Nebraska Medicine
Guidelines for Obstetric Care with COVID-19 Suspected or Confirmed Infection in Respiratory Care Area or ICU

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OBJECTIVE:

To provide guidance for women admitted for COVID-19 illness or influenza-like illnesses to patient care areas other than the 4th floor of University Tower. Most of the world experience suggests that pregnant women are no more susceptible to the COVID virus due to their pregnancy. Pregnant women with who have risk factors for increased morbidity from the COVID virus appear to have their prognosis linked to other risk factors than pregnancy. The issues regarding timing of delivery, the process and location of delivery and maternal postpartum and newborn care are addressed in these guidelines.

A. Patients admitted for COVID-19 illness require a Maternal Fetal Medicine (MFM)/Obstetric(OB) consult on admission.
    1. Patients with gestational age greater than 22 weeks gestation are to be considered viable and **plans for delivery should be made in collaboration between the primary care team, MFM/OB, Neonatal Medicine and Anesthesia**.
        a. A team briefing session will be conducted as early as possible after admission to outline care needs for the patient.
            i. Review of patent status.
                1. Maternal medical status.
                    a. Oxygen requirements/intubation status.
                    b. Maternal monitoring needs: pulse oximetry, telemetry, arterial line, etc.
                    c. If the patient is laboring, ability to allow for a support person should be decided.
                2. Fetal status
                    a. Gestational age and estimated fetal weight.
                    b. Immediate fetal status based on fetal heart rate or biophysical profile.
            ii. Review risk for cesarean should be assessed and discussion regarding most appropriate site of delivery.
                1. COVID-19 does not require cesarean.
                2. Intubation does not require cesarean.
            iii. Based on gestational age and maternal status Obstetric Guidelines for Maternal Child Health will be followed to determine treatment with antenatal steroids, magnesium sulfate for neuroprotection and use of tocolysis.
            iv. Establish OR needs.

1. Site – patient room versus closest OR.
2. Self-retaining retractors.
3. Possible need for additional suture.
4. Anticipated extra equipment.

v. If cesarean is indicated, the attending MFM/OB will assure coverage for L&D immediately at the time of decision.

vi. Newborn separation will need to be discussed with the patient and if separation is recommended and desired a newborn care-giver needs be identified.
1. It is recommended that the newborn care-giver should be someone other than the maternal support person and if possible this person will not be a PUI or someone that is currently quarantined due to exposure.
2. If a prenatal consult is needed from the NICU team this should be done by phone or electronically (Zoom, Facetime)

vii. Establish likely Neonatal Response Level.

viii. Plan anesthesia for labor if indicated.

ix. Complete delivery planning checklist.

2. Labor Management – this section describes management if labor occurs outside of L&D. IF the patient is deemed stable to be transported to L&D for delivery and then return to the original care unit after delivery and immediate recovery, Nebraska Medicine transportation guidelines will be followed.
   a. PPE as indicated by maternal care location and maternal status.
   b. US machine (if needed for assessment) should be draped if possible and is to be cleaned after use prior to removal from the patient room.
   c. Orders for delivery to be placed by MFM/OB team.
   d. Newborn support/care provider, if identified should not be in the room with the PUI/COVID+ mother.
   e. Once the L&D RN has donned PPE, there will need to be a limit number of times they exit and return to the room (the L&D RN should not be in the room in PPE for periods of greater than 4 hours continuously).
   f. Labor nurse to follow location specific PPE guidance.
   g. Labor nurse to assess the labor progress based on frequency recommendations for phase of labor.
   h. Delivery provider will don PPE to enter the room for intrauterine resuscitation, decisions to proceed with cesarean and for delivery.
3. Delivery/Recovery Management
   a. Delivery staff - one delivering provider, one maternal RN, one Stork support or 3 person NICU crew.
   b. Aerosolizing risk reduction – patient wearing mask if not intubated, consider draping the anal area.
   c. Uterotonic medications to be in the room at the time of delivery. Additionally, if delivery in ICU, TXA should be available in the ICU.
   d. Forceps/Vacuum supplies in cart outside of the room.
   e. No delay in cord clamping.

f. NICU crew will be called based on assessment in briefing session.
g. Recovery will take place in the same room.
h. Delivery cart and instruments to be cleaned in room by delivery team following current standard after vaginal delivery. The cart and instruments will be wiped off prior to existing the room and be moved to soiled utility area.
i. Disposition of the patient after initial postpartum recovery will be based on maternal status. Deterioration in maternal status after delivery has been documented.
j. Roles with delivery outside of L&D.
    i. Patient care nurse – will continue with care of the patient and monitoring based on unit and patient status.
    ii. Labor nurse – Don PPE when entering room, manage patient labor, Doff PPE when immediate PP care completed.
    iii. Stork support – Don PPE, receive newborn, dry, place hat, assess APGAR score, call NICU to room if needed, present the covered newborn to the Newborn nurse in PPE at the door for transfer to Newborn care area, Doff PPE.
    iv. Newborn nurse – Don PPE and prepare to accept newborn from Stork support and transfer to assigned care area.
    v. Delivering provider – Don PPE plus water barrier for delivery, clamp cord without delay, hand newborn to Stork support, complete delivery with all needed management for lacerations/hemorrhage, Doff PPE.

4. Cesarean Delivery - Site of delivery will be based on patient status, fetal status and nearest Operating Room.
    a. Hixson Lied. Designated OR, Newborn resuscitation in OR – PPE availability based on location.
    b. L&D. OR 4338 will be utilized. See Guidelines for Obstetric Care with COVID-10 Suspected or Confirmed Infection in Labor and Delivery.
    c. Patient room. In the event of an unstable patient or an agonal cesarean, the procedure may need to be completed in the ICU.
    d. Transportation.
        i. The patient will be transported by Airway/OR Management guidelines to the designated OR.
        ii. PPE including N-95 mask and procedure mask will be donned prior to entering the OR and a procedure gown and gloves be donned after scrub and entry to the room.
        iii. Once the procedure is started the doors will remain closed.
        iv. If the patient requires intubation the doors must stay closed for 15 minutes for air exchange.
5. Cesarean management.
    a. When the decision is made for cesarean, the attending OB will assure adequate coverage for L&D immediately at the time of the decision.
    b. Limit OR personnel – one surgeon if possible, one scrub, one circulator, one anesthesia provider (two required for GETA or anticipated placement of neuraxial

block), one NICU. The support person will not be allowed to accompany the patient to the OR.

c. Newborn resuscitation will be dictated by the site of cesarean.
d. With the need for intubation in the operating room, the doors must stay closed for 15 minutes. The patient will be managed based on current Guidelines for the Parturient with COVID-19 Suspected or Confirmed Infection in the Perioperative Environment.
e. Roles for transport and cesarean management of recommended PPE.
    i. Patient nurse.
        1. Don PPE when entering room, prepare patient for transfer (clean blanket over patient, maintain patient mask), transfer patient – covered and masked – wipe cart as it exits the door and is received by stork support and transfer nurse, Doff PPE.
        2. Don PPE, prepare to accept the patient from the OR based on patient status and recovery site.
    ii. Stork support
        1. Don PPE and accept patient on wiped cart and transfer to OR.
        2. Maintain PPE in OR, add water resistant/sterile barrier to accept newborn from operating field, Exit OR and Doff PPE.
    iii. Transport nurse
        1. Get uterotonics, glue and ice cup, Don PPE and accept patient on wiped cart from labor nurse and transfer to OR.
        2. Maintain PPE and assist with spinal placement if being used, remove cart from OR and clean, Doff PPE. Serve as support outside the OR if additional supplies need to be brought to the circulating nurse.
        3. Don PPE if needed, prepare to accept patient at OR door at completion and prepare to accept patient at OR door, move to designated recovery site.
    iv. Circulating nurse
        1. Don PPE in the OR prior to patient arrival, complete count with scrub, assure Foley catheter and cautery pad placement, place safety belt.
        2. Complete OR documentation, accept cleaned cart for patient from transport nurse in corridor, assist in moving patient to cart, wipe cart as exiting and hand off to transport and labor nurse at OR door, Exit OR and Doff PPE.
    v. Scrub tech
        1. Don surgical PPE in the OR prior to patient arrival, complete count with circulating nurse, complete procedure.
        2. Assist in moving patient to cleaned cart, Exit OR and Doff PPE.
    vi. Anesthesia
        1. Don PPE and prepare planned anesthesia prior to patient entry, complete anesthesia process.
        2. Assist in moving patient to cleaned cart, Exit OR and Doff PPE.
    vii. Attending OB physician

1. Make decision regarding cesarean (recommend this done remotely), assess if assistant is required.
2. Don surgical PPE in the OR prior to patient entry, complete case, Exit and Doff.
3. If patient in room prior to surgeon entry, surgical PPE will be made available directly outside the OR door.

viii. Resident OB
1. Don surgical PPE in the OR prior to patient entry if needed, complete case with attending, assist with moving patient to cleaned cart, Exit and Doff PPE.
2. If patient in room prior to surgeon entry, surgical PPE will be made available directly outside the OR door.

ix. Newborn Resuscitation Team
1. Don PPE and prepare to receive newborn from OR, complete newborn care in resuscitation room.
2. Place newborn in transport, clean all external surfaces and transfer newborn at door to Newborn transfer, exit resuscitation room and Doff PPE.
3. If PPV is given the room must be shut according to Airway Policy for aerosolizing procedures.

x. Newborn transfer
1. Don PPE, accept wiped newborn transport from Newborn Resuscitation Team.
2. Transfer to Newborn care area, Doff PPE.

xi. Newborn nurse
1. Don PPE, prepare to accept newborn and transfer to assigned care area.
2. Transfer to Newborn care area (covering infant face and head), Doff PPE.

6. Cesarean Recovery Management
   a. Regional anesthesia
      i. Return to negative pressure room in care area based on maternal status for recovery.
      ii. Disposition after initial postoperative recovery will be based on maternal status.
   b. General anesthesia or intubated patient
      i. Patients that are to be extubated will be moved to negative pressure room for extubation based on maternal condition and initial postoperative recovery.
      ii. Patients that remained intubated will be transported back to critical care area.
      iii. If a negative pressure room is unavailable, patient will emerge and extubate in the operating room and be subsequently moved to appropriate negative pressure room based on maternal condition.
7. Newborn care
   a. Vaginal delivery

i. Newborn will be placed on the warmer in the delivery room for initial assessment and evaluation.
ii. With planned separation the newborn will be moved to another room with appropriate covering to comply with transport guidelines.
iii. If separation is not desired by the mother after counseling and the mother is stable enough to be on the 4th floor Women's Services, the newborn will be kept 6 feet away from the mother unless she has a mask on.

b. Cesarean delivery
   i. The newborn will be taken to the recovery room adjacent to the OR for immediate assessment and evaluation.
   ii. With planned separation the newborn will be taken from the OR resuscitation room to another room with appropriate covering to comply with transport guidelines.
   iii. If separation is not desired by the mother after counseling and the mother is stable enough to be on the 4th floor Women's Services, the newborn will be kept 6 feet away from the mother unless she has a mask on
c. Circumcision will not be completed prior to discharge for the COVID/PUI male newborn.
d. Neonatal response levels
   i. Level 0 - A call that would typically require NICU presence but very low risk of intervention or admission – NICU team waits in the hall – no use of PPE. This level will be unlikely for patients delivering outside of L&D.
   ii. Level 1 - A call that will typically require NICU to manage infant with minimal interventions – NICU team of 3 (Provider, Transport RN and RT) enter the room – two additional team members (resuscitation RN and an additional provider (resident)) await outside the room, no use of PPE for those outside.
   iii. Level 2 - A call that will typically require complex NICU management in the OR. (Extreme prematurity, poor strip, HIE) 4-5 NICU staff will enter the resuscitation room (Original 3 plus resuscitation RN and an additional provider (resident or neonatologist).
   iv. Level 3 – CODE Blue whenever there is an infant in distress the code button MUST be pushed and all team members will respond (all must use PPE).
e. Transportation – all newborn transportation will be in accordance to Nebraska Medicine COVID-19 transportation guidelines.
   i. Plan to resuscitate in the negative airflow rooms in post-partum if mother delivers there.
      1. One NICU team member in N95 PPE will enter mother's room and receive the infant.
      2. A blue towel will be placed over the infant including head and face.
      3. Infant will be walked directly to an identified resuscitation room (negative pressure if available) where additional two NICU team members await in PPE.
   ii. The infant will be resuscitated on a warmer and transported to NICU in the transport incubator **OR** infant will be resuscitated on an open OMNI bed and transported to NICU in the closed ONMI Bed.

iii. When the infant is ready for transport - Incubator will be shut and major external surfaces will be wiped down near the closed door then the door will be opened and an external team member in PPE will take the infant to the NICU for admission.
iv. Remaining resuscitation team will then follow doffing procedures saving N95 masks for reuse and UV sterilization at the end of the shift.
v. If the infant is to be a PUI in insolation in Newborn / Post-Partum one member of the resuscitation team will pass the infant to a donned N95 protected person in the hall and the infant will be covered with a blue towel and walked to the isolation room.
vi. All team member to follow PPE doffing and PPE conservation protocols per Nebraska Medicine current practice.

f. Admission to NICU
   i. Same indications for admission as non-PUI and non-COVID-19 infants.
   ii. Negative airflow rooms will be utilized.
   iii. One nurse will cohort with these PUI infants.
   iv. One provider (Neonatologist) will enter the room.
   v. Back up of one NNP will be identified to enter in an emergency.
g. Newborn bath should not be delayed to 24 hours, but should be performed after infant's temperature has stabilized shortly after delivery.

8. Patients with gestational age less than 22 weeks gestation are to be considered not viable. Admission will be based on patient status and site of admission determined by COVID-19 specific recommendations. There may be an increased risk of intrauterine fetal death and pregnancy loss. Due to these risks, MFM/OB consultation will be requested for patient counseling ad pregnancy management.
   a. A team briefing session will be conducted as early as possible after admission to outline care needs for the patient based on gestational age and maternal status. **The team should consist of at a minimum the primary team, consulting MFM/OB, Anesthesia.**
      i. Review maternal medical status.
      ii. Establish fetal heart rate assessment recommendations based on gestational age.
      iii. MFM/OB to assess possible needs for surgical equipment and ultrasound availability if delivery occurs less than 22 weeks.