COVID 19 - Labor and Delivery Guidelines

Purpose: To identify the process for Women’s Services regarding suspected and diagnosed COVID-19.

Identification:
- A health care provider, as designated by Hospital Administration, will screen patients and visitors in the Main Lobby according to the CDC guidelines, defined as experiencing any of these symptoms: cough, subjective fever, temperature > 38.0 C or 100.4 F, or shortness of breath AND one of the following in the last 14 days:
  - International travel to Level 2 or 3 countries (see CDC website)
  - Domestic travel to New York, New Jersey and Connecticut
  - Contact with a confirmed or suspected COVID-19 case
- Anyone screening positive will immediately perform hand hygiene and don gloves and a surgical mask.
- Patients presenting with positive COVID-19 screening and obstetric complaints will go to Labor and Delivery (L&D) with appropriate PPE.
  - Obstetric complaints include a gestational age of 23 weeks or higher with any of the following:
    - Greater than 6 painful contractions in 1 hour, vaginal bleeding, amniotic fluid leaking, or decreased fetal movement.
- A pregnant patient, at ANY gestational age with flu-like symptoms or in respiratory distress who has no obstetric complaints, will be seen in the Emergency Department (ED), with OBGYN to consult.
  - ED charge RN to call LDR charge RN to alert unit to patient presence in ED.
- A pregnant patient, at ANY gestational age with flu-like symptoms or in respiratory distress who has no obstetric complaints and requires admission, should be admitted to Medicine, with OBGYN to consult.
  - The most senior OBGYN physician available, should evaluate the patient.
    - Fetal doppler/NST machine will be cleansed with Cavi Wipes prior to returning to L&D
    - Ultrasound probe covers will be utilized and the ultrasound cleaned per the manufacturer’s instructions

**If no respiratory complaints or flu like symptoms—NO CONCERN FOR COVID—and negative to all screening inquiries, ok to send patient to L&D after 16 weeks.

Precautions for Patients Who Screen Positive and Have an Obstetric Complaint:
- Identify COVID-19 team members at the beginning of each shift
  - Members include Ob Attending, Chief Resident, R1, R2 and NICU
  - Distribute role cards
- Prepare Labor Room 1, 2, 7, 8, 10, 363 or 364 (these are negative pressure rooms)
  - Remove unnecessary equipment, furniture, carts, birth balls, mirrors etc.
  - Bring COVID-19 Delivery Kit into the room
    - Sterile gloves, FSE, amniosketch, foley catheter, red rubber, gel packs
    - 1 patient gown, 1 pair socks, 3 baby blankets, 1 extra blanket, bed linens
  - Place door sign “AIRBORNE/DROPLET” precautions
  - Remove regular trash bag.
  - Ensure adequate PPE supplies are available.
    - All appropriate personal protective equipment (PPE) will be placed outside of the room. N95 masks will be kept at the L&D nurses’ station.
- PPE - N95 mask, surgical cap, eye protection, inner and outer gloves, plastic gown and shoe cover.
- N95 masks and PPE must be worn by healthcare providers when entering the room.
- A PAPR mask is available to the healthcare provider spending an extended period of time at the bedside. The PAPR is located in the Women’s Center Facilitator’s office. The PAPR may be cleaned and reused per the CDC guidelines.
- Caps, eye protection gloves and plastic gown should be removed within the LDR and placed in the biohazard bag. Mask should be removed outside of the LDR and hand hygiene performed.
  - Consistent and thorough hand hygiene is required before and after encounter.
  - A log will be kept of providers and visitors who enter the room.
  - Limit the number of healthcare providers who come into contact with the patient.
    - 1:1 nursing is recommended to minimize staff exposure
    - Utilize bedside phone to communicate with patient when direct contact is not required
  - Move the patient to negative pressure room.

Testing:
- As of March 29, 2020, all patients admitted, regardless of symptoms, to L&D will be swabbed for SARS-COV-2 Real Time PCR.
  - Use separate redtop nasopharyngeal swab
  - Viral specimen will be brought to the lab
    - Specimen will not be sent through the pneumatic tube system
  - Inductions and scheduled procedures should not proceed until test resulted
- Consider differential diagnosis testing if patient is symptomatic.
  - Respiratory Panel PCR, urine will we brought to the lab
    - laboratory specimen will not be sent through the pneumatic tube system
  - Chest xray – shielded and portable
- Note: The hospital Respiratory Panel-25 does NOT include COVID-19. If the patient tests positive for any of the infections on this panel, he or she may still test positive for COVID-19. Airborne and droplet precautions should continue until the confirmatory COVID-19 test results.
- Start sepsis workup as outlined by hospital’s sepsis bundle.
  - CBC with diff, CMP, lactate, UA, blood, sputum and urine culture
  - If SARS-COV-2 positive and symptomatic: add CRP, LDH, coags and troponins to sepsis workup bundle
  - Strict I&O
  - If SARS-COV-2 with respiratory symptoms, consider decreasing IV fluids
- Questions regarding inpatient testing can be directed to Tiger Text Role: COVID19 ID On Call Notification
- Contact the following
  - HOS at 202-925-2186 or RF 73886
  - COVID-19 Safety Office RF 2221
  - Laboratory for possible COVID-19 specimen ext 4439
  - Radiology tech if portable chest xray needed
  - Infection Prevention – Tiger Text Candace Johnson or Renee Zell
  - Emergency Management – Tiger Text Dr. Bruno Petinaux or call at 202-258-0615
  - Neonatology Attending on call (RF 2538)
Anesthesiology Attending on call (RF 6173)
Dr. Sheetal Sheth and Dr. Nancy Gaba – Tiger Text

Deliveries:
- Vaginal delivery should occur in LDR1,2,7, 8 or 10 with negative pressure.
  - If LDR1,2,7,8 or 10 are not available, consider 363 or 364
    - Prepare alternative LDR as described in section: Precautions for Patients Who Screen Positive and Have an Obstetric Complaint
    - Given increased risk of cesarean delivery, prepare patient:
      - Place bouffant cap and surgical mask
      - Place SCDs
      - Place second IV line
      - Cleans skin with CHG wipes
      - Place EKG leads
      - Consent for general routine care, blood transfusion and cesarean delivery
      - Identify health care proxy and phone number on CORES
      - Encourage epidural to minimize aerosolized procedures and GETA
      - COVID19 positive patients will be cared for by the physician team
      - Minimize health care providers
      - Continuously monitor the fetus externally
      - Continuous pulse oximetry
      - Avoid oxygen via nasal canula, non-rebreather for intrauterine resuscitation
      - If oxygen therapy is required for maternal benefit, patient will wear a surgical mask with the non-rebreather on top
      - Use disposable stethoscope
      - Hydrotherapy is not permitted
      - N95 and PPE is required during the second stage of labor
      - Terminal cleaning is required after the patient is transferred

- Cesarean delivery (CD) should occur in LD-OR2
  - If LD-OR2 is not available, CD should occur in Main OR 11
  - LD-OR2 preparation will comply with GW’s COVID-19 OR-11 Guideline
  - L&D Charge Nurse to Main OR Charge Nurse must occur prior to moving the patient to Main OR-11
    - Back elevator to Main OR requires badge access
    - Both LD-OR2 and Main OR-11 are positive pressure rooms. Air exchange filtration takes a minimum of 28 minutes.
    - HEPA Air Filtration in OR continuously starting 30 minutes prior to the case when clinically appropriate, throughout procedure, and for 30 minutes following the case. Terminal cleaning should not start until after 30 minutes of HEPA Air Filtration in empty OR.
  - Most experienced OBGYNs should perform the CD
  - Minimize the number of staff members entering and exiting the OR
  - Donning should occur prior to entering the OR
  - The ante-chamber contains a Hepa Air Filter
If an epidural is not in place and the patient requires a level 1 CD, consider a spinal if no contraindications.

- One attempt may be made by the most experienced Anesthesiologist.
- If GETA is required, intubation should occur in the LD-OR2 or Main OR 11.
- The COVID-19 Safety Officer RF 2221 will assist the Anesthesiologist with PPE and hood.
- After the procedure, extubation may occur in OR2 or OR11.
  - Anesthesiologist, RN and scrub tech to remain in the OR for 30 minutes after extubation.
  - Transporters will don PPE.
  - Once the patient has exited the OR, doffing of soiled boots, outer gloves, face shield and gown should occur in the OR and placed in the biohazard.
  - Doffing of the N95 should be completed last outside of the patient’s LDR.
  - Hand hygiene must be performed after doffing.

Multidisciplinary simulation of a level 1 cesarean delivery of a COVID19 patient who requires GETA is available daily.

Anesthesia:

- Per Society for Obstetric Anesthesia and Perinatology:
  - Early epidural anesthesia may reduce the need for GETA in case of CD.
  - A COVID-19 diagnosis is NOT considered a contraindication for neuraxial anesthesia.
  - Given prolonged patient exposure at close distances, all procedures (neuraxial blockade or intubation/extubation) should be performed by Attending Anesthesiologist using airborne precautions in appropriate PPE.

- Neuraxial blockade for labor:
  - Placement of neuraxial blockade may occur prior to SARS-COV-2 PCR results.
  - Placement prior to PCR results is at the discretion of the Anesthesiologist.
  - Do not take travel anesthesia cart into room.
  - Bring supplies needed for neuraxial placement into the room.
  - Double gloves are required for ALL procedures.

- Anesthesia for Cesarean Delivery:
  - If neuraxial blockade utilized:
    - Patient will wear a surgical mask with a non-rebreather on top.
  - If general anesthesia is needed:
    - PEE is required in the OR. Safety Officer (RF 2221) will assist with proper PPE.
    - Large clear plastic drape will be placed over patient’s upper torso and head to decrease aerosolization.
    - Pre-oxygenation should occur with a circuit extension and HEPA filter at the patient's side of the circuit, mask ventilation should be avoided, and RSI with video laryngoscope should be used for first attempt given risk of difficult airway. Follow COVID19 intubation department guidelines from “GW COVID for ICU and Anesthesia: GW Anesthesiology & Critical Care Medicine Guidelines” for the patient with suspected or known COVID-19 (Section C: Intubations).
    - Extubation is equally, if not more of a significant risk. Minimize personnel, utilize N95/PAPR and PPE precautions. Complete extubation in the OR. Wait 30 minutes after extubation prior to opening doors to antechamber.
  - NSAIDs may be used safely in asymptomatic patients.
  - Antiemetics should be administered to prevent vomiting in patients undergoing cesarean delivery. However, due to potential risks of steroids in the setting of COVID
infection, consider avoiding the use of dexamethasone for PONV prophylaxis in suspected or COVID+ patients.

- Donning/doffing takes time, avoid crash situations by anticipating needs and maintaining communication between all involved teams. Airborne precaution PPE is required for anesthesia personnel for all cesarean sections, even in the case of a level 1 cesarean.

Critically Ill COVID-19 Patient

- A critically ill COVID-19 pregnant patient > 23 weeks admitted to the ICU will be prepared as described in the Deliveries section
- Consents for cesarean and blood to be completed on admission
- Identify and document health care proxy and telephone number
- Consider weight based lovenox if labor is not imminent
- Routine hand hygiene will be performed prior to entry
- PPE and N95 will be donned prior to entry in the ICU room
  - In the case of extended exposure, a PAPR should be worn
- A cesarean delivery kit, betadine splash and sutures will be outside of the room
  - Kits are located in the LD-OR Hallway
- Uterotonics will be available
- Ancef 2 grams and will be available in the pyxis
- In case of level 1 cesarean, the patient should not be transferred to the Main-OR11 or LD-OR2
- CODE L-19 to ICU BED # should be called overhead
  - This will bring the Chief Resident, Attending, COVID –19 RN1/RN-2 and NICU
- Remove excess pillow and blankets
- Place patient on stiff transfer board
- Intubation as described in the Anesthesia for Cesarean section should be performed
- Complete cesarean, immediate cord clamping
- Pass baby to NICU team waiting at the door
- The infant will be transported to the negative pressure room in the NICU with the transporter draped in a large plastic drape per protocol
- Doffing of soiled boots, outer gloves, face shield and gown should occur in the ICU room and placed in the biohazard.
- Doffing of the N95 should be completed last outside of the ICU room
- Hand hygiene must be performed after doffing

Code-L:

- Code-L indicates an obstetric emergency
- Code-L team members should be identified at the beginning of each shift
  - Members include Ob Attending, Chief Resident, R1, R2 and NICU
  - Transport equipment per Code-L Guidelines
- With the spread of COVID-19 in the community, patients who have not been screened should be considered PUIs.
- Code L to the Valet, Lobby and ER
  - Place mask and gloves on patient as soon as possible
  - Code L team should don gloves and mask prior to attending to patient
  - Code L team to inquire about travel, COVID-19 symptoms and contacts
If screens positive, Code L team to don PPE and transfer patient to negative pressure room
  - Once on L&D, SARS-COV-2 Real Time PCR sent per routine protocol
    - If negative, discontinue droplet and airborne precautions

Placental Disposition:
- The placenta from a suspected or confirmed COVID-19 patient, regardless of symptoms, should be sent to pathology for evaluation
- In addition to routine label, COVID-19 should be written clearly on the placental bucket and placed into a biohazard bag
- The placenta from a suspected or confirmed COVID-19 patient will not be released for burial, consumption or encapsulation

Infant:
- Risks and benefits of temporary separation of the mother from her infant should be discussed with all confirmed and suspected COVID-19 cases by the healthcare team prior to delivery.
  - **Confirmed COVID-19 mother with active symptoms**
    - Infant to be placed on airborne and droplet precautions and PPE worn
    - The infant will be admitted to the NICU’s negative air-pressure isolation room
    - The infant will be cared for by the NICU staff
    - The infant may not have visitors
    - Video access to the baby will be provided to the mother
    - Infant to be bathed as soon as possible
    - SARS-COV-2 PCR will be completed at 24 hours of life
    - If infant negative, he or she will be discharged in accordance with CDC’s guidelines
      - Education regarding COVID-19 and infant care will be provided
      - Infant should be discharged to a non-infected caregiver
      - If mother resides in the same household,
        - Maintain 6 feet or greater distance from infant
        - Hand hygiene, wear gloves/mask during infant care until mother has been afebrile without antipyretics for >72 hours AND at least 7 days has passed since first symptoms appeared
        - Precautions maybe lifted if 2 SARS-COV-2 tests are negative and 24 hours apart
        - Non-infected caregiver should monitor themselves for symptoms
  - **If infant positive but asymptomatic**, consider repeating in 48-72 hour increments until 2 negative per American Academy of Pediatrics Guidelines
    - Infant to be discharged on a case by case basis with close outpatient follow-up
    - Education regarding COVID-19 and infant care will be provided
      - Optimally, infant should be discharged to a non-infected caregiver <60 years of age without co-morbidities
      - If mother resides in the same household,
        - Maintain 6 feet or greater distance from infant
- Hand hygiene, wear gloves/mask during infant care until mother has been afebrile without antipyretics for >72 hours AND at least 7 days has passed since first symptoms appeared
- Precautions maybe lifted if 2 SARS-COV-2 tests are negative and 24 hours apart
- Non-infected caregiver should monitor themselves for symptoms
  - **If positive and needs respiratory support**, the NICU will coordinate with Children’s National Medical Center for the most appropriate care and probable transfer.
  
  **If the patient declines separation, provide the AAP/CDC recommendations, consult NICU and consider Ethics consultation.**
  - Suspected or Confirmed COVID-19 mother without symptoms
    - Rooming in may occur if requested
    - Consider using engineering controls such as a curtain or barrier to separate the infant and mother
      - The infant should be >6 feet away
    - The mother should practice hand hygiene, don gloves and a mask prior to touching or breastfeeding the infant.
      - Mask and gloves remain in place during contact with the infant.
      - If possible, pumped breastmilk should be provided by a healthy support person or healthcare worker as described below
    - The infant will not be permitted in the respite nursery
    - Any healthcare provider who comes in contact with the infant or mother should don appropriate PPE.
    - Support person should wear a mask at all times

Breastfeeding:
- At this time, there is no evidence that COVID-19 is spread through breast milk. It is safe and appropriate for the mother to provide breast milk to the infant. However, coronaviruses can spread from a positive mother to the infant through respiratory droplets. The CDC recommends that a healthy family member or health care worker provide pumped breast milk to an infant whose mother is COVID-19 positive. If the mother declines, she should don a mask and wash her hands for 20 seconds prior to breastfeeding and perform breast hygiene.

**Breast pumping:**
- Refer to UHS’ COVID-19 Breast Milk Transportation Guidelines/Checklist
- The RN will teach the patient and support person, if applicable, about proper hand and breast hygiene before and after each pumping session.
- A sanitized breast pump will be provided to the patient.
- Patient will don gloves and mask while breast pumping or feeding
- Wipe surface where bottles/syringes will be placed after collection with a disposable germicidal wipe, cover the clean surface with a clean towel or paper towel
- Collect milk
- Ensure syringe/bottle cap is secured, cleans outside of syringe/bottle with a disposable germicidal wipe
• Label with patient sticker, date and time
• Place in biohazard bag
• Store in patient’s room refrigerator
• A separate microwave, reserved for COVID-19 patients, to sterilize pump parts will be available.
• The pump must be wiped down after every use.
• The pump parts are to be sterilized after every use.
• If neonate is in the NICU
  • Healthcare worker (HCW) 1 dons PPE to retrieve breastmilk
  • HCW 2 performs hand hygiene and dons gloves to transport breastmilk to NICU, calls NICU RN to inform
  • NICU RN dons PPE and receives breastmilk from HCW2
  • NICU RN cleans outside of syringe/bottle with a disposable germicidal wipe and allows the syringe/bottle to dry prior to storage or feeding

Terminal Cleaning:
Terminal cleaning is necessary for any room in which a suspected COVID-19 patient has been.
  o Once a HEPA filter is placed LDR7, the room must remain empty for one hour for complete air turnover before EVS starts the terminal clean.
  o ORs must remain empty for 30 minutes for complete air turnover before EVS starts the terminal clean.
  o Refer to Environmental Cleaning-Terminal Operating Room Sanitation Policy

Visitor Policy:
• All patients, staff and visitors will be screened in the Main Lobby.
• 1 asymptomatic designated support person of the suspected COVID-19 patient, who has had contact with the patient prior to arrival, may accompany the patient in triage and labor and delivery.
• Only 1 designated support person, may stay with the suspected COVID-19 patient on 3 North.
• If the designated support person leaves the hospital, they will not be permitted back into the hospital.
• Visitors will have their temperature taken twice a day, this is surveillance and does not require documentation in the EMR
  o If febrile, contact the Command Center
  o If visitor refuses temperature, he or she may be asked to leave the hospital
• Symptomatic COVID-19 patients will not have visitors.
• As of March 12th, 2020, children younger than 18 will not be allowed onto L&D, the 3 North or NICU.
• NICU: Only one parent or guardian with the infant band will be able to visit the infant in the NICU.
  o Hand hygiene will be performed.
  o If the parent or guardian with the infant band leaves the hospital, they will not be able to return to hospital until the following day.
• Symptomatic support person of a suspected or confirmed COVID-19 patient may not enter the NICU.

Elective Procedures:
• As of March 26th, 2020, elective procedures, such as a bilateral tubal ligation or salpingectomy, will not be performed in compliance with the hospital’s surgical guidelines
• A tubal ligation or salpingectomy may be performed concomitantly with a cesarean
• Patients who request permanent sterilization should be offered alternatives, such as LARCs

More than one patient infected with COVID-19
• Reach out to HOS and other units for overflow relief as possible.
• Primary RN to don PAPR while spending prolonged periods of time in the contaminated room.

Updated 4/11/2020
Table 1: Cautions to Common Medications on Labor and Delivery

<table>
<thead>
<tr>
<th>Medication</th>
<th>Indication</th>
<th>Usual Dose</th>
<th>Adverse Effects</th>
<th>Alternatives/Recommendations for COVID-19</th>
</tr>
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</table>
| Azithromycin (Anticipate National Shortage) | 1. Chlamydia  
2. PPROM  
3. Endometritis Prevention with ROM and Cesarean | 12 mg IM, 2 doses 24 hours apart | Delayed Viral Clearance  
Avascular Necrosis  
Impaired Glucose Metabolism | 1. Amoxicillin 500mg po TID for 7 days  
2. Amoxicillin 2g q8h + Erythromycin 250mg q6h for 48h then Amoxicillin 250mg po q8h + Erythromycin 333mg po q6h for 5 days (PCN allergy: Erythromycin 25mg po q6h for 10d)  
3. Ancef 1g-3g IV (weight based dose) + vaginal prep |
| Betamethasone | Fetal lung maturity  
Decrease IVH-4  
Decrease NEC | 50mg po then 25mg po q6h for 48 hours | Premature Closure of Ductus  
Aortis  
Oligohydramnios | *23-34 weeks only  
*Administer on the cusp of viability only if delivery is imminent  
*Avoid Rescue Course  
*Avoid 34-36.6 weeks  
*In case of shortage: Dexamethasone 6mg IV q12 times 4 doses |
| Indocin | Tocolysis | 50mg po then 25mg po q6h for 48 hours | Premature Closure of Ductus  
Aortis  
Oligohydramnios | *Ok to use as an alternative to Procardia |
| Lovenox | <50kg, 20 mg daily  
50-90kg, 40 mg daily  
91-130kg, 60 mg daily  
131-170 kg, 40 mg bid  
>170kg, 0.6mg/kg/day | Respiratory Depression  
Cardiac Arrest | *Administer anticoagulation, unless contraindicated, to SAR-COV-2 positive who are symptomatic and in critical condition |
| Magnesium Sulfate | Neuroprotection  
23.0-33.6 weeks | 6 gram bolus then 2 grams per hour | Respiratory Depression  
Cardiac Arrest | *Administer for no more than 12 hours  
*4 gram bolus only if respiratory distress |
| Magnesium Sulfate | Pre-eclampsia | 4 gram bolus then 2 grams per hour | Respiratory Depression  
Cardiac Arrest | *Use with severe features  
*4 gram bolus then 1 gram per hour if Cr 1.1-2.5  
*Lorazepam 4mg IV over 2.5 minutes may repeat after 15 minutes. Max dose 8mg in 12 hours |
| NSAIDS | Post Operative Pain | 30mg IV q6h | | *Ok to use post op/*Consider Tylenol 1 gram IV |

Table 2: SARS-COV-2 PCR Testing
Table 3: Maternal Disposition SARS-COV-2 Positive with Symptoms

Confirmed COVID-19 and Requires Admission to Women's Services
Follow COVID-19 Guideline Chain of Command*

*House Office Supervisor #73886
Safety Officer #2221
Tiger Text Dr. Petinaux, Dr. Gaba and Sheth
NICU Attending #2538
Anesthesia Attending # 6173