Inpatient Antepartum, Labor and Delivery Guidelines
COVID 19 (PUI or CONFIRMED)
Labor management

- **Patient attire/location**
  - Patient to be met by RNs in PPE in Adult Lobby and pt & support will be masked
  - Patient to wear clean patient gown and surgical mask at all times
  - Restricted to the room at all times
  - Can use telemonitors and tub as needed
  - Isolated room (not necessarily neg pressure room) with appropriate NOVEL RESPIRATORY Isolation sign
- **Support/caregiver**
  - Encouraged to wear protective gear (CONTACT & DROPLET) at all times. Required to at least wear surgical face mask at all times (especially when HCWs are in the room)
  - Restricted to patient's room, not to enter common spaces including cafeteria
  - Uses patient bathroom
  - Must be asymptomatic and cannot have been co-habitating with the patient prior to admission (Exception: if pt is discovered to be COVID + after admission, visitor can stay as long as they do not leave the room)
  - Handwashing often
  - If develops respiratory symptoms (cough, fevers, etc) must leave immediately
- **Anesthesia Considerations and Oxygen use**
  - **Strongly** encourage epidural use to avoid intubation in case emergency CS required
  - No nitrous oxide or remifentanil PCA
  - Only nasal cannula use for maternal hypoxia (Oxygen is **NO LONGER** used for intrauterine resuscitation)
- **Labor Room Materials**
  - Ensure labor management supply box is in the room with limited materials (Labeled **Covid+/PUI Supply Box**)
  - Box includes everything from usual supply cart in labor room including vacuums
  - Ensure FSE and IUPC cords are in the room
  - If ultrasound used, needs to be sterilized per protocol
- **Monitoring**
  - VS and continuous pulse oximetry, individualized per orders
  - Strict I/Os
- **Safety huddles with team**
  - Team check in q2hrs (may not require in-person physical exam each time)
  - Team to include: Bedside nurse, MFM attg, MD attg, Charge nurse, OB anesthesia, ICU PRN
  - Attention to Maternal Early Warning Criteria for Sepsis
  - Review patient's clinical status, early intervention, low threshold for cesarean
- **Delivery Personnel**
  - Recommend Attending-only (CNM or MD) with Chief resident PRN
  - Bedside nurse & LDR Resource nurse
  - Pediatrics team (essential members only) – Give team EARLY heads up for delivery
- **Delivery Team Donning and Doffing**
  - Delivery team (MDs & nurses) to wear NOVEL RESPIRATORY PPE (including N-95 & face shield). Don sterile delivery gloves OVER non-sterile blue gloves
  - Hand hygiene, doffing of gown/gloves in pt rm (below the neck) and the doffing of masks and eyewear (above the neck) outside pt room, hand hygiene again
- **Delivery Positioning and Specifics**
  - Recommend pt in stirrups to have control of delivery and avoid sitting on bed to avoid/reduce risk of fluid exposure.
  - Skin-to-skin and delayed cord clamping to be discussed on case-to-case basis with ICN depending on plans for co-localization vs 14-day separation
- **Pediatrics Team**
  - OB team to give heads up to pediatrics team whenever COVID pos patient is admitted
  - Limited personnel/essential members only
  - All must be in NOVEL RESPIRATORY PPE, including provider to receive baby
  - If resuscitation is required, stays in LDR, then transfers baby in isolette to ICN
- **Post-delivery Management**
  - Debrief to be completed by MD attg with bedside RN – dispo discussion
  - LDR to be CLOSED until appropriate high cleaning completed (up to 2 hours)
  - Prior to transfer: aim to clear hallways, minimize contact between patient and other staff/ surfaces.
  - Pt to wear surgical mask and covered from neck down in clean sheet for transport to PP; return wheelchair/gurney to dirty LDR

Inpatient Antepartum, Labor and Delivery Guidelines
COVID 19 (PUI or CONFIRMED)
Antepartum

- **Notify OB Anesthesia & ICN if patient develops respiratory symptoms or is admitted as PUI/COVID+**
  - MFM attg and ICN attending to discuss where delivery to take place if needed (minimize contamination of multiple spaces and PPE used)
- **Patient attire/location**
  - Patient to wear clean gown and surgical mask at all times
  - Restricted to room at all times (not to use shared spaces)
  - Isolated room
- **Support/caregiver**
  - Encouraged to wear protective gear (CONTACT & DROPLET) at all times. Required to at least wear surgical face mask at all times (especially when HCWs are in the room)
  - Restricted to patient's room, not to enter common spaces including cafeteria
  - Uses patient bathroom
  - Must be asymptomatic and cannot have been co-habitating with the patient prior to admission
  - Handwashing often
  - If develops respiratory symptoms (cough, fevers, etc) must leave immediately
- **Additional materials**
  - If ultrasound used, needs to be sterilized, so limit to only necessary use that will directly change patient management
  - Use PDC (see algorithm) for US cleaning
  - Use only disposable stethoscopes
  - Discuss opening OR3 surgical set on case-by-case basis
- **Rounding/Direct Patient Care**
  - MFM Attending only. Other team members can use tele-health or phone
  - Limit additional physical exams to one provider if possible when indicated
- **Safety huddles with team**
  - Team check in q2hrs, continuous pulse ox, strict I/Os (may not require in-person physical exam each time)
  - Attention to Maternal Early Warning Criteria for Sepsis
  - Includes bedside nurse, MFM attg, MD attg, Charge nurse, OB anesthesia, ICU PRN
  - Review patient's clinical status, early intervention, low threshold for cesarean. Consider sending D-dimer and other labs to better understand pt's individual clinical risk factors for poor COVID outcomes.
- **Equipment**
  - Small amount of gloves, gel, FSE, amniohook in room
  - Collected in clear plastic box (Antepartum Med room)
- **Transport of patient**
  - Complete imaging studies in pt room as much as possible to avoid transport
  - If pt needs to be transported, must wear surgical mask and new gown. Drape clean sheet over patient
  - Minimize transport team. Transporter must wear NOVEL RESPIRATORY PPE during transport.
  - Don and doff per transport protocols (whenever going into and out of rooms/clinical spaces)
- **If antepartum patient goes into labor or is induced, will stay in room, will NOT move to labor room**
- **Medication considerations:**
  - **Antenatal steroids** per protocol in pt <34 weeks if respiratory symptoms are mild/moderate with dexamethasone 6mg IV q12 for 4 doses; then complete daily oral/IV dosing for 10 days per routine COVID treatment. If >34 weeks, and steroids needed for COVID management, consider methylprednisolone 32mg daily to decrease fetal exposure. Can switch back to dexamethasone after delivery to complete full 10 day course
  - **Magnesium sulfate** use should be discussed with MFM depending on the clinical situation and risk of further respiratory compromise
  - **Anticoagulation** with lovenox if delivery or procedures are not imminent

Inpatient Antepartum, Labor and Delivery Guidelines
COVID 19 (PUI or CONFIRMED)
PLANNED/URGENT/EMERGENCY Cesarean Section Overview Guidelines

- **Decision making**
  - Make early decisions in controlled environment as much as possible (ie. early diagnosis of arrest of descent, fetal intolerance)
  - Minimize need for emergency delivery
  - Maximize time we have to use recommended PRECAUTIONS to minimize exposure to personnel
- **Pre-operative anesthesia**
  - Patient should be encouraged to have an early epidural as to decrease risk of needing emergency intubation
  - Plan CSE for non-urgent cesarean
- **Visitor/caregiver**
  - Not able to come to the OR if patient is COVID positive
- **Communication with unit**
  - HUSC will activate COVID batch page "91119"
  - Charge nurse will utilize HUSC to advise people to CLEAR THE HALLWAY
  - Only essential team member involvement
  - Observer/Recorder to monitor personnel (donning and doffing of PPE)
  - OR RN Resource communicates when additional personnel needed in OR via PHONE to designated OUT OF OR person (ie if blood is needed, additional supplies)
  - Clear communication with PCA and Anesthesia tech (outside of OR)
- **Provider PPE use**
  - IF in OR during surgery, needs to be NOVEL RESPIRATORY PPE (N-95, eye protection, surgical gown and gloves) during the entire case
  - All providers interacting with the patient (including those transporting patient in and out of the OR) must be in NOVEL RESPIRATORY PPE
- **Surgical personnel**
  - See separate personnel log and document
- **Surgical instruments and materials**
  - Minimal materials in OR. Call out for materials to be transferred into OR when needed
  - OK to use Bear hugger and Hovermat when indicated
- **Newborn management**
  - OB team to hand off baby to Peds receiving person with appropriate delayed cord clamping
  - Baby will be resuscitated in the room per usual workflow
- **Donning and Doffing of PPE by surgical personnel**
  - Occurs OUTSIDE of OR with separate trash bin (sterile core)
  - Should don NEW PPE prior to transporting patient
- **Surgical Timeouts**
  - Should be performed by MD OB attg to determine urgency of case
  - Post-op Debrief should include ICU attending, MFM attending (phone)
  - All non-essential providers should leave the room for extubation. Return to the room after 15 mins have passed
- **Patient recovery**
  - Recovery in her intrapartum LDR isolation room vs ICU per anesthesia and OB team determined after surgery
  - Portable monitor set up in isolation LDR
- **OR clean up**
  - HUSC/Charge RN communicates with housekeeping staff of COVID positive OR status
  - High risk clean up (up to two hours)

Inpatient Antepartum, Labor and Delivery Guidelines
COVID 19 (PUI or CONFIRMED)
Postpartum/Discharge

- **Notify OB Anesthesia & ICN if patient develops respiratory symptoms or is admitted as PUI/COVID+**
  - Add patient to the Complicated postpartum list
- **Post-delivery Management**
  - Debrief to be completed by MD attg with bedside RN – dispo to stay in LDR vs ICU
  - LDR to be CLOSED until appropriate high cleaning completed (up to 2 hours)
  - Prior to transfer: aim to clear hallways, minimize contact between patient and other staff/ surfaces
  - Pt to wear surgical mask and covered from neck down in clean sheet for transport to PP; return wheelchair/gurney to dirty LDR
- **Try to discharge stable PUI patients home with neonate ASAP**
  - Add pt's MRN to COVID follow up list
- **Patient attire/location**
  - Patient to wear clean gown and surgical mask
  - Restricted to patient room (not to enter shared common spaces)
  - Isolated room
- **Support/caregiver**
  - Must be asymptomatic and cannot have been co-habitating with the patient prior to admission
  - Recommend protective gear (CONTACT & DROPLET) at all times
  - Required to at least wear surgical face mask at all times, (especially when HCWs are in the room)
  - Restricted to patient's room, not to enter common spaces including cafeteria
  - Uses patient bathroom with handwashing often
  - If develops infectious symptoms (cough, fevers, etc) must leave immediately
  - Pt pt is being re-admitted, pt can have a support person present as well as baby HOWEVER support person cannot have been co-habitating with pt (same policy as labor)
- **Additional materials**
  - Use disposable stethoscopes or sterilize stethoscope after each use
- **Safety huddles with team**
  - Team check in q2hrs, continuous pulse ox, strict I/Os (may not require in-person physical exam each time)
  - Attention to Maternal Early Warning Criteria for sepsis
  - Includes bedside nurse, MFM attg, MD attg, Charge nurse, OB anesthesia, ICU PRN
- **Rounding/Direct Patient Care**
  - Attending only when possible
  - Other team members can use tele-health or phone
- **Equipment**
  - Small amount of materials in the room
- **Transport of patient**
  - Complete imaging studies in pt room as much as possible to avoid transport
  - If pt needs to be transported, must wear surgical mask and new gown. Drape new sheet over patient
  - Minimize personnel in transport team. Transporter must wear NOVEL RESPIRATORY PPE during transport (clear hallways)
  - Don and doff per transport protocols (whenever going into and out of rooms/clinical spaces)
- **Breastfeeding considerations**
  - Good hand hygiene and wear mask while feeding baby
  - Recommend to express and pump breast milk for infant if separated
  - Follow CDC guidelines for proper breast pumping hygiene
- **If patient requires prolonged hospital stay, consider transfer to Parnassus/Mt Zion to be managed by COVID medicine services**
- **Discharge considerations**
  - **Anticoagulation:** Place on 2 weeks postpartum ppx lovenox if patient asymptomatic or with mild sxs. 6 weeks lovenox if severe symptoms

Inpatient Antepartum, Labor and Delivery Guidelines
COVID 19 (PUI or CONFIRMED)
Safety huddle protocols and guidance

- **Complete safety huddles every 2 hours for ALL PUI/COVID + patients on the unit**
  - Assess labor process, fetal status, maternal status
  - Triage, intrapartum, antepartum, postpartum
  - Direct physical exam MAY NOT be indicated each huddle
- **Safety huddle personnel (outside patient room)**
  - Charge Nurse
  - Bedside nurse (1:1)
  - OB/MFM attending
  - OB anesthesia
  - Chief resident
  - ICU attending PRN
- **Monitoring for patients**
  - Continuous pulse oximetry
  - Strict I/Os
  - Attention to respiratory rate
  - LIMIT Physical exams to ONLY if there are vital sign abnormalities or change in clinical status

Questions to consider for Huddle:

- Maternal hemodynamic status (see below from the National Partnership for Maternal Safety)
  - Is the patient on oxygen support/tachypnea/decreased urine output/hypotension? → if YES, prompt evaluation of maternal status and reconsider proceeding with labor if remote from delivery
  - Discussion about indications for further testing → repeat CXR, CT, Labs
- Fetal Monitoring Category I? → YES/NO → if NO, low threshold to assess status and consider a controlled Cesarean section
- Assessment of labor progress → if in the active phase (greater than 6 cm) with no cervical change over 2 hours → consider interventions versus Cesarean delivery

Maternal Early Warning Criteria From the National Partnership for Maternal Safety

- Systolic BP (mm Hg) <90 or >160
- Diastolic BP (mm Hg) >100
- Heart rate (beats per min) <50 or >120
- Respiratory rate (breaths per min) <10 or >30
- Oxygen saturation on room air, at sea level, % <95
- Oliguria, mL/hr for ≥ 2 hrs <35
- Maternal agitation, confusion, or unresponsiveness; Patient with preeclampsia reporting a non-remitting headache or shortness of breath

Inpatient Antepartum, Labor and Delivery Guidelines

Changes in L&D management of the Asymptomatic patient

- **Testing guidelines**
  - All patients will be tested for COVID prior to admission for any planned procedure or admission (within 4 days of admission)
  - All patients will be tested for COVID on the day of admission (INCLUDING pts with pre-admission COVID test results) and on Day 4 of hospitalization
  - All antepartum patients will be re-tested every 4 days thereafter
- **Test collection**
  - Testing should be completed with NOVEL RESPIRATORY PPE (gown, gloves, N-95, eye protection) though is NOT considered an aerosol generating procedure (AGP)
  - Collect an Oropharyngeal/Nasopharyngeal or Mid-turbinate swab
- **Induction considerations**
  - Strongly recommend outpatient cervical ripening for medical and elective inductions
- **Patient attire/location**
  - Patient to wear surgical mask throughout hospitalization (especially when HCWs are in the room)
  - Limiting time outside of labor/antepartum rooms
- **Support/caregiver:**
  - Can switch support person every 24 hours during labor and postpartum admission
  - Required to wear facemask (especially when HCWs are in the room)
  - Limit time in common areas including hallways
  - Handwashing often
  - If develops infectious symptoms (cough, fevers, etc) MUST leave immediately
- **Labor management considerations**
  - Nitrous oxide can be used if COVID testing is negative. Must have negative COVID test results before NO can be used (ie. cannot use if COVID pending)
  - Only nasal cannula use for maternal hypoxia (NOT used for intrauterine resuscitation)
- **Provider PPE considerations**
  - All providers should be wearing DROPLET PPE (surgical mask and eye protection) including when COVID test is pending
  - If test is still pending at the time of 2nd stage, AGP sign should be placed on patient's door and providers should don NOVEL RESPIRATORY PPE (gown, gloves, N-95, eye protection)
  - Once test results as negative, all isolation orders should be removed and providers can return to universal precautions (eye protection and surgical mask)
  - Limit number of providers in the room for deliveries to conserve PPE
- **Considerations if asymptomatic patient undergoing a C-section**
  - If COVID negative, standard OR precautions should be applied for all team members
  - If COVID pending (for the asymptomatic patient), team members should be wearing NOVEL RESPIRATORY PPE (gown, gloves, N-95, eye protection)
- **Cases at High Risk for requiring general anesthesia:**
  - Epidural in situ > 12 hours
  - pain during labor requiring > or equal to 2 additional anesthesia administered boluses
  - non-CSE/DPE epidural catheters
  - concerns for morbidly adherent placenta
  - BMI > 40
  - emergent surgery
- **Strong recommendation for early PP discharge if mom and baby are stable**
  - If patient is re-admitted and COVID negative, caregiver and newborn can also come to the hospital with the patient
- **House cleaning considerations**
  - Do not need to delay room cleaning/turnover after asymptomatic COVID test collection (not an AGP)
  - Need to wait 1 hour prior to room cleaning after AGP (ie. 2nd stage or C-section with intubation) for COVID unknown/pending patient

Inpatient Antepartum, Labor and Delivery, Postpartum Guidelines
COVID 19 (PUI or CONFIRMED)
HANDLING OF SPECIMENS FOR LAB AND PATHOLOGY

CONTACTING PATHOLOGY

- Normal Business hours M-F 7am-6pm
  - Contact the Mission Bay Gross Room: 514-3711
  - Provide patient's name and Medical Record Number (MRN)
  - Notify verbally of COVID status when to expect specimen to be brought to Gross Room (M2379)
- After-Hours (Weekends)
  - Please contact on-call resident pager: 443-1166
  - Provide the patient's name and MRN
  - Notify verbally of suspected or confirmed COVID status and that specimen will be placed in Pathology pass-through refrigerator.
- Labeling of Requisition and Specimen Container
  - Both Requisition and Specimen container should be labeled with a SHARPIE with big letters:
    - Suspected COVID-19 or
    - Confirmed COVID-19
- Transporting of Specimen
  - DO NOT PLACE IN TUG
  - Specimens must be walked down to pathology gross room
  - During Normal Business hours – hand deliver to pathology gross room (M2379 – 2nd floor of Gateway Medical Building, next to lab/bloodbank)
  - After-hours – hand deliver to pathology gross room pass-through refrigerator (M2379, badge access to the door that leads to refrigerator)

Labs (including cord gases)

- Ensure proper labeling of specimen (specimen label matches lab requisition, double RN check)
- Place contaminated lab biohazard bag with specimen in a new clean lab biohazard bag (double bag)
- Lab requisition to be placed in the outside pocket of lab bag
- These CAN be sent via pneumonic tube (ensure specimens are tightly sealed)
- Labeling of PUI or COVID + on specimen or requisition is not necessary