

Appendix 1. Considerations for COVID+/PUI Delivery in ICU

The ICU bed adjacent to the patient's room was unoccupied and supplies for vaginal birth and emergent cesarean were readily available, including a neonatal resuscitation cart and Panda Warmer. The OB physician managed the birth while wearing a PAPR with shroud, non-absorbent surgical gown, and 3 pairs of gloves. It was pre-arranged to hand off the infant at the door after removing a layer of gloves to reduce the risk of exposure.

Despite the appropriate use of PPE and the adherence to the planned protocol for vaginal birth, improvements should be made for future scenarios. Plastic draping was placed underneath the patient prior to AROM and wall suction was set up, but inadvertently the suction was not used. In retrospect, providers should don an impermeable surgical gown in addition to the use of long gloves for the rupture of membranes. Suction should be available and functional for AROM in COVID-19 patients to help limit exposure to body fluids. Additional care should be taken when obtaining specimens such as amniotic fluid and vaginal swabs.

Although this patient had a prolonged ICU stay with a vaginal birth, no staff were known to be positive for SARS-CoV-2 after treating this patient. See information below considerations for preparation for both cesarean and vaginal birth in the ICU.

General Considerations:

- Chlorhexidine wipes every 12 hours from rib cage to knees anteriorly (excluding perineum) to decrease infection risk if emergent cesarean is needed
- Self-inflating neonatal bag with mask for precipitous birth without immediate NICU support
- Family birth center (FBC) technician will bring PAPR with shroud and cart from FBC between ORs
- NICU charge RN will bring PAPR with shroud, and equipment from NICU
- Packaging and instructions to send fluids and cord blood to lab available outside room in a cooler with dry ice
- Calling neonatal team for birth:
 - FBC team will call NICU team close to birth. ICU team will not need to call, unless instructed to call an “FBC STAT TEAM” overhead. When calling operator for overhead call: state: “FBC STAT TEAM - COVID - TO ICU ROOM ____”. Expect normal FBC STAT team response. Designate who will call prior to emergency.
- Anticipate a compromised neonate (due to maternal sedating medications). NICU team will transfer ASAP
 - No delayed cord clamping
 - OB/GYN attending physician will hand off neonate to NICU team member at door in either vaginal or cesarean birth.
 - Delivering OB to don 3 pairs of gloves and then remove one pair after birth to help avoid contamination at handoff.
- Medications postpartum:
 - Prophylactic oxytocin per usual IV administration (on pump, bolus as usual).
 - If needed: methergine first line, in ICU fridge in patient-specific meds.

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The authors provided this information as a supplement to their article.

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- If needed, in order of preference: TXA (in room), miso (on FBC), hemabate (on FBC).

Breastfeeding: Establish breast pumping as soon as possible after birth, hopefully within 2 hours after birth.

- Bring pump and supplies to room to have for the duration of patient's stay.

Vaginal Birth Considerations:

- OB will anticipate delivering with vacuum or forceps (no vacuum for this delivery secondary to prematurity).
- Have an orthopedic wedge pillow available to elevate pelvis if needed for forceps delivery
- When paging overhead include "FBC TEAM TO ICU STAT"
- Wall suction set up in the room for vaginal delivery.

Staff in room for vaginal birth and PPE:

- Delivering Provider: FBC PAPR with shroud/N95, non-absorbent surgical gown, and 3 pairs of gloves
- FBC primary RN: FBC PAPR with shroud and gown
- FBC 2nd RN (or Assisting MD): FBC PAPR with shroud and gown
- ICU RT: RT/ICU PAPR with shroud/N95 and gown

Staff outside of ICU room for Vaginal Birth:

- Anesthesia
- FBC tech, as runner
- 2nd FBC RN (or second OB physician, if not hospitalist)
- Primary ICU RN
- NICU RN to catch baby immediately outside of room, in airborne precautions with surgical impenetrable gown
- Pediatric provider and NICU RT in adjacent room for neonatal resuscitation, in airborne precautions
- NICU Recorder / NICU Charge RN outside of room recording, wearing airborne precautions in case needed in resuscitation room

Cesarean Birth Considerations:

Immediate Prep & Positioning

- Move patient to the patient's RIGHT side of bed → closest to where the primary physician is positioned
- Tuck WHITE chux underneath patient prior to prepping
- If time allows, place bear hugger gown/clean gown, hair net on patient
- Surgical team will use dry scrub to disinfect hands (place outside of room in specimen cup)

Prep as usual (betadine in room if emergent)

Staff in room for Cesarean Birth and PPE:

- OB/GYN Attending/Delivering clinician: FBC PAPR with shroud, N95
- Physician Assist (or hospitalist): FBC PAPR with shroud
- FBC Tech: FBC PAPR with shroud

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- FBC circulator/primary RN: FBC PAPR with shroud
- ICU RT: RT/ICU PAPR with shroud /N95
- Anesthesia Physician: FBC or ICU PAPR with shroud

Staff outside of room for Cesarean Birth:

- FBC Charge RN: Crowd control
- 2nd FBC RN, as runner
- Primary ICU nurse
- NICU R Nurse to catch baby immediately outside of room, in airborne precautions with surgical impenetrable gown
- Pediatric provider and NICU RT in adjacent room for neonatal resuscitation, in airborne precautions
- NICU Recorder / NICU Charge RN outside of room recording, wearing airborne precautions in case needed in resuscitation room

Anesthesia Considerations:

- Anesthesia will use an IV pump in room to administer medications
- ICU RN will stay outside of room managing main IV pump.
- Anesthesia will bring propofol [need clear tubing],
- Oxytocin bags will be in room [30 in 500mL, need blue tubing], free flowing line of LR.
- Additional IV pump in the room set to OB settings for oxytocin.

Preparation/Equipment For Cesarean and Vaginal Birth:

From Main OR	Obstetrical supplies	Neonatal supplies
Back Table	Vaginal birth Cart (with vacuum and forceps options)	Neonatal resuscitation equipment in room adjacent
Second Mayo stand (1 already in each ICU room)	C/S pack, C/S instruments, provider preference card(s)	Self-inflating neonatal bag in mother's room if precipitous birth (NICU not available)
Portable suction	Betadine for crash prep	ICU has Narcan, if needed
Portable Cautery	Step stool x2 for surgical team	
	Pack of WHITE chux	
	Second gown for under sterile surgical gown (provider preference of yellow isolation versus second surgical gown)	Impermeable gown for NICU RN to catch baby
	Triple glove option for all scrubbed members	NICU PAPR WITH SHROUD, /N95 supplies
	Booties for over/under boot covers (provider preference)	CMAC

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