving department of isolation status in advance

### For transport

- If patient requires assistance from the bed to the wheelchair or stretcher, transporting staff should **wear all recommended PPE** : gloves, gown, surgical mask, and eye protection (goggles or face shield).



- Patient should wear a surgical mask (if tolerated) and be covered with a clean sheet
- Prior to exiting the room, transporters should remove all PPE except mask and face shield according to Doffing procedure
- Perform hand hygiene.

*Additional PPE is not required unless there is an anticipated need to provide medical assistance during transport.*

### **Receiving Department:**

- Receiving department prepares room.
- Don ***all recommended PPE***: surgical mask, gown, gloves and face shield/eye protection, while awaiting patient's arrival.

### **If transporter has to assist patient:**

*The transporter is still wearing their original respirator or surgical mask, therefore, the transporter should take care to avoid self-contamination when donning the remainder of the recommended PPE.*

### **Inside procedural room:**

- Have patient perform hand hygiene if able
- Place a new, clean sheet over patient

### **Transporter:**

- Clean and disinfect all high touch surfaces of the occupied bed, stretcher or wheelchair, such as hand rails, side rails, head board, foot board, and steering mechanism
- Doff PPE according to Doffing Procedure, perform hand hygiene
  - If you are returning the transport vehicle without the patient back to the department:  
Perform low level disinfection of all transport vehicle surfaces prior to returning to department

### **Cleaning of Procedure Room:**

- Clean all horizontal and high touch surfaces with approved disinfectant.

- Room should be thoroughly cleaned
- Linen to be completely removed from the room after each patient according to routine procedures
- Medical waste to be completely removed from the room and handled according to routine procedures

**Minimalist Anesthesia Cart for In-Room (Only the following items!)**

Tape

- 1 roll pink plastic tape
- 1 roll ½ in, 1 roll 1 in, and 1 roll 2 in tape

1 nerve stimulator with 1 set PNS electrodes

1 pkg ECG electrodes

1 disposable pulse ox

5 small Tegederms

5 large Tegederms

3 Chloroprep sticks

3 Benzoin sticks

1 reg bougie and 1 stylette

1 esophageal temp probe; 1 NP temp probe, and 1 skin temp probe

2 suction catheters

1 Yankauer tip suction

1 upper body warmer

Extra ETT circuit filter

Syringes

- 8 of 10 ml syringes
- 5 of 3 ml syringes
- 3 of 1 ml syringes
- 1 20 ml syringe
- 1 ABG syringe

IV supplies

- 2 stopcocks
- 4 red sterile caps
- 2 extension sets
- 2 secondary sets/piggyback
- 2 IV regular sets
- 1 blood set
- 4 IV caths 18 g
- 4 IV caths 20 g
- 2 IV caths 22 g
- 2 IV caths 16 g
- 1 IV cath 14 g
- 2 needleless shield caps (for IV)

#### Needles

- 4 needles 18 g
- 4 blunt fill needles
- 4 16 g needles
- 1 IM needles

2 nasal trumpets

1 each size oral airways

1 each of 6.5; 7.0; 7.5; 8.0 ETT

1 omniflex connector

1 tooth guard

4 tongue blades

White paper towels \*the big ones

Stethoscope

ETT tube tree

2 bags of saline 1000 ml

2 bags of LR 1000 ml

2 bags of Isolyte 1000 ml

2 bags saline 100 ml

2 bags saline 250 ml

4 blue lab slips/ 4 white lab slips/6 biohazard bags

ECG paper extra roll

1 BIS probe

PURPLE WIPES

HAND SANITIZER

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